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Christian Henriot (Ed.)

MODERN CHINA IN FLUX

NETWORKS, MOBILITY, AND TRANSFORMATION

TRANSFORMATIONS OF MODERN CHINA

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Modern China in Flux

Transformations of Modern China



Edited by

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Christian Henriot

Introduction

From Nodes to Narratives: Network Analysis and the Dynamics of Modern China

The expansion of the methodological landscape in historical research, particularly with the advent of digital tools, has introduced network analysis as a transformative approach for interpreting complex historical data. Originating from graph theory, network analysis allows for the examination of relationships between entities – be they individuals, organizations, or concepts – offering fresh insights into the structures and dynamics of historical phenomena. This method has broadened our analytical scope, enabling historians to uncover patterns and connections that conventional methodologies might overlook, thereby enriching our understanding of history's intricate web of interactions.

The core concept of network analysis is quite simple: entities (node/vertex) are connected by a type of relationship (edge/tie). The structure and properties of these connections can reveal much about the entities themselves and their broader context. Network analysis allows us to identify central figures in a social group, uncover hidden pathways of communication and power, and illuminate the broader social structures within which individuals and groups operate. Since these notions are not a common practice in the historical field, let us make some distinctions more explicit. Network analysis and social network analysis (SNA) are closely related methodologies, but the latter derives from the former. Network analysis is a broader term that refers to the study of any kind of relationships among entities, which could be computers in a network system, nodes in a power grid, cities in a transportation network, or words in texts. SNA, on the other hand, is a specific application of network analysis to social structures.

In the triptych of figures below, we depict a rudimentary network characterized by distinct properties. Figure 1a delineates nodes, represented as blue circles, and their interconnections. The illustration on the left manifests a network where all nodes are interconnected within a singular component, while the right segment of the figure presents a network fragmented into three distinct components. Figure 1b introduces the concept of directionality in networks. While most networks are undirected, certain networks, such as those mapping correspondences, are inherently directed; for instance, a letter is dispatched from one individual (A) to another (C). Additionally, the magnitude of the relationships can be quantified, as further explicated below.

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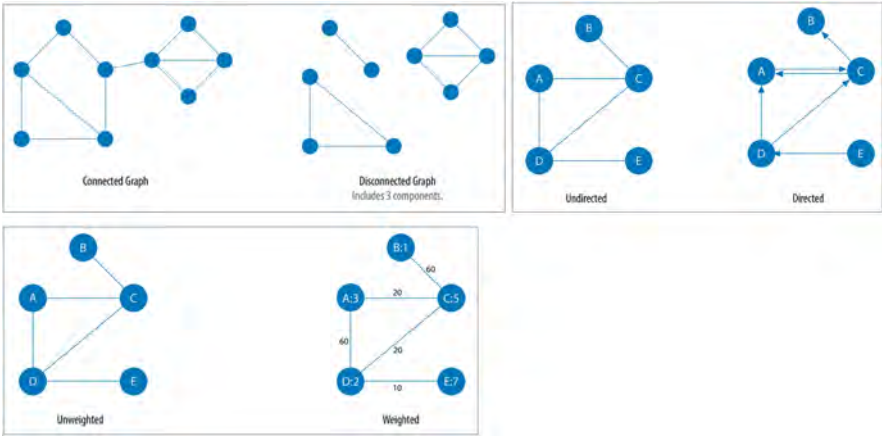


Figure 1: Three types of basic networks (clockwise 1a, 1b, 1c).

Source: All three figures are borrowed from *Graph Algorithms: Practical Examples in Apache Spark and Neo4j*. Sebastopol, CA: O'Reilly Media, 2019, 19–21.

In Figure 1c, one might postulate that individual A3 has dispatched a greater volume of correspondence to individual D2 (indicated by a value of 60) than to C5 (indicated by a value of 20), potentially signifying a more profound relationship, a more vigorous intellectual interchange, or an augmented quantity of commercial transactions. The interpretation of these relations is contingent upon the nature of the data and the context of the relationships depicted within the graph.

Network analysis transcends mere visualization. Indeed, visual representations are the embodiment of statistical measures in a graph format. Network analysis proffers sophisticated methodologies to qualify and quantify the entities represented by nodes (be they individuals, organizations, locales, etc.) and the connections represented by edges (kinship, transactions, membership, etc.). Pertinent to this discussion is the concept of “centrality measure” for nodes and “weight” for edges. Within this introductory exposition, we will focus on disparate measures and the types of inquiries they can address when applied to empirical networks.

Figure 2 elucidates representative centrality measures and the questions they are poised to answer. The “Degree” measure queries the number of connections a particular node possesses, with node “A” exemplifying a high degree of connections. “Betweenness” seeks to ascertain which node exercises the most control over the flow between other nodes and groups, with node “C” serving as a pivotal bridge. “Closeness” evaluates which node can most expeditiously reach all other nodes in a graph or subgraph; here, node “B” is recognized for its proximity with the fewest hops required in its subgraph. Lastly, “PageRank” assesses the significance of a node, predicated on the quantity and quality of inbound links, designating “D” as

paramount, primarily due to its numerous and weighty in-links, with “E” following suit by virtue of the influence exerted by D’s link.

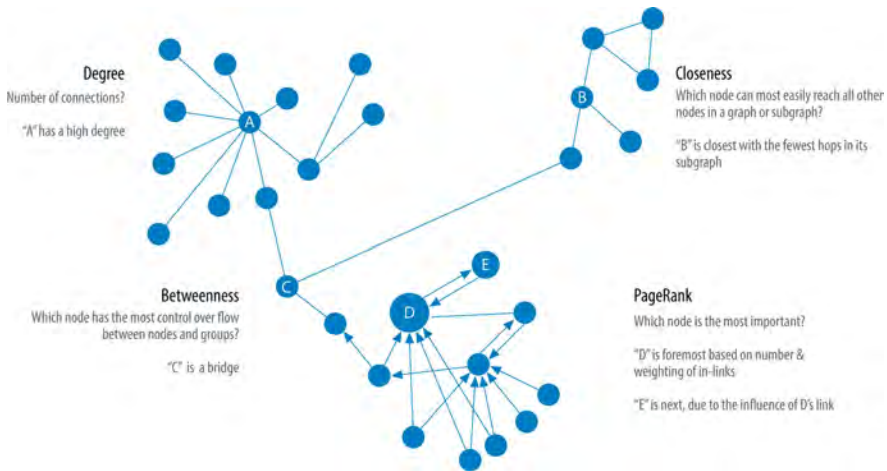


Figure 2: Representative centrality measures and the types of questions they answer.

Source: *Graph Algorithms: Practical Examples in Apache Spark and Neo4j*. Sebastopol, CA: O’Reilly Media, 2019, 78.

Thus, social network analysis can help detect the underlying structure of social groups and help understand how information, resources, or behaviors spread within a group. To further illuminate the methodological underpinnings and potential of social network analysis (SNA) within the field of historical research, it is imperative to delve into the foundational parameters that govern this analytical approach. SNA operates on the principles of nodes (individual actors, people, or things) and edges (the relationships or interactions between these nodes), providing a framework for understanding complex social structures through quantitative measures and visual representations. Key parameters such as centrality measures (to identify influential nodes), density (to assess the overall connectivity within the network), and subgroups or communities (to detect the formation of clusters within larger networks) are crucial for interpreting the underlying patterns and dynamics of historical phenomena.

The work of Borgatti, Everett, and Johnson offers an extensive overview of these parameters, equipping historians with the tools to dissect and reconstruct the intricate web of historical relationships with greater precision and depth. Incorporating diagrams or visual aids that exemplify these SNA parameters could significantly enhance the comprehension and appreciation of this methodology’s applicability to historical studies, bridging the gap between theoretical understand-

ing and practical analysis.¹ The discipline-specific application of SNA in history, as pioneered by scholars like Bonnie Erickson and further explored in the context of political science by Ward et al., demonstrates the versatility and breadth of network analysis across different fields of study.² Erickson's seminal work, "Social Networks and History," underscores the importance of social networks in shaping historical events and processes, advocating for a more integrated approach that combines conventional historical methods with the analytical power of SNA. Similarly, Ward's exploration emphasizes the role of network analysis in elucidating the complex interplay of political relationships, power dynamics, and policy-making processes. These studies collectively highlight the utility of network analysis not just as a methodological tool but as a paradigm shift in understanding and interpreting the mosaic of human interactions over time.

In the field of historical research, however, the application of network analysis to data extracted from historical sources presents a range of specific difficulties, depending on the origin of the source and its processing (manual vs. OCR), but the main problem is that of uneven and missing information. This may introduce additional biases, considering this is a recurrent issue in historical research. Nevertheless, network analysis has provided historians with new ways of understanding the past by exploring complex systems of relationships that previous methodologies might overlook. Network analysis has revitalized the traditional method of prosopography by introducing a dynamic approach to understanding collective biographies.³ Unlike the isolated focus of classical prosopography, network analy-

1 Stephen P. Borgatti, Martin G. Everett, and Jeffrey C. Johnson, *Analyzing Social Networks*, 2nd edition (Los Angeles: SAGE Publications, 2018).

2 Bonnie H. Erickson, "Social Networks and History: A Review Essay," *Historical Methods: A Journal of Quantitative and Interdisciplinary History* 30, no. 3 (January 1, 1997): 149–57; Michael D. Ward, Katherine Stovel, and Audrey Sacks, "Network Analysis and Political Science," *Annual Review of Political Science* 14, no. Volume 14, 2011 (June 15, 2011): 245–64.

3 Michele Pasin and John Bradley, "Factoid-Based Prosopography and Computer Ontologies: Towards an Integrated Approach," *Digital Scholarship in the Humanities*, 30, no. 1 (2015), 86–97; Michael Fuller and Hongsu Wang, "Structuring, Recording, and Analyzing Historical Networks in the China Biographical Database," *Journal of Historical Network Research* 5, no. 1 (2021); Matthew Hammond, "From Digital Prosopography to Social Network Analysis: Medieval People in the Twenty-First Century," *Medieval People* 36, no. 1 (November 30, 2021), art. 10; Heidi Jauhainen and Tero Alstola, "A Social Network of the Prosopography of the Neo-Assyrian Empire," *Journal of Open Humanities Data*, 8 (March 17, 2022): 8; Minna Tamper, Petri Leskinen, and Eero Hyvönen, "Visualizing and Analyzing Networks of Named Entities in Biographical Dictionaries for Digital Humanities Research," in *Computational Linguistics and Intelligent Text Processing*, ed. Alexander Gelbukh, Lecture Notes in Computer Science (Cham: Springer Nature Switzerland, 2023), 199–214.

sis uncovers the interconnectedness that defines historical narratives. For instance, the work of John Padgett and Christopher Ansell on the Medici family illustrates how social, political, and economic ties can be mapped to reveal strategies of power consolidation.⁴ Similarly, Claire Lemerrier's analysis of nineteenth century French business practices and Erikson's study of the English East India Company showcase network analysis' power to illuminate complex historical relationships and challenge conventional views.⁵

The burgeoning field of historical network research has not only fostered a novel methodological paradigm but has also catalyzed the formation of a vibrant scholarly community. In France, a consortium of historians founded the ResHist network in 2013. This initiative garnered financial backing from the French CNRS and its research group specializing in networks and distributed systems – both pivotal in championing network analysis within the country.⁶ Concurrently, archaeologists and specialists in ancient history marked a significant development with the inauguration of the “Connected Past” conference in 2012 at the University of Southampton.⁷ For modern historians, the genesis of interest can be traced back to a 2009 symposium organized by German scholars. This event subsequently evolved into a diverse, internationally focused academic community.⁸ This collective has been instrumental in institutionalizing network analysis within historical studies, providing a forum for exchange, debate, and collaboration. Central to this endeavor is the *Journal of Historical Network Research*, a pioneering publication launched in 2017 that showcases the cutting-edge applications of network analysis in unraveling complex historical phenomena. The journal, along with regular conferences and workshops, has significantly contributed to shaping the contours of this emerging discipline, encouraging scholars to explore and refine network methodologies.⁹ Our volume builds upon the foundation laid by this community, drawing on the diverse methodologies and insights that have emerged from its collaborative efforts. By incorporating case studies that reflect the latest advance-

4 John F. Padgett and Christopher K. Ansell, “Robust Action and the Rise of the Medici, 1400–1434,” *American Journal of Sociology* 98, no. 6 (1993): 1259–1319.

5 Claire Lemerrier, *Un si discret pouvoir: aux origines de la Chambre de commerce de Paris : 1803–1853*, L'espace de l'histoire (Paris: La Découverte, 2003); Emily Erikson, *Between Monopoly and Free Trade: The English East India Company, 1600–1757*, Princeton Analytical Sociology Series (Princeton: Princeton University Press, 2017); John Haggerty and Sheryllynn Haggerty, “Networking with a Network: The Liverpool African Committee 1750–1810,” *Enterprise & Society* 18, no. 3 (September 2017): 566–90.

6 <https://gdr-rsd.fr/le-gdr-rsd/>

7 <https://connectedpast.net>

8 <https://historicalnetworkresearch.org>

9 <https://jhn.uni.lu>

ments in network analysis, we aim to extend the dialog initiated by the community, pushing the boundaries of historical inquiry further.

In the field of Chinese history, network analysis is still in its infancy. Until very recently, this was a method to be found in works about pre-modern China. One of the groundbreaking works in this area is *The Transformation of Medieval Chinese Elites (850–1000 C.E.)* by Nicholas Tackett, a historian specializing in medieval Chinese history. Tackett has made significant contributions to the understanding of the Tang dynasty's social and political dynamics through network analysis, in particular the social transformation of elites in late Tang and Five Dynasties China. Drawing on a database of approximately 30,000 individuals, Tackett maps the kinship and marital ties of the elite families, revealing a dramatic shift in their geographic distribution and social connections. He argues that the elite families, which were once concentrated in the North and were closely intermarried, dispersed across the country following the Huang Chao rebellion, leading to a decline in their social and political influence. He argues that the aristocracy was not gradually replaced by a meritocratic bureaucracy but was decimated by the late Tang rebellions, leading to a sudden and dramatic shift in elite composition. Tackett's work is a prime example of how network analysis can help historians uncover large-scale social transformations over time.¹⁰

Building upon Nicholas Tackett's foundational work, the studies by Laurent Van Cutsem, Anna Sokolova, Ming-Kin Chu, and Song Chen further enrich our understanding of the intricate fabric of historical networks spanning the Tang and Song periods. Van Cutsem's examination of Chan Buddhist genealogies through the *Zutang ji* and Sokolova's exploration of Buddhist communities in Tang China reveal the profound impact of religious networks on social structures and intellectual exchanges, setting a prelude to the complex interplay of political, social, and religious networks in subsequent eras. These studies, by delving into the religious underpinnings and communal networks of the era, not only complement Tackett's analysis of elite dynamics but also highlight the broader implications of network formations beyond the political elite, encompassing religious communities and their influence on the social and political tapestry of imperial China.¹¹

¹⁰ Nicolas Tackett, *The Destruction of the Medieval Chinese Aristocracy*, First paperback edition, Harvard-Yenching Institute Monograph Series (Cambridge, Massachusetts: Harvard University Asia Center, 2016); Nicolas Tackett, "The Evolution of the Tang Political Elite and Its Marriage Network," *Journal of Chinese History* 中國歷史學刊 4, no. 2 (July 2020): 277–304; Nicolas Tackett, "Great Clansmen, Bureaucrats, and Local Magnates: The Structure and Circulation of the Elite in Late-Tang China," *Asia Major* 21, no. 2 (2008): 101–52.

¹¹ Laurent Van Cutsem, "Lineages as Network: A Study of Chan Genealogy in the *Zutang Ji* 祖堂集 Using Social Network Analysis," *Religions* 14, no. 2 (February 2, 2023): 205; Anna Sokolova,

Furthermore, Ming-Kin Chu's detailed exploration of the epistolary networks between Li Gang and Sun Di, alongside Song Chen's insights into the political and administrative networks within the Song dynasty, builds a compelling narrative on the intricacies of political and literary communications among the literati. Chu's work, focusing on the strategic use of letters to navigate political landscapes and facilitate rehabilitation, bridges the methodological gap between Tackett's structural analysis of elite networks and the nuanced, personal strategies employed by individuals within these networks to achieve political ends. Song Chen's contribution, by dissecting the administrative complexities and social networks underpinning governance in the Song dynasty, further underscores the methodological versatility of network analyses – extending Tackett's insights into the dynamics of elite networks to encompass a wider array of social interactions and political strategies.¹² These integrated studies collectively demonstrate the adaptability of network analysis across different historical contexts, providing a richer, more nuanced understanding of the multifaceted networks that shaped the political, social, and religious landscapes of Tang and Song China.

The special issue of the *Journal of Historical Network Research* in 2021 showcased the dynamic applications of network analysis across different periods of Chinese history. Shang Wenyi and Sang Zizhou's study on the Eastern Jin dynasty reveals the structural dynamics of aristocratic families, drawing parallels with Padgett's analysis of the Medici by illustrating how preferential attachment and homophily fostered a resilient social cohesion among the elite, ensuring their dominance despite political turbulence.¹³ This approach mirrors historical network studies in other contexts, demonstrating the universal applicability of network theories to understand the underpinnings of social structures. Xiong Huei-Lan's examination of the Song dynasty's imperial library officials through a network lens further exemplifies the utility of network analysis in historical scholarship, uncovering the impact of the dynasty's talent-nurturing policy on the careers of

"Regional Buddhist Communities in Tang China and Their Social Networks: The Network of Master Fayun (?–766)," *Religions* 14, no. 3 (March 2, 2023): 335.

¹² Ming-Kin Chu, "Realizing the 'Outwardly Regal' Vision in the Midst of Political Inactivity: A Study of the Epistolary Networks of Li Gang 李綱 (1083–1140) and Sun Di 孫覲 (1081–1169)," *Religions* 14, no. 3 (March 14, 2023): 389; Song Chen, "Patterns of Integration: A Network Perspective on Popular Religious Connections in China's Lower Yangzi, 1150–1350," *Religions* 14, no. 5 (April 26, 2023): 577.

¹³ Wenyi Shang and Zizhou Sang, "Solidity in a Turbulent Flow: The Social Network of Aristocratic Families in the Eastern Jin Dynasty (317–420 C.E.)," *Journal of Historical Network Research* 5, no. 1 (2021).

junior officials.¹⁴ This research highlights the strategic role of appointments within the imperial bureaucracy, elucidating the mechanisms of career advancement and the evolution of bureaucratic practices over time. Peter K. Bol's investigation into kinship and scholarly networks in Wuzhou during the Song and Yuan dynasties complements these studies by focusing on the spatial and social dimensions of intellectual communities.¹⁵ Bol's use of the China Biographical Database (CBDB) to analyze the localization of kinship ties and the expansion of literati networks offers a detailed view of the changing nature of social and scholarly associations, underscoring the role of geographical and relational proximities in shaping intellectual exchange and community formation.

In the field of modern Chinese history, there is no shortage of works that mobilize the concept of "network," but these studies have not seriously tackled the issue of grounding their analyses on empirical data. This does not mean that the authors have created networks out of thin air. Their work relies on the patient combing of historical sources from which they can ascertain the prevalence of strong bonds between different sets of historical actors. Bryna Goodman's study of native-place associations in Shanghai is a most representative example of this line of inquiry, although it must be said that network analysis was not yet part of the China historian's toolbox.¹⁶ Yet, works that placed networks not just as concepts, but as actual operational social mechanisms at the core of their arguments would have benefited greatly from a serious engagement with network analysis. *At the Crossroads of Empires: Middlemen, Social Networks, and State-Building in Republican Shanghai* (2008) is completely devoid of any formalization of the social networks concept at the heart of the book.¹⁷ Such an absence is even more questionable in Chen Zhongping's book that explicitly associates "networks" and "revolution," but fails to mobilize even the most basic network methodology to back up his arguments.¹⁸

Brett Sheehan was among the first to make an innovative attempt to study Chinese banks from the perspective of networks using network analysis as a methodology. His research focused on bank directorships to illuminate the effect of

14 Huei-Lan Xiong, "Path toward the Top Leadership: A Network Analysis of the Civil Service System in the Early Southern Song (1131–1164)," *Journal of Historical Network Research* 5, no. 1 (2021).

15 Peter K. Bol, "From Kinship to Collegiality: Changing Literati Networks, 1100–1400," *Journal of Historical Network Research* 5, no. 1 (September 8, 2021).

16 Bryna Goodman, *Native Place, City, and Nation: Regional Networks and Identities in Shanghai, 1853–1937* (Berkeley: University of California Press, 1995).

17 Nara Dillon and Jean Chun Oi, *At the Crossroads of Empires: Middlemen, Social Networks, and State-Building in Republican Shanghai* (Stanford, Calif.: Stanford University Press, 2008).

18 Zhongping Chen, *Modern China's Network Revolution: Chambers of Commerce and Sociopolitical Change in the Early Twentieth Century* (Stanford University Press, 2011).

interlocking boards in the Chinese financial community.¹⁹ This was one of the earliest applications of network analysis to modern Chinese social history. However, few historians have taken this path. Only in the last few years have a small number of scholars taken up the challenge of visiting or re-visiting research topics with network analysis. This is again due to the special issue of the *Journal of Historical Network Research* edited by Chen Song and Henrike Rudolf, that a group of modern China historians have had the opportunity to demonstrate the relevance of network analysis as a methodology that can be applied to a wide range of topics.

In their contribution, Armand and Henriot use natural language processing (NLP) techniques, statistical techniques (PCA, clustering), and network analysis to map the individuals mentioned in the *Biographical Dictionary of Republican China* (BDRC) and reveal the underlying structure of the existing networks.²⁰ They distinguish between subjects of a biography (bionodes) and individuals mentioned within a biography (object-nodes) to identify and qualify relationships among them. The authors demonstrate that political and professional relations in the BDRC outweighed the traditionally accepted social ties (native place, school, etc.), thus challenging conventional categorizations of the Republican elites. They argue that the complex web of relations, in which the individuals in the BDRC were enmeshed, cut across such categories. The paper uncovers the underlying structure of the book, revealing the hidden relationships between individual biographies and the individuals therein. The authors also propose an approach that defines and qualifies relationships much more accurately, resulting in a more nuanced understanding of the social and professional networks in Republican China. This study ultimately establishes that network analysis can be a potent tool for source criticism to reveal the inner structure, logic, and biases inherent to the source. This is a method that can be used to analyze similar corpora in a critical and comparative perspective.

In her paper exploring the leadership network of 133 Chinese revolutionary leaders trained in Western Europe and the Soviet Union during the 1920s, Levine utilized quantitative, geospatial, and network analytical methods to reveal two groups within this dataset, called Soviet Returned Leaders (SRL).²¹ These include the Euro-Soviet Group (those who went to both Western Europe and the Soviet

¹⁹ Brett Sheehan, "Myth and Reality in Chinese Financial Cliques in 1936," *Enterprise & Society* 6, no. 3 (September 2005): 452–91.

²⁰ Cécile Armand and Christian Henriot, "From Textual to Historical Networks: Social Relations in the Biographical Dictionary of Republican China," *Journal of Historical Network Research* 5, no. 1 (September 8, 2021); Howard L Boorman and Richard C Howard, *Biographical Dictionary of Republican China* (New York: Columbia University Press, 1967).

²¹ Marilyn Levine, "Post WWI Chinese Revolutionary Leaders in Europe," *Journal of Historical Network Research* 5, no. 1 (September 8, 2021).

Union) and the Soviet Group (those who went solely to the Soviet Union). The study reveals that the Euro-Soviet Group had an earlier death and shorter lifespan than the Soviet Group. Moreover, there were significant geographic clusters based on their provincial and birth city origins. The paper identifies Zhou Enlai and Liu Shaoqi as key figures in the network based on their high centrality measures, indicating their significant influence and prestige. Zhou demonstrated extraordinary roles as a conduit for communication, a person of influence and prestige, and a power broker. Liu, on the other hand, emerged high in centrality measures and showed critical importance among his fellow Hunanese. The research also highlighted the duo of Cai Chang and Li Fuchun as potentially influential within the network. The study underscores the potential of network analysis for gaining novel insights into the structure and evolution of Chinese revolutionary leadership.

From the perspective of historical methodology, computational methods can equip historians with the means to tackle the complex data available on the Internet. In “Creating Biographical Networks from Chinese and English Wikipedia,” the authors employ Natural Language Processing methods to process large-scale data from biographies collected from Chinese and English versions of Wikipedia.²² This bilingual corpus was enriched with metadata recording every mentioned person, organization, geopolitical entity, and location in each biography. The data structure allows the analysis of relationships between biographies via shared content and the comparison of networks in different language settings. An automatic text classifier was used to extract Chinese biographies, while Named Entity Recognition was employed to generate metadata and extract relations. The authors argue that the dataset allows the creation of various networks depending on specific research questions. Their research potentially allows scholars to study the relationships between online biographies, analyze how the lives of specific people are presented in online public space, and compare how biographies are linked differently depending on the language and cultural context in which they were created.

These works demonstrate the potential of network analysis, by itself and in association with other methodologies such as GIS, NLP, and statistical analysis, in the field of Chinese history. They show how the method can reveal the structure of social relationships, the dynamics of political change, and the transmission of ideas. As more Chinese historical data becomes digitized and accessible, and as more scholars acquire the necessary technical skills, we can expect to see an increasing application of network analysis in this field. The application of network analysis

²² Baptiste Blouin, Pierre Magistry, and Nora Van den Bosch, “Creating Biographical Networks from Chinese and English Wikipedia,” *Journal of Historical Network Research* 5, no. 1 (September 8, 2021).

in historical research, however, is not without its challenges. Historians must be mindful of the limitations of their sources and cautious in the interpretation of the networks derived from them. Moreover, the practical skills required to carry out network analysis – data cleaning, database design, graph theory, and software proficiency – can be daunting.²³ A major challenge with historical data is often how to elaborate network data from historical sources. Network analysis is only as good as the data it is applied to, and all historical data is partial, fragmentary, and subject to interpretation. Network analysis is a tool, not a panacea, and it needs to be used with critical care. Nevertheless, the potential rewards, in terms of the new observations and perspectives that network analysis can bring to historical research, are significant.

Network analysis is also central to a recent volume on elites in modern China.²⁴ In her chapter, Henrike Rudolph innovatively applies network analysis to the study of female political activists in modern China. She addresses significant methodological challenges in understanding the role and recognition of women within the socio-political fabric of the Republican and Maoist eras. Rudolph's methodological novelty lies in her use of collective biographies as a dataset for network analysis, aiming to uncover the relational narrative structures that define and sustain the memory of these activists within the official historiography of the Chinese revolution and socialist construction. Rudolph critically engages with collective biographies, not merely as portrayals of individual lives but also as representations of societal values and historical narratives through relational structures. The use of network analysis to examine the connections between these activists allows Rudolph to identify patterns of recognition and erasure within the official historiography, offering insights into the construction of moral exemplars and the selective memory of women's contributions. This dual focus on individual and collective narratives showcases the potential of network analysis to reinterpret and critically examine historical sources, providing new perspectives on the construction of public memory and the recognition of women's roles in history.

Marilyn Levine's contribution showcases a comprehensive use of network analysis to explore the interconnected lives and influences of Chinese revolutionary and intellectual leaders. By focusing on two subsets from the Chinese Biographical Database (CBD) – the Soviet Returned Leaders (SRL) and a broader provincial sampling from Hunan, Sichuan, and Zhejiang – Levine's research methodologically

²³ Claire Lemerrier, "Formal Network Methods in History: Why and How?" in *Social Networks, Political Institutions, and Rural Societies*, vol. 11, Rural History in Europe (Brepols Publishers, 2015), 281–310.

²⁴ Cécile Armand, Christian Henriot, and Sun Huei-min (eds.), *Knowledge, Power, and Networks: Elites in Transition in Modern China* (Leiden: Brill Publishers, 2022).

innovates by integrating statistical, geospatial, and network analyses to illuminate the patterns of leadership development and the formation of a revolutionary elite. One of the most significant challenges is the creation of a dataset that is both comprehensive and detailed enough to allow for meaningful network analysis. By focusing on specific subsets of this database, Levine is able to conduct a focused analysis that sheds light on the intricate networks of relationships among key figures in Chinese political history. This approach allows her to uncover significant themes and patterns of leadership, such as generational cohesion tied to shared experiences and the impact of provincial origins on the development of political and cultural cohorts. Moreover, Levine's integrative analysis demonstrates the revolutionary roads these leaders took, both metaphorically in their political journeys and literally, as she explores the geospatial distribution of individuals within specific regions. This innovative approach underscores the role of regional affiliation and shared experiences in creating strong linkages among politically involved individuals.

Cécile Armand explores the complex interplay between language, social inclusion, and the identity of elite networks in Shanghai, focusing on the Rotary Club as a microcosm of broader societal transformations. Armand employs a meticulous analysis of archival documents, Rotary International records, and contemporary periodicals to construct a nuanced narrative of the club's evolution and its implications for Chinese elites. Armand's research methodologically stands out for its integration of quantitative data with qualitative insights, enabling a comprehensive understanding of the Rotary Club's social and cultural impact. She employs network analysis to trace the connections between Chinese and foreign members, illustrating how these relationships evolved against the backdrop of China's political upheavals and the shifting sands of international relations. This approach allows Armand to explore the complex ways in which the Rotary Club served as a site of cultural exchange, negotiation, and contestation, reflecting broader themes of globalization, nationalism, and identity formation in early twentieth century China.

Against this backdrop of diverse inquiries into modern China's fabric, our volume takes a decisive step forward by spotlighting the methodological ingenuity inherent in each study. The subsequent sections delve into the heart of this innovation, revealing how each contributor creatively transcends the traditional confines of historical research through the application of network analysis. This methodological pivot is not merely incidental; it embodies a conscious effort to harness the power of digital methodologies to decode the intricacies of networks that have long shaped the contours of Chinese history. By transitioning our focus from the wide-ranging impacts of these networks to the cutting-edge tools that bring them to light, we emphasize a dual narrative: one of historical continuity and methodological revolution. In this volume, we explore the methodological foun-

dations of network analysis, its application in historical research, and the challenges and opportunities it presents in modern Chinese history. Through a series of case studies, we will demonstrate the power of network analysis to illuminate the complex networks of relationships that shaped historical events and processes. We hope that this volume will serve as both an introduction to network analysis for historians and an inspiration for further innovative research in the field.

In his chapter, Thomas A. Larkin provides a comprehensive historical analysis of the American company, Augustine Heard & Co., and its substantial influence in Hong Kong during the nineteenth century. This paper presents a microhistorical study of the company's operations, reflecting on its experiences, strategies, and significant role in the commercial and social fabric of Hong Kong. Methodologically, Larkin combines network analysis and GIS to offer various angles from which he studies Augustine Heard & Co. He uses the company's Hong Kong branch office as a pivotal point of focus, symbolizing its crucial role in the socio-economic landscape of the city. Larkin paints a vivid picture of the intersections of commerce, culture, and politics in this global city during a time of significant change and global trade expansion. He argues that the company's presence in Hong Kong, embodied by its office that still stands today amidst the city's skyscrapers, is indicative of broader patterns of business conduct, economic development, and power relations in the region. Drawing on various historical sources, Larkin offers an intriguing spatial-microhistory approach, highlighting the tangible presence and influence of the company. He illuminates the company's substantial impact on local societies during a period of significant global trade expansion. His work represents a valuable contribution to our understanding of the historical dynamics of foreign businesses in the global context, particularly in the shaping of Hong Kong's socio-economic landscape during the nineteenth century.

Ling-ling Lien and Wei-chun Yeh present a profound and detailed examination of the experiences, challenges, and social networks of exceptionally talented women. Their study is grounded in the rich data they have gathered in the *Cainü wenhua* database.²⁵ They focus on the transformative journey of these women, including the adversities they faced, their coping mechanisms, and their success strategies. The authors argue that the mobility and cultural exchange within these networks played a crucial role in shaping both the lives of these women and the broader societal context in which they operated. The document underscores the importance of understanding and nurturing female talent, highlighting how societal norms and structures can often limit women's potential. It offers valuable

25 "Cainü Wenhua de Xiandai Zhuanxing 才女文化的現代轉型," accessed August 9, 2023, <https://mhdb.mh.sinica.edu.tw/TWC/>.

insights into the ways in which these women navigated and shaped the social, cultural, and political landscapes of their time, providing a unique lens through which to view the experiences of women in modern China. By focusing on the transformation of these networks in response to changing societal and cultural conditions, the authors provide a rich analysis of the societal constructs and personal circumstances that affect these talented women's personal and professional trajectories. This work, which also relies on a database, is a significant contribution to feminist studies, offering unique perspectives on the intersection of gender, culture, and talent in the complex dynamics of modern China.

In "Technocracy and Technostructure in Nationalist China: Expert Rule or Rule over Experts?", Thorben Pelzer presents a nuanced analysis of the dynamics between technocracy, technostructure, and political power structures in Nationalist China. Pelzer focuses on the perspective of professional engineers, employing network and sequence analysis on two linked datasets: The Chinese Engineers Relational Database (CERD) and a digitized list of offices held at selected government institutions.²⁶ His research probes the tension between technocrats and political leaders, providing illuminating insights into how this dynamic shaped the political and social landscape of Nationalist China. The paper argues that while Nationalist commissions functioned according to technocratic paradigms, the direct rule of engineers was confined to a select few within the broader professional scene. This viewpoint challenges common conceptions of technocracy, offering a more complex view of the interplay between technical expertise and political power. Pelzer's work highlights the importance of a multifaceted understanding of the role of engineers within government institutions during this critical historical period. His study contributes significantly to our understanding of the intricacies and implications of technocratic influence in Nationalist China.

The question of the role of experts is also central in the paper by Jen-shu Wu and Wei-chun Yeh. They use a network-based approach to study the role of agricultural technocrats in modern China, specifically within the Ministry of Agriculture and Forestry. The authors argue that these technocrats played a crucial role in shaping agricultural policies and practices, and that their networks of influence extended beyond the confines of the ministry. To decode the intricate relationships and dynamics within the Ministry of Agriculture and Forestry, the authors harness network analysis. Drawing data from the "Modern Agricultural Technology Talent Social Network System" with over 2,000 members, they craft an organizational network diagram showcasing educational and experiential backgrounds. Through visualizations, they demonstrate that shared educational experiences drove the

²⁶ <https://home.uni-leipzig.de/cerd/>

closeness between members. The network further reveals the prevalence of shared experiences among members, offering a comprehensive view of inter-departmental interactions and influence. This network-based approach enriches the authors' interpretation, shedding light on the structural and relational intricacies of the ministry.

Cécile Armand examines the dynamics of Sino-U.S. relations during a pivotal historical juncture. At its core, the study seeks to untangle the complex web of interactions between Chinese students and their American counterparts, set against the broader backdrop of the Exclusion Era and subsequent policy shifts. The paper underlines the profound human connections that transcended high-level political shifts. Chinese students, despite being a minority in the U.S., formed deep bonds with their American peers, achieving academically and drawing attention from significant American figures. Concurrently, many Americans fostered connections with China, either through visits or sustained engagement with China, including long professional sojourns. Armand starts from a single organization, the American University Club (AUC), which comprises a list of over 400 graduates from American universities. Methodologically, her research distinguishes itself by emphasizing the importance of alumni networks, thus offering a fresh lens to understand patterns of elite career development and collaboration. More specifically, Armand implements a novel method of network structural similarity (places) to capture the expansive and subtle networks of relationships. Rather than narrowing its focus on eminent figures, she broadens the scope to capture the expansive and subtle networks of relationships that ran through the membership of the club. Through this approach, the paper illuminates the nuanced interplay between policy-driven engagements and genuine human interactions, based on the careful curation and analysis of empirical data.

Nora Van den Bosch's chapter delves into the history and experiences of Chinese students in Belgium during the early twentieth century. The students, selected by the Viceroy of Liang Jiang, Duan Fang, were sent to Liège University with the expectation of absorbing Western knowledge and later contributing to China's modernization upon their return. The chapter highlights the significant role of Vincent Lebbe in establishing organizational structures and networks in Belgium to support these students, both materially and spiritually, but it also underscores the influence of the Minister of Foreign Affairs, Baron Paul de Favereau, in shaping this international academic exchange. Organizations such as the Association of the Chinese Catholic Youth and *Foyer Catholique* Chinois played pivotal roles in the education and well-being of Chinese students. The author also conducts an analytical exploration of scholarship allocations, revealing patterns and preferences towards certain prominent schools. Utilizing the Liubi Xuesheng-Dataset, Van den Bosch offers a comprehensive understanding of the socio-academic landscape for

Chinese students in Belgium during this era, shedding light on the interplay of education, networks, and socio-cultural dynamics.

Huei-min Sun's chapter examines the capital-intensive nature of the Shanghai publishing industry. The paper underscores the transition of the industry from manual to mechanized production, contrasting its evolution with France's publishing sector. The author cites previous research, emphasizing the significance of the Commercial Press as a pioneering entity in the industry. The study explores how content producers, like editors, collaborated with stakeholders possessing expertise in other areas of book production and distribution. The research delves into the capital structures of various publishing enterprises, highlighting the role of personal connections in capital mobilization. Case studies, such as the one about Dajiang Bookstore, illustrate the power dynamics within companies, where individuals like Chen Wangdao, with lesser financial contributions but strong team-building capabilities, emerged as influential figures. The analysis also sheds light on the importance of schools in establishing networks among teachers, colleagues, and alumni in the publishing industry. A significant aspect of the paper focuses on the concept of "bureaucratic capital." The author investigates the involvement of contemporary officials in the publishing sector, asserting that while many officials' names appear in the shareholder lists of the 21 sample companies, situations where a single official held a significant share were rare. The motivations for such investments range from cultural alignment and dividend collection to achieving specific political objectives.

Christian Henriot offers an original exploration of Shanghai's industrialists in a pivotal historical phase, specifically focusing on the year 1947. Using a unique source as his point of departure, the study pursues these individuals through diverse sources, from the *Who's Whos* to the *Shenbao*, emphasizing the need to integrate varied research tools to fully grasp the intricate web of relationships that characterized Shanghai's industrial elite. Employing network analysis, the paper reveals patterns of interconnectedness not at the company level, but through professional and semi-political committees. It highlights the central role of banks in connecting industrialists, a shift from previous entrepreneurial ventures. Key figures such as Wang Xiaolai, Qian Yongming, and Du Yuesheng emerged as central nodes within the network, demonstrating their extensive influence and affiliations in postwar Shanghai. Methodologically, the paper underscores the value of network analysis in historical research, particularly in understanding complex social landscapes. Despite its inherent limitations, network analysis, when combined with other interdisciplinary methods, offers an invaluable method to study the thousands of individuals who emerged from historical sources. In essence, this paper not only contributes to our understanding of Shanghai's business community during the twilight of the nation-

alist regime but also showcases the potential of computational methodologies like network analysis and natural language processing in historical research.

Táňa Dluhošová's chapter investigates the evolution and dynamics of Taiwan's political elites from the Japanese colonial era to the postwar period, focusing on the *habitus* of political elites. The author suggests that the political and social changes during this period had a profound impact on the political elites' *habitus*, which in turn shaped their perceptions and actions. Using analytical parameters like age, gender, education, and regional mobility, Dluhošová uncovers patterns of social stability and mobility among council members and their families. The analysis reveals shifts in age distributions, suggesting generational transitions in political participation. A focal point is the marital networks of these elites, which played a pivotal role in determining social mobility and integration within the elite community. The paper employs network visualization to showcase the intricate familial ties, emphasizing marriages that denote upward social mobility and consolidation within the elite echelons. Through this analytical lens, Dluhošová sheds light on the intertwined nature of political power, social mobility, and familial networks in Taiwan's tumultuous history.

Each paper presents unique perspectives on various aspects of modern China, ranging from the influence of technocrats and political elites to the role of networks in shaping social, cultural, and economic landscapes. A common thread running through these papers is the power of networks – whether social, political, or professional – in shaping individual trajectories and broader societal trends. This emphasis on networks provides a valuable lens through which to understand the complex dynamics of modern China, not because we merely state the existence of networks, but because we demonstrate their reality from empirical data.

Bridging the gap between the broad topics within the volume and the granular details, we transition to an in-depth discussion of the methodological contributions of the authors. This shift illuminates a collective dedication to expanding the horizons of historical inquiry through the application of network analysis. By pivoting our attention from the thematic breadth to methodological depth, we highlight an essential evolution in the study of modern China. This methodological progression is anchored in the nuanced employment of digital tools and the theoretical underpinnings of network analysis. These innovative approaches not only deepen our comprehension of historical events but also forge a solid foundation for subsequent research.

Lien and Yeh address the methodological challenge of converting sparse historical biographical entries into a quantifiable network, illustrating the relationships of elite women using visualizations. This work innovates by expanding the scope of analysis beyond the localities and organizations typically associated with elite women's history, offering a broader view of the influence of elite women's

culture and its transition into modernity. Their methodology allows for a detailed visualization of connections, including kinship, educational institutions, employment, social activities, and literary exchanges, shedding light on how women leveraged social and cultural capital in the face of significant societal changes. The chapter's approach to network analysis exemplifies the intersection of digital tools and historical inquiry, and it offers a template for other historians to reimagine the implications of women's roles in history through networked lenses. This innovative use of network analysis illuminates the shifting patterns of elite women's culture and contributes a new dimension to understanding the historical significance of women's literary and social activities.

Armand's study presents a methodological innovation in utilizing network analysis to explore the 1936 directory of the American University Club of Shanghai. Methodologically, the research incorporates multivariate and network analyses to interrogate educational patterns and their evolution from the late Qing dynasty to the onset of the Second World War. The chapter is particularly innovative in its application of contemporary Who's Who publications to reconstruct the alumni's career networks, offering new insights into the nature of these connections. This comprehensive approach to network analysis provides a nuanced view of how education shaped elite career development and collaboration, demonstrating the adaptability of network analysis tools in historical research. Armand's chapter enriches the volume by showcasing a meticulous method to glean meaningful insights from seemingly mundane membership lists and directories, contributing a robust methodological framework for future historical network analysis. The chapter exemplifies how historians can overcome data scarcity and leverage existing records to build a complex picture of historical networks. It underscores the transformative potential of network analysis in historical studies and sets a high bar for methodological sophistication in the field.

Henriot's contribution offers a methodological breakthrough in applying network analysis to fragmented and varied historical records. He utilizes an array of data sources, including digital versions of newspapers and professional directories, to map out the complex web of relationships within this group. Henriot's work is marked by the innovative use of natural language processing (NLP) to sift through vast amounts of unstructured data from the *Shenbao* newspaper, transforming it into a structured dataset amenable to network analysis. Methodologically, Henriot's research harnesses multivariate network analysis to dissect the connections between industrialists and various social, political, and corporate entities, rendering both the direct and indirect relationships that define Shanghai's social structure. Notably, his approach tackles the common issue of data disambiguation, essential for ensuring the accuracy of digital analysis methods. This comprehensive application of network analysis offers a nuanced perspective on how Shanghai's

industrialists forged and leveraged their networks, providing a methodologically robust framework for historians, showcasing the immense potential of network analysis to yield transformative insights in historical scholarship. The chapter is a testament to the creative potential of historians to adapt network analysis tools to the peculiarities of historical data, setting a new standard for methodological rigor and innovation in the field.

Pelzer's study showcases a unique application of network analysis to dissect the complex interplay between professional engineers and the Nationalist Chinese state. By addressing the methodological challenges inherent in historical research, particularly the sparse and fragmented nature of records from this period, Pelzer crafts a detailed exploration of engineers' roles within governmental institutions. His research stands out for its meticulous integration of the Chinese Engineers Relational Database (CERD) with digitized government office lists. This combination allows Pelzer to trace the professional trajectories of engineers, shedding light on their influence and positioning within the technostructure of Nationalist China. The study is particularly innovative in its use of network and sequence analysis, techniques not commonly applied in historical studies, to uncover the layered relationships and career patterns of these engineers. Methodologically, Pelzer distinguishes between the ideals of technocracy and the actual involvement of engineers in governance. He meticulously quantifies their presence within the state apparatus, distinguishing between those in political power and the larger body of professional engineers. The study exemplifies the innovative potential of historians to navigate the complexities of historical data, leveraging network analysis to reveal the nuanced interactions between technology and politics.

Dluhošová's chapter takes a novel approach to examining the political elite in Taiwan during a significant period of transition from Japanese colonial rule to Nationalist governance. Key to Dluhošová's methodology is the integration of a vast array of biographical data, synthesized into the Taiwan Biographical Ontology (TBIO), to construct a nuanced portrait of Taiwan's political elites across pivotal historical moments. The research leverages positional analysis, diverging from traditional individual career examinations, to explore the habitus of political elites, encompassing their dispositions and capacities for attaining social positions within specific fields. The study's innovative use of network analysis to map the marital and familial connections among political elites further illuminates the strategies of social mobility and the persistence of elite status across generations. Dluhošová's research stands out for its comprehensive examination of the structural composition of elite groups in Taiwan and their adaptation to political transitions. By systematically analyzing the portfolios of prestige held by political elites and their families, the study offers insights into the mechanisms of elite persistence and the evolution of social capital in a changing political context.

This volume presents an exploration of the complex interplay of networks in the shaping of modern China. The diverse array of case studies, each utilizing network analysis in novel ways, often in combination with other methods, highlights the immense potential that computational methodologies hold for historical research. Throughout this introduction, we have referred to network analysis in the singular, but there are multiple ways to approach it, and even different types of software (GEPHI, Cytoscape, etc.) to implement it. What we want to emphasize is that network analysis can be the central method *per se*, but in many cases, the contributors to this volume have introduced different techniques to match their data and their respective research objectives. This adds an element of complexity to the concept of network analysis, but it also expands the size and shape of the toolbox available to historians.

From unraveling the social dynamics among different sets of experts, to unveiling the intricate relationships among business elites in the Republican era, and even shedding light on the influential role of foreign-educated Chinese elites, these studies collectively underscore the power of network analysis in illuminating the often-obscured relational structures that underpin historical phenomena. However, the power of this tool is not without its problems, as the careful implementation of network analysis requires scholars to master a range of technical skills and maintain a critical awareness of the limitations inherent in their sources and data. For historians, there are elements of frustration because network analysis bypasses time and space, edges do not necessarily represent “real” social relations, or missing data may distort the results. Yet this is precisely where the historian’s creativity comes into play – figuring out how to convert sources into data and feed it into network analysis – with a critical perspective. Network analysis was not originally designed for historians, but here again, the critical attitude and ingenuity of historians are essential: How can we adapt and repurpose the tool to get the most out of it? Doing network analysis is not just projecting nodes and lines into space with pretty colors. It is a methodology that forces historians to rethink both their sources and what they make out of them. What this book demonstrates is that network analysis is much more than just a tool or a method – it is a way of thinking and a form of representation of historical and social reality. Therefore, it is not straightforward to implement and not intuitive for a historian.

The innovative utilization of network analysis and digital methodologies in this volume has distinctly advanced our understanding of historical narratives and structures. These works reveal a methodological shift towards embracing digital methods, enabling a more nuanced exploration of the dynamics of recognition, memory, and the construction of historical biographies. By integrating quantitative data with qualitative insights, the contributors have illuminated the social networks and patterns of influence that underpin significant historical periods and figures. Their studies have emphasized the adaptability of network analysis in

historical scholarship, showcasing its utility in bridging the gap between conventional research methods and the digital era. Through the innovative application of network analysis, these historians have not only provided new insights into the interactions between individual actors and broader social structures but also set a precedent for future research in the field. This volume therefore serves as both a demonstration of the immense potential of network analysis and a “call to arms” for historians to engage with this methodology. As more historical data becomes digitized and accessible, and as historians continue to develop the necessary technical skills, the use of network analysis in historical research is likely to grow, opening new avenues for understanding and interpreting the past.

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Thomas M. Larkin

The Hong Kong Branch: A Spatial-Microhistory of Augustine Heard & Co., 1856–1876

Introduction

The office is beautifully situated on an eminence looking over the harbor, and with the parade ground, directly below it, where is almost always something going on in the afternoon – either drill of the English troops – playing of the Band – or the nurses & children at least to look at. – Gustavus Tuckerman, Hong Kong, 1859.¹

The office Tuckerman celebrated in his letter to his business partner at Calcutta belonged to the American Heard brothers, leading partners of the preeminent firm Augustine Heard & Company. The building still stands. Today skyscrapers obscure the house overlooking Hong Kong's one-time parade ground, but in 1859 it commanded the colonial port's skyline. Symbolic of the influence American elites bore in Hong Kong, the Heard house was then, and still is (although it has been renamed), one of Hong Kong's most recognizable buildings (Figure 1).² It was not, however, the only building the Heards built, renovated, or acquired while trading in the colony. At various stages of Hong Kong's development, godowns fronting the praya, tenements housing Chinese tenants, jetties on the harbor, and even one bluntly named "Heard Street" – still extant in Wan Chai – testified to the firm's imprint. In building this enterprise, the Heards employed a diverse range of people. American capital developed the lots, but Cantonese labor physically constructed the buildings upon them. Dozens of Chinese servants, American or British clerks, and Macanese accountants lived and worked in these residences and offices.³ The narrative of these properties and people

1 Gustavus Tuckerman to Whitney, Hong Kong, January 17, 1858, Mss:766 1847–1898 T896, Gustavus Tuckerman, Jr. Papers, Baker Library Special Collections, Harvard Business School (HBS). Tuckerman has misdated this and his subsequent two letters, but by the end of the month realized his error.

2 "Parade Ground and St John's Cathedral," Hong Kong, 1875, RH01–18, University of Bristol, Historical Photographs of China.

3 While "Portuguese" is the most common nomenclature in the archival material, Macanese is used throughout this chapter to refer to Luso-Asians, in line with current scholarship, to recognize the hybrid identity and intermediary role of this community.

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is a narrative of Hong Kong's development, told through the lens of American enterprise.

The process by which American elites “made” nineteenth century Hong Kong was, in many ways, an abstract one. American cultural preferences and social behaviors were imported to the colony, selectively adapted according to colonial mores, and finally folded into a syncretic colonial society.⁴ Yet, and perhaps obviously, there simultaneously unfolded a process of physical “making” as American capital and commercial aspirations encouraged the American elite to leave a tangible legacy of their ambitions upon the port. Such processes are often opaque in qualitative accounts of history, as discursive sources central to such narratives – letters, diaries, memoirs, and newspapers – depict the subjectivities through which individual authors positioned their accounts relative to social dynamics.⁵ Certain matters attract disproportionate scrutiny, while others are neglected as humdrum concerns. Much is said about the Heards’ magnificent property presiding over central Victoria, while little is known of the 12 other properties they contributed to the colony; much is known about the leading partners, while more than 100 employees residing in Hong Kong toiled away in anonymity.⁶

Addressing such narrative imbalance, this chapter combines Geographic Information System (GIS) mapping and social network analysis (SNA) to demonstrate how digital methods typically reserved for “big data” can improve micro-historical research and provide historians with new ways to approach the sub-

4 For Hong Kong's function as a “meeting place,” see: Elizabeth Sinn, “Introduction,” in *Meeting Place: Encounters Across Cultures in Hong Kong, 1841–1984*, ed. Elizabeth Sinn and Christopher Munn (Hong Kong: Hong Kong University Press, 2017), ix; see also: Mary Louise Pratt, “Introduction: Criticism in the Contact Zone,” in *Imperial Eyes: Travel Writing and Transculturation*, 2nd Edition (London: Routledge, 2008), 5–7; Elizabeth Sinn, “In-between Place: A New Paradigm for Hong Kong Studies,” in *Rethinking Hong Kong, 1841–1941*, ed. Elizabeth Sinn, Siu-lun Wong, and Wing-hoi Chan (Hong Kong: Hong Kong University Centre for Asian Studies, 2009), 294–295.

5 Mary Jo Maynes, Jennifer L. Pierce, and Barbara Laslett, “Introduction,” in *Telling Stories: The Use of Personal Narratives in the Social Sciences and History*, ed. Mary Jo Maynes, Jennifer L. Pierce, and Barbara Laslett (Ithaca: Cornell University Press, 2008), 2–3.

6 This approximation is an aggregate of data on foreign and Portuguese employees taken from Thomas M. Larkin, Mapping Sino-Foreign Networks & Mobility in China (2023), <https://data.bris.ac.uk/data/dataset/vdbur8omw21y262ylgaikiind> (hereafter MSFN) and from archival resources referenced throughout the chapter that give numbers of Chinese staff.

jects central to their studies.⁷ Focusing on the prominent American firm Augustine Heard & Co., I cataloged its leading partners' properties and its Hong Kong staff to emphasize the ways the firm shaped both Hong Kong's physical and social development. In undertaking a spatial and digital microhistory, I aim to provide a more comprehensive indicative profile of the "American firm" in Hong Kong than has been produced to date.

American merchants are by no means absent from the historiography of Sino-American contact, but most studies have considered core sets of actors (such as the Boston Concern) or activities (such as smuggling or Yangzi shipping) that, while granular in detail, often struggle to encapsulate the range of actors present or the breadth of their influence.⁸ In using quantitative methods to support the traditionally qualitative approach of microhistory, I set out to contextualize the firm within Hong Kong's urban development and profile the range of elite, semi-elite, and non-elite actors that comprised the American firm, thereby articulating the ways such firms were integral to the "making" of colonial space and society. I begin by considering some limitations and advantages of the digital approach as it applies to microhistorical practice. I then demonstrate the practical applications by considering the firm's spatial impact upon the colony and profiling the company's staff during its 20 years of activity. I argue that the insights wrought through digital methods offer new perspectives on how Hong Kong's American elite physically and socially "made" the colony through their relationship with space and place, and their role in facilitating the movement of people within and beyond the colony.

7 Pat Hudson and Mina Ishizu, *History by Numbers: An Introduction to Quantitative Approaches*, 2nd Edition (London: Bloomsbury, 2016), 33; see also: Matthew O. Jackson, *Social and Economic Networks* (Princeton: Princeton University Press, 2008), 54.

8 For American merchants and Sino-American networks, see: Jacques Downs, *The Golden Ghetto: The American Commercial Community at Canton and the Shaping of American China Policy, 1784–1844* (London: Associated University Press, 1997); Paul Van Dyke (ed), *Americans and Macao: Trade, Smuggling, and Diplomacy on the South China Coast* (Hong Kong: Hong Kong University Press, 2012); John Wong, *Global Trade in the Nineteenth Century: The House of Houqua and the Canton System* (Cambridge: Cambridge University Press, 2016); for American women within the community, see: Stacilee Ford, *Troubling American Women: Narratives of Gender and Nation in Hong Kong* (Hong Kong: Hong Kong University Press, 2011); see also: Eileen Scully, *Bargaining with the State from Afar: American Citizenship in Treaty Port China, 1844–1942* (New York: Columbia University Press, 2001).



Figure 1: Augustine Heard & Co.'s company house overlooking the parade ground, Hong Kong, 1870. Source: VH03-29, Bath Royal Literary and Scientific Institution, Historical Photographs of China, <https://www.hpcbristol.net>.

I A Spatial Microhistory

The questions posed in this chapter about the American elite's impact on Hong Kong build upon the approach outlined through Christian Henriot's and Cécile Armand's spatial framing of Shanghai's French community. Henriot and Armand advance a form of "quantitative micro-history," drawing upon demographic and geospatial data to address the "nature, status, and activities" of the French community as a group.⁹ Census data combined with spatial mapping of French settlement patterns provide the springboard from which they draw deeper conclusions about

⁹ Cécile Armand and Christian Henriot, "Paris in the Orient: a spatial micro-history of the French in Shanghai," *Urban History* 49 (2022): 171–172; For a further example of GIS approaches to Shanghai's development, see: Isabelle Durand and Christian Henriot, "The impact of war on Shanghai's industrial structure: A GIS-based analysis of Shanghai industrial surveys (1935–1940)," *Annals of GIS* 18, no. 1 (2012): 46.

the French lifestyle in Shanghai. Their approach provides them with an opportunity to engage with a wider French community that would be difficult to profile through rote qualitative histories drawn from elite records.

They note, however, the qualitative limitations of their approach as it depicts only the “bones” of the community.¹⁰ One potential solution can be found in the way Robert Bickers uses Shanghai Municipal Police data to support his microhistorical study of policeman Richard Maurice Tinkler in *Empire Made Me*.¹¹ Tinkler’s story anchors the study, while Bickers’s extensive data on the police force helps fill lacunae in Tinkler’s records with a more comprehensive profile of the “Shanghai Municipal Policeman” in general. Both approaches offer intriguing possibilities for a more nuanced microhistory as data strengthens claims made about particular communities or individuals. As Armand and Henriot demonstrate, increasingly powerful tools for digital analysis mean that more can be done with census records and directories to flesh out the contours of the communities studied, while the form of qualitative research Bickers undertakes is well suited to correcting the dearth of information in such data concerning the “actual social and economic relations” that bound such groups.¹²

Such microhistorical narratives become more nuanced still when the scope of analysis expands to incorporate varied types of spatial information. Recent work on “platial” GIS reframes places as “dynamic” entities produced through “social processes, individually experienced, and constituted by the triad of location, locale, and sense of place.”¹³ Space, in this sense, is defined according to social relationships as much as by physical surroundings. If the idea of “space” lends itself to an inherent measurable logic, its analysis is also subject to the ways people traverse space as they deal with the tangible, experiential, and *événementiel* immediacy of the specific “place” they inhabit.¹⁴ To this effect, Tim Cole and Alberto Giordano remind us that “writing spatial history does not necessarily involve either using, or making, maps,” but rather “working with spatial concepts to frame analysis.”¹⁵ Such framing likewise appears as the basis of Stuart Dunn’s understanding of “deep mapping,” which asserts that spatial narratives “must involve” contingent readings

10 Armand, Henriot, “Paris in the Orient,” 189.

11 Robert Bickers, *Empire Made Me: An Englishman Adrift in Shanghai* (London: Allen Lane, 2003).

12 Armand, Henriot, “Paris in the Orient,” 189.

13 Tim Cole, Alberto Giordano, and Maël Le Noc, “Spatial social networks for the humanities: A visualization and analytical model,” *Transactions in GIS* 0.0 (2022): 2; see also: Michael F. Goodchild, “Space, place and health,” *Annals of GIS* 21, no. 2 (2015): 97–100.

14 Edward Casey, *The Fate of Place: A Philosophical History* (Berkeley: University of California Press, 2013), 337–339.

15 Tim Cole and Alberto Giordano, “Digital Mapping,” in *Doing Spatial History*, ed. Riccardo Bajaj, Konrad Lawson, and Bernard Struck (London: Routledge, 2021), 274.

of “text, context, image and cartography . . . augmented by non-quantitative understandings and processes.”¹⁶

Dunn’s last point is especially relevant given Cole’s and Giordano’s GIS work supporting their “Geographies of the Holocaust” project. As with Bickers’s work with Tinkler, their study shows how data, when merged with qualitative archival research, provides robust ways to understand social patterns and mobility. Digital mapping, in this instance, provided Cole and Giordano a new lens through which to understand the quotidian activities of Budapest’s Jewish community as they traveled within and beyond the boundaries of their ghetto. This, in turn, allowed them to anchor their subjects both in space and time and thus advance a sophisticated account of how ghettoization shaped the lived experiences of Hungarian Jews.¹⁷ Following these leads, the examination of the Heards demonstrates how a variety of considerations – in their case social, cultural, and racial – shaped their spatial relationship with Hong Kong.

Inspired by these approaches, but cautious of the limitations of data-driven approaches to microhistorical research, I have set out to augment a discursive reading of the Heard archive through the combined use of SNA and GIS methods. While SNA has practical applications for microhistorical research, it provides a limited picture of the nodes (individuals) that comprised networks. As Matthew Jackson argues, certain relationships are distorted or concealed (Heard employee rosters almost never mention their Chinese employees), networks “change over time and overlap in various ways,” and much of what is reconstructed represents a “static and discreet view” of “inherently dynamic and volatile relationships.”¹⁸ Moreover, as David Bell notes in his discussion on global historical methods, broad-scale or network-driven approaches to the past often struggle to do justice to history’s manifold actors.¹⁹

Jackson and Bell are, of course, correct. Networks are dynamic, shrinking, and growing across time and space. Representing them in a database requires reducing socially and culturally complex communities and unique individuals into consumable data that privileges a limited set of criteria; in this case, relating to the Heards’ Anglo-American male employees in Hong Kong. On its own, this data fails to describe the lives and relationships of those recorded, or their impact on society. The limitations of a GIS approach to the Heards’ Hong Kong properties are similar. Reconstructing their physical imprint upon the colony is straightforward, but the significance of what they built, where, and when is less obvious. Combining both approaches, however,

¹⁶ Stuart Dunn, *A History of Place in the Digital Age* (Abingdon: Routledge, 2019), 7.

¹⁷ Cole and Giordano, “Digital Mapping,” 281.

¹⁸ Jackson, *Social and Economic Networks*: 54.

¹⁹ David Bell, “This Is What Happens When Historians Overuse the Idea of the Network,” *New Republic* (2013): 10.

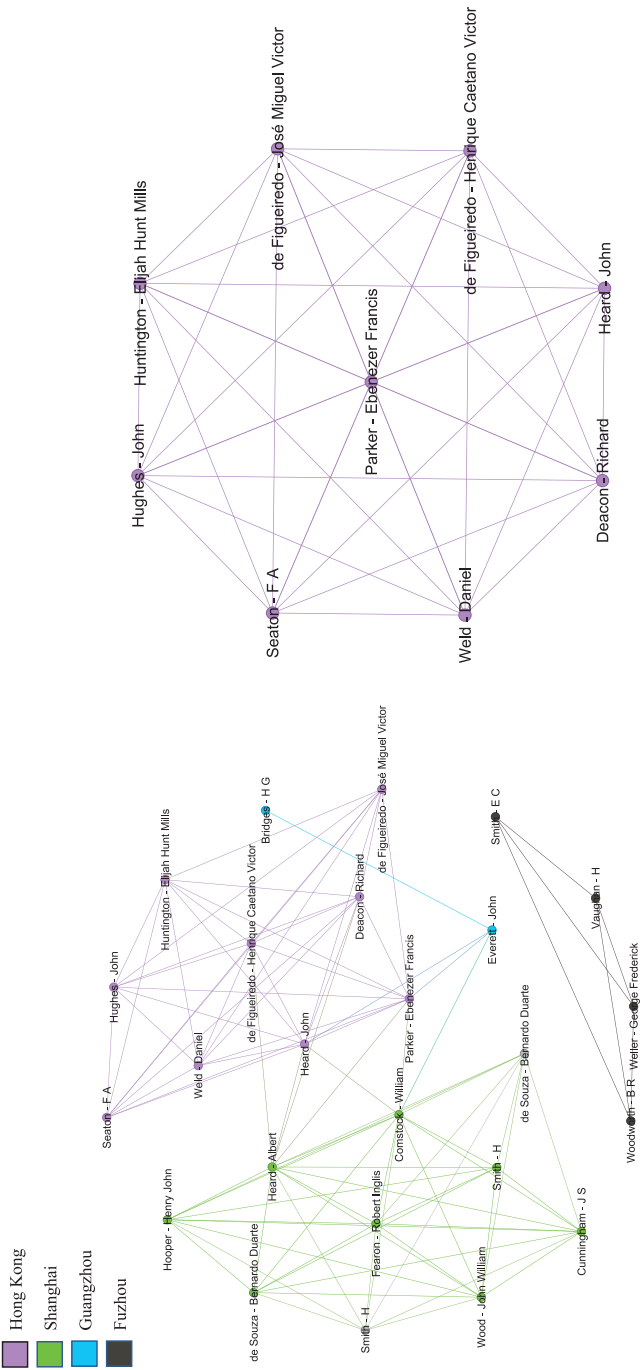
provides the infrastructure of a “deep map” of the American firm’s Hong Kong branch that augments a qualitative reading of the Heards’ impact upon the colony.

I have thus adopted a hybrid quantitative and qualitative method where data-driven research forms the backbone of a community profile, which I have then filled in through qualitative analysis of the Heards’ social and physical impact upon nineteenth century Hong Kong. Data on the Heards’ American, British, European, and Macanese employees, pulled from letters, contracts, chronicles, and directories, maps the company’s growth and decline between 1856, when they established themselves in Hong Kong, and 1876, when the company went bankrupt. Basic attributes for these individuals include their full name (where discernible), their gender, nationality, position within the firm, dates active, and the sources of the information. The database has further been structured to account for change over time to give an impression of the community’s organic nature – every change in location, employer, or role, for example, merits a new row linked to the relevant unique individual through relational databasing. I have geotagged each entry, enabling annual samples of the Hong Kong cohort to be extracted from the overarching company roster.

The graphs produced from this exercise are snapshots of the Mapping Sino-Foreign Networks (MSFN) project that demonstrate how intercompany networks grew and diffused across the China coast over time (Figures 2 and 3).²⁰ Each node represents an employee of the firm Augustine Heard & Company. A script was written to generate an edge table that reflected the chronological and spatial progression of employee networks. An edge is created between two employees on the condition that these two employees worked for the same company at the same local branch at the same time. Each subsequent year that an individual appears in the graph, they inherit the edges from the previous year. If “Person A” and “Person B” begin their tenures together one year, but then move to separate ports the next, they retain their network connection to each other. This continuity is represented in the two graphs, where the China cohort that is initially localized in 1859 has grown into a more entangled and nebulous company network as employees have transferred to new branches. The core corpus of material used is limited in the information provided, often offering little more than a name to work with. I have thus also relied upon digitized indexes such as the Carl Smith card collection to confirm basic details, which have then been cross-referenced with a targeted selection of primary and secondary sources.²¹ In this manner, MSFN reconstructs the lifespan of Augustine Heard & Co.’s China coast network.

²⁰ Larkin, MSFN.

²¹ See Larkin, MSFN, <https://doi.org/10.5523/bris.vdbur8omw21y262ylgaikiind>. All source material is catalogued in the master database in the interests of promoting replicability.



1859 Heard Employees, All of East Asia (Left) & Hong Kong Only (Right)

Figures 2 and 3: Growth of Augustine Heard & Co. staff, 1859–1875 (left: East Asia; right: Hong Kong only). Source: Larkin, MSFN, 2023.

While structuring the data in this manner provides some sense of how the firm's employees shaped Hong Kong society and were linked to a wider network of staff throughout East Asia, its real value is as a reference point to support the analysis of discursive letters and diaries. These subjective materials are crucial resources for their description of Hong Kong society but represent an incomplete archive. The authors' interests and relationships with their readers mediate content. As such their accounts are circumscribed in the types of relationships they depict. The Heard brothers' letters, for instance, restrict their content to events, descriptions, and gossip concerning the upper strata of elite society. Yet, as the final section will demonstrate, when approached with the company roster to hand, oblique references in such sources take on a new quality, helping complete the profile of the firm's employees and the specific ways they engaged with colonial society.

The database and discursive materials also highlight, through glaring omission, the racial divisions inherent in company hierarchies and emphasize the need for alternative methods of uncovering the wider staff profile of the American China firm. Chinese laborers, from compradors down to servants, are obscured in the colonial record. A microhistorical approach to the firm's archive, however, offers solutions that a quantitative method elides. Through a close reading of a range of different materials, from ledgers to inventories, contracts, and receipts, the numbers and, in rare instances, names of the Chinese staff that supported the firm emerge. This data, while nowhere near as complete as the firm's roster of foreign employees, still gives some sense of Augustine Heard & Co.'s social significance within Hong Kong.

I have retrieved company property in a similar manner. The Heards failed to keep a systematic record of the Hong Kong properties the partners built or acquired. They did, however, catalog utility bills, odd rental agreements, and contractor receipts that provide a sense of their physical impression upon Hong Kong. This piecemeal evidence has produced a database cataloging address, date acquired (or first recorded in the archive), property function, and longitude and latitude. Interest in these properties is twofold. When laid over maps of Hong Kong reconstructed from nineteenth century source maps, they show the tangible ways the firm "made" British colonial society; when considered in relation to the ways the brothers describe the port, they reveal a series of racial and social anxieties that shaped American understandings of Hong-Kong-as a place. They have accordingly been approached through the same hybrid method as the firm's employee roster, whereby GIS methods have helped to situate the spatial microhistorical reading of the firm's property and its significance to the American colonial experience.

There are, of course, limitations to a microhistorical lens – context being the most glaring. By looking at the Heards' properties in connection with what is written about Hong Kong's social geography, it is possible to extrapolate a sense of what these locales "meant" in colonial society. It is not possible, however, to nuance this

discussion without considering property data on all, or at least as many as possible, of those who lived in Victoria in the relevant period. Such data does not exist to date in an organized format, and while it is beyond this chapter's scope to handle it, my intention is that the digital infrastructure developed for this project signposts a new direction for thinking about the colony's socio-spatial development. I undertake, rather, a GIS-augmented analysis that articulates the ways American firms and their staff interacted with and shaped place and space in nineteenth century Hong Kong.

II Building Hong Kong

The Heards acquired their first Hong Kong property in 1856 when Augustine Heard Jr. contracted Tam Achoy (Tan Yacai 譚亞才) – himself an integral figure in the colony's physical construction – to build the company an equal-part dwelling and office upon inland lot 94 on central Victoria's western edge.²² Over the next 13 years, the Heards would build, rent, or occupy another 12 properties throughout the colony. A variety of buildings ranging from dwellings to godowns, wharfs, coal sheds, tenements, industrial yards, and stables comprised their property portfolio. Each property's function and location reflected the role the firm played in shaping the port's socio-cultural and commercial development.

Except for one property located in Pokfulam on the island's western shore, the Heards' various properties were spread across the British colonial settlement of Victoria (Figure 4).²³ Located in the countryside, the Pokfulam villa occupied a farm lot, but the remaining 12 properties were divided amongst five inland lots and seven marine lots that fronted (or by 1869 had once fronted) Hong Kong's ever-changing waterfront.²⁴ Four of the five inland lots functioned as dwellings, while the outstanding property – I.L. 591, located along the trail to Pokfulam – functioned as a coach house and stables. The marine lots were, by contrast, made up of two wharfs, four godowns, a coal shed, and a timber and boat yard.

22 A. Heard & Co., contract with Tam Achoy, Hong Kong, 1856, Heard II, Case 27, HBS; For more on Tam, see: John Carroll, *A Concise History of Hong Kong* (New York: Rowman & Littlefield Publishers, Inc., 2007), 17; Jung Fang Tsai, *Hong Kong in Chinese History: Community and Social Unrest in the British Colony, 1842–1913* (New York: Columbia University Press, 1993), 44.

23 Due to forthcoming land reclamations, this map does not include marine lot 56, located just north of marine lot 4.

24 Historic lot numbers based upon: “Plan of the City of Victoria, 1889,” <https://www.hkmaps.hk>, [accessed December 20, 2022]. With the acquisition of the New Territories, farm lots were renumbered, and in the absence of a lot survey covering Pokfulam, the location of the Heards' villa there is an estimate.



Figure 4: Augustine Heard & Co. property map, Hong Kong, 1866. Based upon source map: “Plan of Victoria, Hong Kong, 1866,” in *The Treaty Ports of China and Japan: A Complete Guide to the Open Ports of Those Countries, Together with Peking, Yedo, Hong Kong and Macao*, ed. William Fred Meyers, N. B. Denny, and Charles King (Hong Kong: Shortrede and Co., 1867), 11.

The location of each of these lots is just as important to our understanding of the colony's development as their functions are. The Heards' various dwellings reflected colonial socio-cultural hierarchies, and racial and class anxieties, which are more clearly understood when "contexts of space and place" are taken into account.²⁵ Their first property (I.L. 94) on Victoria's western edge, hemmed by Caine Road, Aberdeen Street, Staunton, and a public footpath, bordered Taipingshan. Its architecture and the ways the brothers referred to their time there indicated the racial tensions permeating Hong Kong society during the Second Opium War. The house's design was a direct product of the vulnerability American merchants felt towards a perceived violent Chinese "other."²⁶ The Heards essentially fortified the home, with American partners occupying the upper levels and Chinese staff inhabiting the lower. Should foreign fears be realized and should the Chinese staff rise up against the white colonizers, these two domestic worlds could be severed via trap doors, and the upper levels made defensible.²⁷

Neighborhood mattered as well (Figure 5). While strict segregation was impossible to maintain in Hong Kong, proximity to the predominantly Chinese community, many of whom since 1843 had been induced to settle around Taipingshan, concerned Augustine Heard & Co.'s white American partners.²⁸ The Heards' anxieties about their first Hong Kong home reflect Christopher Munn's argument that the 1850s and 1860s influx of Chinese into the colony "increased friction between communities."²⁹ Wartime measures such as Ordinance No. 2, passed on 16 December 1856, which imposed a strict curfew upon the Chinese community, helped alleviate foreign concerns, but the location of the Heards' house still had a deleterious effect upon their social lives. Friends hesitated to venture beyond the perceived safety of Victoria's well-lit streets to visit the Heards in their new home, and those that did went armed – a largely unnecessary measure justified only by racially motivated rumors circulating of Chinese treachery.³⁰

25 Michael Ng, T. Edwin Chow, David W.S. Wong, "Geographical Dimension of Colonial Justice: Using GIS in Research on Law and History," *Law and History Review* 34, no. 4 (2016): 1030.

26 Thomas M. Larkin, "'A Life of Suspicion and Distrust': Sino-American Relations, Racialized Anxieties, and Anglo Panic in nineteenth century Hong Kong," *Pacific Historical Review* 22, no. 2 (2023): 141.

27 Augustine Heard Jr., *Old China and New*, 1894, GQ-2-2, HBS, 28.

28 Xu yuebiao 徐曰彪, "Xianggang de shehui jiegou 香港的社會結構, [Hong Kong's Social Composition]" in *Shijiu Shiji de Xianggang 十九世紀的香港 [Nineteenth-Century Hong Kong]*, ed. Yu shengwu 余繩武, Liu cunkuan 劉存寬, Zhu Bian 主編 (Beijing: Zhonghua Shuju, 1993), 353.

29 Christopher Munn, "Hong Kong, 1841–1870: All the Servants in Prison and Nobody to Take Care of the House," in *Masters, Servants, and Magistrates in Britain and the Empire, 1562–1955*, ed. Douglas Hay and Paul Craven (Chapel Hill: University of North Carolina Press, 2004), 391.

30 A. Heard Jr., *Old China and New*, 28; see also: Kate Lowe and Eugene McLaughlin, "'Caution! The Bread is Poisoned': The Hong Kong Mass Poisoning of January 1857," *Journal of Imperial and Commonwealth History* 43, no. 2 (2015): 194.

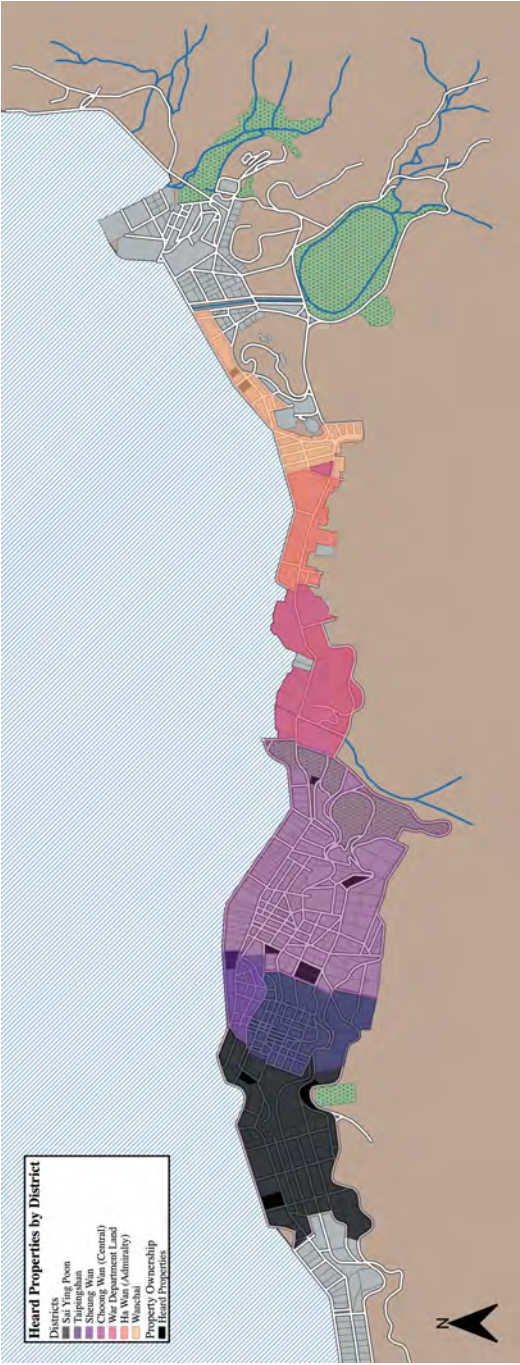


Figure 5: Neighborhood map of Hong Kong, 1866. Based upon source map: Plan of the City of Victoria, 1889.

The Heards' tenements (I.L. 60), built northeast of their first house along Aberdeen Street, similarly indicated the foreign impulse towards segregation. The property, likely intended for Chinese tenants, again bordered Taipingshan, and the Heards placed strict stipulations on the renting of such lots. Their location and function underscored a segregation that was – in other contexts – supported loudly in letters home.³¹ When they sold part of inland lot 94 to their comprador Mok Sze Yeung (Mo Shiyang 莫仕揚) in 1865 to redevelop the property into Chinese housing, they made Mok agree to the stipulation that the Chinese tenements would not extend more than two-hundred feet up the hill from Staunton St. and that such properties would not “become a nuisance” to the Heards' dwelling house.³² They did. Albert Heard complained to his wife Mary Livingston in 1874 that proximity to Chinese neighbors was a great indignity. He detested their “noises and smells and annoyances,” and despaired that all the land fronting the next house over had been given over to Chinese residences in what was “perfect pandemonium.”³³

Albert Heard's rhetoric was echoed in foreigners' accounts of the locales orbiting Victoria's white elite center. An 1873 satirical poem about Wan Chai described the “stinking Praya” running “near Chinese houses and low-lying shore.”³⁴ The *China Mail* predicted the district's reputation in 1862, commenters noting that it would grow into a “tempting locality” for a lower-class of white transient.³⁵ American prostitutes, for example, established themselves in and around Wan Chai's vicinity, possessing an “ambiguous status of privileged pariah” as their presence and proximity to Chinese communities challenged the desired image of white civility.³⁶ Henry Lethbridge argues that Victoria's settled outskirts, east into Wan Chai or west to Taipingshan, became “most frequented, especially at night,” by a lower-class of Europeans.³⁷ Elite desires for segregation were thus twofold: the wish to be removed from the port's Chinese inhabitants, and the wish to distance themselves from the crowds of white beachcombers, sailors, soldiers, prostitutes, and indigents that also navigated such locales. Such desires would be ultimately reified through the development of The Peak, where 1902, 1904, and 1918 ordinances

³¹ Xu, “Xianggang de shehui jigou,” 353; Albert F. Heard to his parents, Hong Kong, February 12, 1857, HL-3, HBS.

³² Land Sale Agreement, Hong Kong, 1865, Case 27, HBS.

³³ Albert Heard to Mary Heard, Hong Kong, July 17, 1874, HL-5, HBS.

³⁴ “Poem about Wanchi [sic],” *China Punch*, Hong Kong, April 24, 1873, 11.

³⁵ “With regard to the Praya,” *China Mail*, Hong Kong, July 17, 1862, 2.

³⁶ Eileen P. Scully, “Prostitution as Privilege: The ‘American Girl’ of Treaty-Port Shanghai, 1860–1937,” *International History Review*, 20.4 (1998): 857–856; Ford, *Troubling American Women*, 53.

³⁷ Henry J. Lethbridge, “Condition of the European Working Class in Nineteenth Century Hong Kong,” *Journal of the Hong Kong Branch of the Royal Asiatic Society* 15 (1975): 97.

would enforce segregation by law, as the foreign elite built an urban landscape that adhered to racist and classist social preferences.³⁸

While the Heards maintained their first house and Chinese-inhabited tenements on the border of Taipingshan, they personally relocated to their new company property in 1859. This was the house Gustavus Tuckerman had stayed in during his visit to the colony. Situated above the parade ground and next to St. John's Cathedral, the house on inland lot 82 occupied a central position within Victoria, cementing, by extension, its occupants' elite status. Elijah Anderson's understanding of Black and white space helps explain the socio-racial implications of this move. The elite white community perceived "Black space" such as Chinese-inhabited Taipingshan as destitute, fearsome, or ghettoized, while "white space," such as Victoria proper, was informally "off-limits" to non-white interlopers. But if white people avoided "Black space," groups such as Chinese servants were "required to navigate white space as a condition of their existence."³⁹ The architecture of the Heards' new property accordingly reified the inversion of the power dynamic from their house at inland lot 94 on the border of "Black space." It was still filled with a mixture of foreign clerks, partners, and Chinese staff, but no longer marginal to foreign society. The anxieties surrounding the Chinese community were less pronounced.

From their new and prestigious home, the Heards participated actively in the social program of the port's white elite. They were further able to use the property to entrench their social and political capital by entertaining visiting dignitaries (the Russian Grand Duke Alexei Alexandrovich and his party and the American Minister John Ward among them), hosting balls and dinners, and participating in the colonial mores of visiting and being visited.⁴⁰ The house's location represented the importance of the firm within the port's socio-political and commercial circuits. It seems, however, that over time the firm's partners occupied various dwellings rather than living in one central home. Still, an additional dwelling rented from W. H. Alexander and George Lyall at inland lot 141 on Caine Road – while less ostentatious than the company house – was within an acceptable proximity to the colony's

³⁸ Carroll, *A Concise History of Hong*, 74; for more on the segregation of Victoria Peak, see: John Carroll, *Edge of Empires: Chinese Elites and British Colonials in Hong Kong* (Cambridge, MA: Harvard University Press, 2005), 90. See also: Irene Cheng, *Clara Ho Tung: A Hong Kong Lady, Her Family and Her Times* (Hong Kong: Hong Kong University Press, 1976), and Henry J. Lethbridge, *Hong Kong: Stability and Change: A Collection of Essays* (Hong Kong: Oxford University Press, 1978).

³⁹ Elijah Anderson, *Black in White Space: The Enduring Impact of Color in Everyday Life* (Chicago: University of Chicago Press, 2022), 13.

⁴⁰ Albert F. Heard to Mary Heard, Hong Kong, June 25, 1874, HL-5, HBS; George Heard to Augustin heard Jr, Hong Kong, February 25, 1873, JL-2, HBS; John Heard, *An Account of His Life and the History of Augustine Heard & Co.*, 1891, FP-4, HBS, 124.

elite (the Forbeses' Rose Hill was around the corner) and afforded many of the same social opportunities.⁴¹

The final two domestic properties uncovered were less central but no less indicative of the firm's status. Like their elite peers, the Heards maintained a villa in Pokfulam, which would have provided a respite from the clamor of Victoria proper.⁴² The villa's exact location is unclear, but the surrounding villas attested to the fashion in which foreigners retreated to the island's east coast. Douglas Lapraik, for instance, maintained a sprawling mansion – or castle, rather – and the neighborhood was a popular destination for picnics and retreats.⁴³ Although “rapidly ceasing to be the sequestered place it once was,” it remained in 1862, at least, a lengthy trek from Victoria, inspiring leisure-seekers to ride, drive a buggy, or impose upon the strength of their Chinese sedan-chair bearers.⁴⁴ The Heards accordingly positioned their stables and coach house along the trail out.

Occupying inland lot 591 on Bonham Road, the stables were themselves a testament to the status of the firm's partners.⁴⁵ By James Murray Forbes's accounting, keeping a horse and buggy was well beyond the means of the average clerk, which he reckoned had been \$150/year plus his keep when he began.⁴⁶ The cost of vet bills, reshoeing, and lodging alone could run well over \$25/month.⁴⁷ Indeed, Albert Heard had outfitted his wife at great cost, ordering clothes, bridles, and a saddle from the US for her use, and continued to pay the local vet even during the firm's rapid retrenchment. The effort was appreciated. Livingston was an avid rider, as were many elite women in the colony, taking a habitual evening trot down Queen's Road to Happy Valley and a turn around the racecourse.⁴⁸ The stables and coach house reflected the Heards' wealth and popular forms of elite leisure activity that shaped Hong Kong's social landscape.

But the Heards were first and foremost businessmen, a fact of which seven of their properties and one street reminded the public. For much of the nineteenth century, these seven properties, comprising of stone godowns, wooden wharfs,

41 James Murray Forbes to Mother, Hong Kong, April 9, 1870, Ms. N-49, Massachusetts Historical Society (MHS); Albert F. Heard to Mary Heard, Hong Kong, June 13, 1874, HL-5, HBS.

42 15 Pokfulam, Police and Lighting, Hong Kong, 1866, Heard II, Case 27, HBS.

43 Stuart Braga, “Making Impressions: The Adaptation of a Portuguese Family to Hong Kong, 1750–1900” (PhD Diss., The Australian National University, 2012), 180; *London and China Telegraph*, February 18, 1860, 124.

44 “Pic-Nics,” *China Mail*, Hong Kong, 12 June 1862, p. 2.

45 “Bill for Victoria, Hong Kong,” Hong Kong, c.1860s, Heard II, Case 27, HBS.

46 James Murray Forbes, “Dogs and Horses,” 1921, Ms. N-49.67, MHS, 15.

47 Bill from T. E. Hawkins, Hong Kong, 1873, Case 4, HBS.

48 Albert F. Heard to Henry Livingston, Hong Kong, November 24, 1874, HL-5, HBS; Albert F. Heard to Henry Livingston, Hong Kong, May 15, 1873, HL-49, HBS.

a coal shed, and a boat yard, occupied Hong Kong's waterfront. Excepting two wooden wharfs, marine lots 4 and 56, located on Praya Central, the remaining properties were peripheral to the port's white residential neighborhoods. To the west, a coal shed (M.L. 69a) fronted the water in Sai Ying Pun, and further west still, two godowns (M.L. 97 & 98).⁴⁹ To the east, upon reclaimed land in Wanchai, the firm built several godowns upon marine lot 111 on Praya East. Running beside them was Heard Street, no doubt named for the brothers, and two lots further, a godown and a timber and boat yard sat upon marine lot 120.⁵⁰

To judge from a variety of plans for such buildings, these godowns were not elaborate structures (Figure 6). But in occupying Victoria's growing waterfront they served two socio-commercial ends. First, they signified Augustine Heard & Co.'s commercial success to Hong Kong's wider foreign and Chinese communities. The types of properties evident displayed business interests that had helped the firm grow throughout East Asia. Godowns held commodities to be traded throughout the Nanyang region, and between China, Japan, and the US. Coal sheds stored fuel for a firm which had staked its claim on steam innovation along the China coast and up the Yangzi.⁵¹ Wharfs launched steamships that operated as part of the Hong Kong & Macao Steamship Company, carrying passengers and freight along the Pearl River Delta.⁵² Each provided visible proof of American investment in Hong Kong and in the China trade more generally.

Second, the godowns visually entrenched the triumphant narrative of the colony's success. Throughout the century's latter half, travelers to Hong Kong would comment upon the arresting and unexpected demonstration of – supposedly foreign – industry. Observing the changes to Victoria between 1843 and 1845, Scottish botanist Robert Fortune noted the presence of people from all countries had led to rapid development, and “a beautiful road, called the Queen's Road, had been formed along the shore,” lined with “excellent houses, and many very good shops.”⁵³ Ten years later, the American Benjamin Ball outlined the waterfront

49 Bill for Police and Lighting, Hong Kong, 1866, Heard II, Case 27, HBS; Bill for Police and Lighting, Hong Kong, 1867, Heard II, Case 27, HBS.

50 44–46 Praya East, Wanchai Road, Lighting Bill, Hong Kong, 1866, Heard II, Case 27, HBS; Property Valuation to Messrs A. Heard & Co., 1868, Heard II, Case 27, HBS.

51 Kwang-ching Liu, “Financing a Steam Navigation Company in China, 1861–1862,” *Business History Review* 49, no. 2 (1954): 156; Stephen C. Lockwood, *Augustine Heard & Company, 1858–1862: American Merchants in China* (Cambridge, MA: Harvard East Asian Monographs, 1971), 28–29.

52 Robert Bickers, *China Bound: John Swire & Sons and its World, 1816–1980* (London: Bloomsbury, 2020), 85.

53 Robert Fortune, *Three Years' Wanderings in the Northern Provinces of China, Including a Visit to the Tea, Silk, and Cotton Countries: With an Account of the Agriculture and Horticulture of the Chinese, New Plants, etc.* (London: John Murray, 1847), 3, 17.

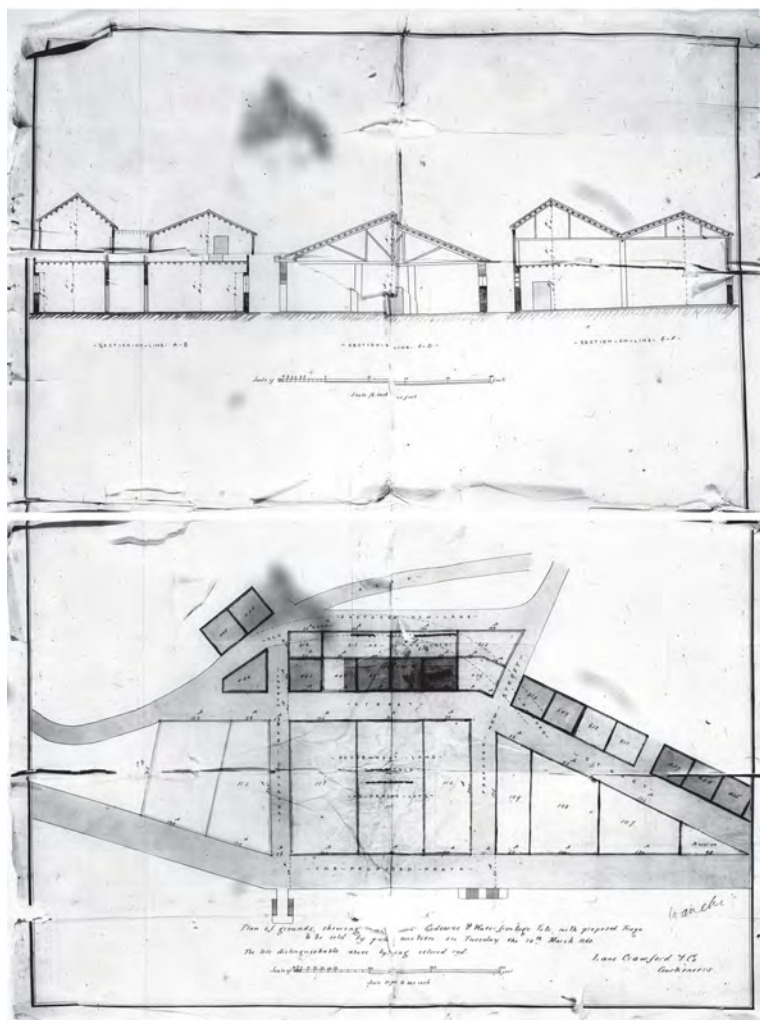


Figure 6: Augustine Heard & Co. plans for stone godowns, Hong Kong, undated, Case 30, HBS.

from west to east, confirming many social and racial prejudices in the process. His account started with “the Chinese part of the city” – a “mass of low buildings, shabby and unpainted” excepting “a few blocks of European-built houses.” By contrast, the central portion of Victoria contained large foreign homes and “blocks of European buildings, rising one above another.” Past the Parade Ground and into Wanchai, Ball celebrated symbols of colonial governance and foreign

enterprise.⁵⁴ Those arriving by ship encountered a “terraced” city “rising precipitously from the waterside,” the lights over the harbor “extremely pretty” – an idealized vista encapsulated, for example, by Denis Hazell’s 1925 cover photograph for the brochure “Picturesque Hong Kong” (Figure 7).⁵⁵ Pu-yin Ho has described how old postcards from the period showed an “elegant European city” with grand architecture “adorning the government buildings and foreign businesses.”⁵⁶ Such development over the period of 30 years, and the attendant commentaries of travelers, lent the entrepôt and the colonial enterprise legitimacy.

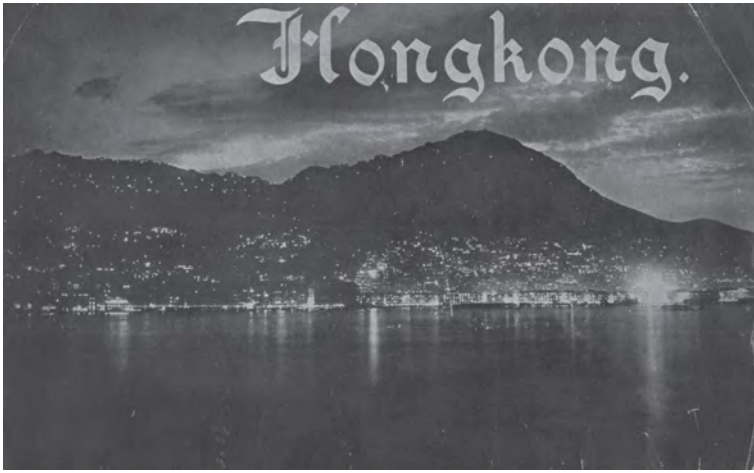


Figure 7: Denis H. Hazell, “Night view from Victoria Harbour towards Central, Hong Kong,” c.1925. Source: BK09-01, Images from Books, Historical Photographs of China, <https://www.hpcbristol.net>.

Indeed, as Ho has argued, such an “infrastructure of Western construction” enabled the government to demonstrate its governing power and tell “a story of the development of a modern Western city structure in a Chinese community.”⁵⁷ But if Ho emphasized government planning in this narrative, it is also important to recognize the central role foreign capital held by private individuals played. Admittedly

⁵⁴ Benjamin Ball, *Rambles in Eastern Asia, Including China and Manila: During Several Years Residence* (Boston: James French & Company, 1855), 89–91.

⁵⁵ Martha Green, December 1863, Hong Kong, Martha Green Journal, 1852–1869, Ms. N-49.30, MHS.

⁵⁶ Pu-yin Ho, *Making Hong Kong: A History of its Urban Development* (Cheltenham: Edward Elgar Publishing Ltd., 2018), 65.

⁵⁷ Ho, *Making Hong Kong*, 67

on a lesser scale than the works of the British firms Jardine Matheson & Co. with their compound dominating East Point, or Butterfield & Swire's nestled behind North Point in Quarry Bay, the Heard properties reified American investment in the physical making of the port. By extension the ways the firm utilized space and its partners thought about place reflected American participation in the “making” of colonial society.

III The Company Roster

While the Heards built Hong Kong through their investment and construction of property, they also developed colonial society through the migratory, employment, and networking opportunities that their business secured for its various staff. Augustine Heard & Co.'s Hong Kong branch shaped society through the networking it facilitated across class and racial boundaries. The firm's partners were at the apex of this fabricated hierarchy, overseeing the business and navigating the port's elite socio-political spheres. But there were also American and Anglo-European clerks and agents, Macanese accountants and shroffs (money changers), socially and financially mobile Chinese compradors, and an army of anonymized Chinese staff. Each of these groups shaped nineteenth century Hong Kong's syncretic culture and capitalized on the firm to establish themselves both in the colony and in the lives that they hoped to lead after their tenures had ended.

From its 1840 founding until Augustine Heard & Co.'s bankruptcy in 1875 and Heard & Co.'s subsequent abandonment the following year, the Heard enterprise in Hong Kong provided employment for approximately 62 foreign and many more Chinese staff. The greatest proportion of those employed from abroad came, naturally, from the US. Nearly half of all named employees of the firm in this period were Americans brought over by kinship networks (Figure 8). The elite amongst these migrants were predominantly New Englanders who used tight-knit kinship and social networks to expedite their careers in China.

Each of Augustine Heard & Co.'s leading partners in Hong Kong had connections to elite Boston society, which eased their entry into the firm; a carry-over from the pre-Opium War days at Canton when kinship had played an important role in bringing Americans to China. An indicative analysis reconstructed from Jacques Downs's attempt to trace US family networks to China demonstrates the dense web of familial interconnections that had formed between the partners of

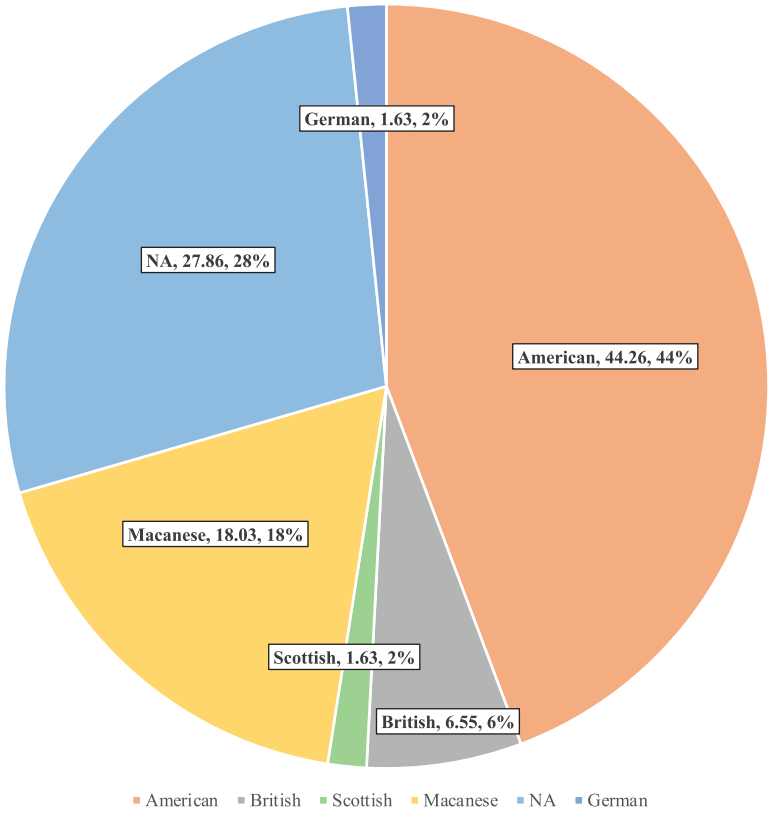


Figure 8: Nationality of Augustine Heard & Co.'s Hong Kong named employees (holistic).
Source: Larkin, MSFN, 2022.

the leading American firms at Canton (Figure 9). The graph, generated in Gephi, visualizes data compiled from appendices four and five of Downs's *The Golden Ghetto*, the former providing a list of names (this graph's nodes), while the latter describes kinship ties, either by birth or through marriage, which are represented in the graph by edges. A node's size reflects its degree (the number of connections to others in the network), while Gephi's modularity measure has identified basic community structures which are represented by the colors. This measure reinforces Downs's descriptions in appendix five, reflecting those kinship subcommunities that were especially tightknit through birth or marriage, and, accordingly, in business.

The Heard brothers themselves each headed Augustine Heard & Co. in succession from the Hong Kong branch as the China coast's American community rapidly grew beyond the tight-knit one that Downs described. Augustine Heard Jr. established the company there in 1856, and John Heard took over for him two years later.⁵⁸ In 1859, Albert Heard was made a partner, and the three brothers rotated through the colony as needed.⁵⁹ The youngest brother, George Heard, was listed as a partner in the colony starting in 1862.⁶⁰ Founding partner Joseph Dixwell of New York spent brief time in Hong Kong when not heading the firm's Shanghai branch.⁶¹ Bostonians Ebenezer Francis Parker and Charles Edward Parker both served as partners in the firm, as would George Frederick Weller of Massachusetts. American Edward Gilchrist Low, with his strong family ties to the old China trade, was among the last partners to sign for Heard & Co. in 1876.

Besides overseeing the company, these individuals became part of Hong Kong's white elite social circuit. Most partners in the firm joined the Hong Kong Club – the colony's peak institution for “any gentleman received in good society in China” – and George Heard even served on its committee.⁶² George Heard was a member of both the Victoria Regatta Club and the General Chamber of Commerce, while Albert Heard was a Junior Warden of the Freemasons. The Heards not only played a pivotal role in the business world in the region, but they also performed consular roles for other countries.⁶³ They used their race, class, language, and Anglophilic proclivities to navigate a predominantly British upper class and infuse it with the culture and capital of the US. In performing the mores of colonial society, they reified the hierarchical divisions that segregated the colony, in theory, along racial and class lines.

Below them came the white foreign clerks that staffed the firm – a seemingly ubiquitous fixture of the port's middle class. Here, the company roster was less overtly American. The firm employed, for example, a consistent but minor cohort of British staff throughout the 1860s and 1870s, comprising Richard Deacon, George Dixwell Fearon, Henry Cleland Heywood, and Francis Somerville Head, as well as the Scotsman John William Wood. There was a German, Edward Reimers of

58 A. Heard Jr, *Old China and New*, 25–28; J. Heard, *An Account of His Life*, 115.

59 Augustine Heard & Co. Partnership Agreement, Hong Kong, 1859, EA-1-2, HBS.

60 Augustine Heard & Co. Partnership Agreement, Hong Kong, 1862, EA-1-2, HBS.

61 Larkin, MSNF.

62 Wai-kwan Chan, *The Making Hong Kong Society: Three Studies of Class Formation in Early Hong Kong* (Oxford: Clarendon Press, 1991), 35; see also: Vaudine England, *Kindred Spirits: A History of the Hong Kong Club* (Hong Kong: Hong Kong Club, 2016), 42.

63 “Annual Regatta,” *China Mail*, Hong Kong, November 3, 1865, 3; “Victoria Regatta, 1873,” *Hong Kong Daily Press*, Hong Kong, December 6, 1873, 1; *The Chronicle & Directory for China, Japan, The Philippines & Hong Kong, 1874* (Hong Kong: The Daily Press Office, 1874), 133–135.

Hamburg, on the roster as well for about four years from 1866 to 1870. Another 15 staff from the period were from the US, while a further 16 came from an undiscernible background.

These clerks occupied a tenuous position in the social hierarchy of the white community.⁶⁴ As members of a leading firm and aspirants to social status and wealth, these men were often satirized for inflating themselves above their station.⁶⁵ Clerks acting as Nabobs – a term adapted to refer to merchants of sufficient wealth and status – expended great sums to adorn and comport themselves according to the colonial elite.⁶⁶ Satire about such habits carried a cautionary note, however, predicated upon real concerns about white precarity.⁶⁷ One 1862 editorial warned “young clerks. . . who really cannot afford to lose” against placing bets in the horse races.⁶⁸ Expensive living, in general, was identified as the problem in another 1862 *China Mail* article, and while the “fortunate gentlemen” who were partners in “The Houses” were alright, the “pitiable” clerk “inuring himself to habits of luxury” risked spending his later years “in frugality and toil.”⁶⁹ Such was the cost, however, of participating in colonial society, as a respondent wrote, before expressing puzzlement that “one-half” of the Macanese could afford to live in Hong Kong.⁷⁰

Indeed, this latter comment raises a misconception about foreign commerce that a holistic view of the company’s named staff perpetuated. To take the group in its entirety, Americans comprised at least 45% of the 62 named employees between 1848 and 1876 – the majority being clerks. Macanese clerks, by contrast, represented nearly 18%. Annual samples, however, show that year-on-year from 1867 to 1876, Macanese employees actually represented the largest national group amongst named employees, and in the years prior had comprised at least one-fifth of the staff present in Hong Kong (Figure 10).

64 Xu, “Xianggang de shehui jigou,” 367.

65 “In addressing the paper,” *China Mail*, Hong Kong, June 6, 1861, 2.

66 Bickers, *Empire Made Me*, 183 refers to the Shanghai policeman Maurice Tinkler spending “to impress”; see also: Lethbridge, “Condition of the European Working Class,” 90.

67 See: Eileen Scully, “Taking the Low Road to Sino-American Relations: ‘Open Door’ Expansionists and the Two China Markets,” *Journal of American History* 82, no.1 (1995).

68 “Horse Racing in Hong Kong,” *China Mail*, Hong Kong, January 23, 1862, 2.

69 “There is a giant in Hong Kong,” *China Mail*, Hong Kong, September 18, 1862, 2; see also, Helen Beal to Elizabeth Beal, Shanghai, May 25, 1851, Ms. N-1818, MHS.

70 “To the Editor of ‘China Mail,’” *China Mail*, Hong Kong, September 25, 1862, 2.

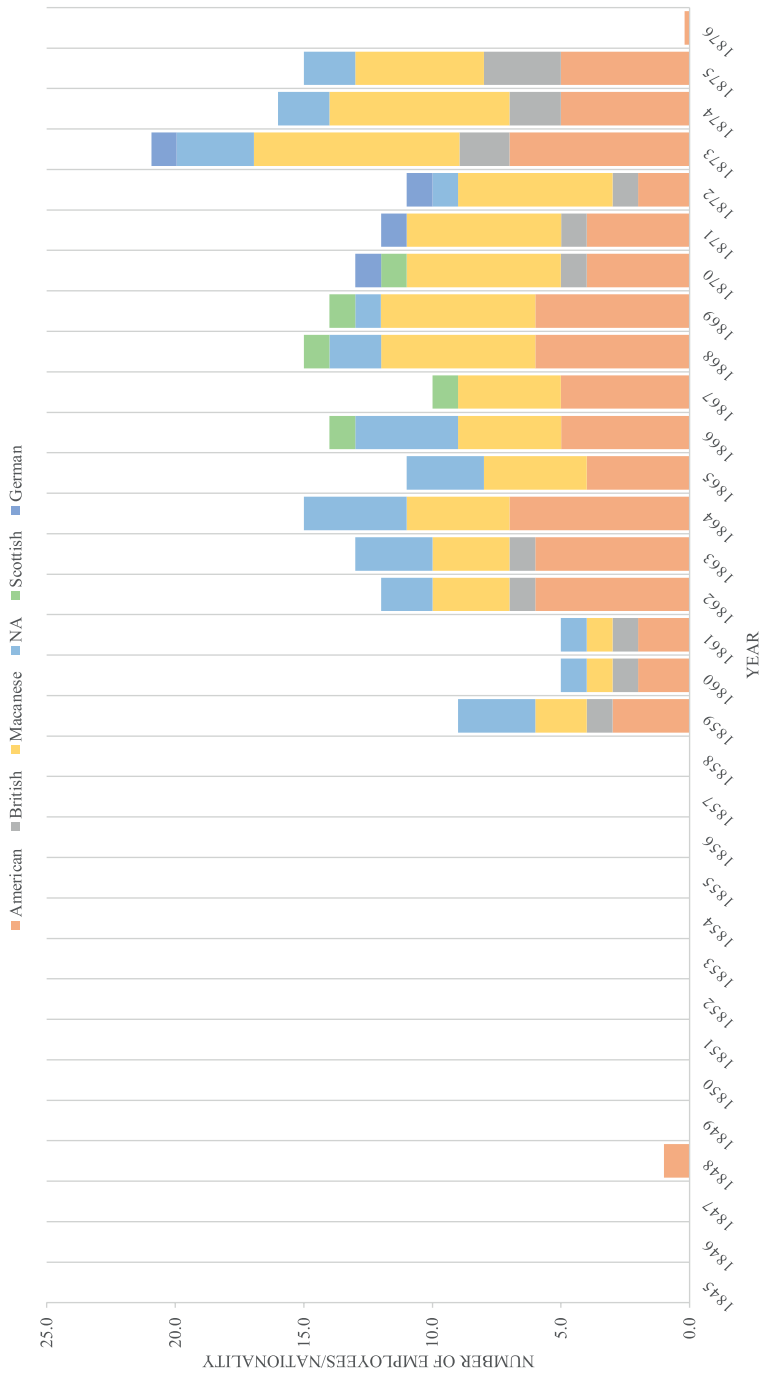


Figure 10: Augustine Heard & Co. Hong Kong employees, 1845–1876. Source: Larkin, MSFN, 2022.

This point speaks simultaneously to the transience of Hong Kong's foreign community and the relative stability of its Macanese inhabitants. While Augustine Heard & Co. employed more Americans than members of any other community, the tenures of these American clerks were short and staff rotation was high. The average tenure of the firm's American and Anglo-European employees in Hong Kong was just under three years in any given role, in keeping with social expectations for the idealized parsimonious clerk.

But now my five years are nigh up –
I do not sigh or moan;
I've been careful with my salary
And so – *I'm going home!*⁷¹

Partners' tenures averaged higher than clerks', and departure from Hong Kong did not necessarily signal departure from the firm, as partners moved between the colony and Shanghai to head the major branches. Still, at any given time, there was nowhere near as significant an American presence as an overview of their company roster would suggest. The Macanese staff were, by contrast, invested in the colony and in using the opportunity that the firm afforded to establish themselves, their kin, and their community. Their average length of tenure with the firm in Hong Kong was seven years, and at least three employees outlasted the longest consecutive sitting partner, George Heard, by a handful of years (Figure 11).

Among the ten Macanese staff named as members of the firm, longevity of tenure and social mobility were common trends. Not all staff stayed with the firm's Hong Kong branch for protracted lengths of time – Francisco de Assis Vandenburg stayed for one year only in 1862 – but most staff used the company throughout its operation to establish themselves and navigate the treaty port world.⁷² For example, Francisco Antonio Seabra stayed with the Hong Kong branch for about 13 years, as did Inácio Pires Pereira and Olímpio Augusto da Cruz. J. C. d'Acquino lasted about ten, while Polycarpo Antonio da Costa and Lourenco Maria Baptista each stayed eight years. Certain names cropped up throughout China as clerks moved with the firm. Henrique Caetano Victor de Figueiredo stayed with the firm from 1859 until its bankruptcy and worked in both the Hong Kong and Shanghai offices. His son José Miguel Victor de Figueiredo, in turn, got his start as a clerk in the British colony. The surnames Souza and Cruz appeared throughout Ningbo, Shanghai, Hankou, and Hong Kong.⁷³

The stability of their tenures confirms the ability of the colony's Macanese community to navigate between different publics within Hong Kong; in this case, Amer-

⁷¹ "Clerk's Lament," *China Punch*, Hong Kong, April 24, 1873, 11.

⁷² Catherine Chan, "From Macanese Opium Traders to British Aristocrats: The Trans-Imperial Migration of the Pereiras," *Journal of Migration History* 6, no. 2 (2020): 237.

⁷³ Larkin, MSFN.

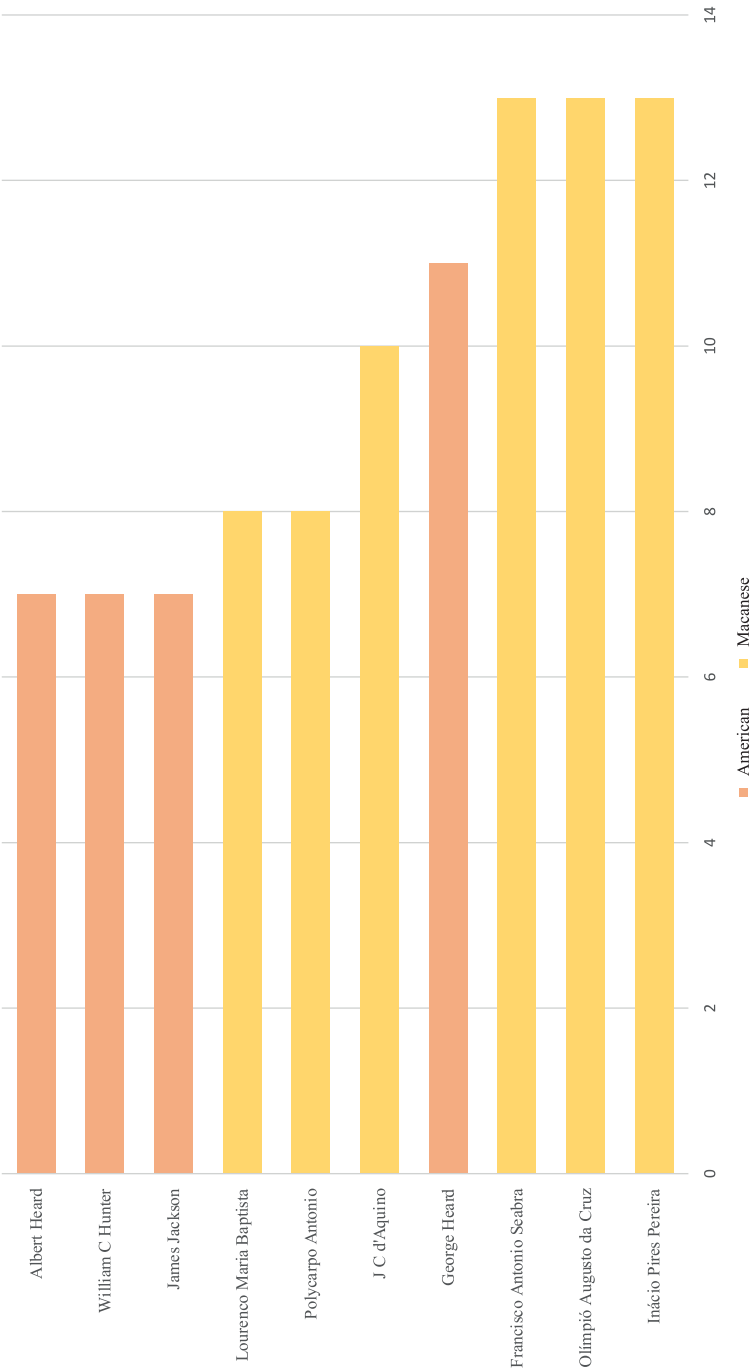


Figure 11: Augustine Heard & Co.'s longest-serving staff in Hong Kong. Source: Larkin, MSFN, 2022.

ican, Anglo-European, and Eurasian. It adds granularity to Catherine Chan's suggestion that "Hong Kong's Anglophile Macanese" were seen as "denationalized" through their entanglement with the colony's society, commerce, and civic culture.⁷⁴ A combination of the connections that their early contact with British and American traders afforded, and a strict socio-economic hierarchy in Macau that limited the middle class's opportunities for upward social mobility, had encouraged these men and women to try their luck in the new British colony of Hong Kong.⁷⁵ In this colony, many found lucrative opportunities to work for foreign firms in clerical roles – a phenomenon that owed much to the reputation their community had built as intermediary employees in the earlier decades of the China trade at Canton and Macau. Through the firm these employees became part of a wider transcultural network that transmuted white migrant and local communities who in other contexts would be separated by strict imperial and colonial hierarchies into a syncretic Hong Kong community.⁷⁶ Such forms of assimilation were not free from racial discrimination and cultural tensions, as both Chan and Vivian Kong emphasize in their research. Still, the mercantile firm operated in a similar manner to the colony's associational culture of the 1880s by providing its middle-class employees a structured environment that subverted, in some respects, the "color bar" of the colony's social and professional worlds.⁷⁷

The very presence of named Macanese individuals in company rosters testified to their intermediary social position within Hong Kong's socio-racial hierarchies, and emphasizes, by contrast, how omission obscured the ways Chinese staff likewise navigated the company structure. Due to inconsistent record-keeping, the Heards rarely accounted for their Chinese employees, nor did chronicles and directories. Even in 1869, when the *Chronicle & Directory for China* began to consistently catalog principal Chinese firms, they stopped short of listing partners or staff.⁷⁸ Such omission conformed to rote discursive practices of imagining an idealized segregated colonial society in which the Chinese community was absent.

The myth of segregation was a powerful one in a society where contact between Chinese and foreign communities was a quotidian fact. Each partner of an American firm had a personal Chinese servant, their families employed amahs, and their

74 Catherine Chan, "Cosmopolitan Visions and Intellectual Passions: Macanese publics in British Hong Kong," *Modern Asian Studies* 52, no. 1 (2022): 356.

75 Catherine Chan, *The Macanese Diaspora in British Hong Kong: A Century of Transimperial Drifting* (Amsterdam: Amsterdam University Press, 2021), 46–47.

76 For further reading see: Ann Laura Stoler, "Rethinking Colonial Categories: European Communities and the Boundaries of Rule," *Comparative Studies in Society and History* 31, no. 1 (1989): 137.

77 Chan, "Cosmopolitan Visions," p. 355; Vivian Kong, "Exclusivity and Cosmopolitanism: Multi-Ethnic Civil Society in Interwar Hong Kong," *The Historical Journal* 63, no. 5 (2020): 1283.

78 *Chronicle & Directory for China, Japan, & the Philippines* (Hong Kong: Daily Press, 1869), 173.

houses were maintained by a roster of Chinese employees.⁷⁹ Augustine Heard & Co. was only able to function through the ingenuity of their Chinese compradors and the local networks of staff that they engaged for the firm.⁸⁰ Through Mok Sze Yeung, the Heards strategically engaged a world of Chinese labor and a network of Chinese contacts to expand their business both in Hong Kong and throughout China.⁸¹ Compradors like Mok, in turn, used the capital and contacts acquired by working for foreign firms such as the Heards to establish themselves as the vanguard of a Chinese Hong Kong elite who, by the late nineteenth century, would guide the colony's continued growth.⁸² Yet outside the odd contract securing staff for distant branches in Japan, the Philippines, and along the China coast, the majority of the Heards' staff remained anonymous, restricting an accurate accounting of their numbers or the continuity of their employment.

The Heards' Hong Kong compradors were particularly instrumental in linking the firm, and the colony by extension, with wider Nanyang commercial networks. A series of their Cantonese compradors managed affairs in such ports as Yokohama, Saigon, and Fuzhou. Liang Ah Chin (Liang Yadian 梁亞甸) and On Acheong (Wen Yazhang 溫亞章) were hired in 1860 to travel to Vietnam with two months' advanced pay.⁸³ Ayeung (Ya Yang 亞楊) was contracted in Hong Kong the same year to travel to Fuzhou on behalf of the firm, and in 1862 and 1864 respectively, Je Ayu (Xie Yuyu 謝亞玉) renewed contracts to serve as comprador in the colony.⁸⁴ In relocating, these compradors in turn generated opportunities for the wider Cantonese community to migrate, such as Akow (Chen Yajiu 陳亞九) who took a shroff, two "coolies," and a cook with him to Yokohama in 1860.⁸⁵

79 Albert Heard to Mary Heard, Hong Kong, September 1, 1874, HL-5, HBS; See: Johnathan A. Farris, *Enclave to Urbanity: Canton, Foreigners, and Architecture from the Late Eighteenth to the Early Twentieth Centuries* (Hong Kong: Hong Kong University Press, 2016), 35.

80 J. Heard, *An Account of His Life*, 33.

81 Kaori Abe, *Chinese Middlemen in Hong Kong's Colonial Economy, 1830–1890* (Abingdon: Routledge, 2017), 62–66; Kaori Abe, 'Intermediary Elites in the Treaty Port World: Tong Mow-chee and his Collaborators in Shanghai,' *Journal of the Royal Asiatic Society* 3, no. 25 (2015): 466.

82 Tsai, *Hong Kong in Chinese History*, 66–90; see also: John M. Carroll, "Colonial Hong Kong as a Cultural-Historical Place," *Modern Asian Studies* 40, no. 2 (2006): 539–540.

83 *He Gongsì dīng qīng Liang Yadian, Wen Yazhang* 喝公司訂請梁亞甸,溫亞章, Hong Kong, 1860, Heard II, Case 9, HBS.

84 *Li danbao dan ren Ya Yang* 立担保人亞楊, Hong Kong, 1860, Heard II, Case 9, HBS (characters as in original); *Li hetong ren Xie Yuyu* 立合同人謝亞玉, Hong Kong, 1862, Heard II, Case 9, HBS; *Li hetong ren Xie Yuyu* 立合同人謝亞玉, Hong Kong, 1864, Heard II, Case 9, HBS.

85 Memo, Agreement between Augustine Heard & Co. and Akow, Hong Kong, June 7, 1860, Heard II, Case 9, HBS; For an example of how Chinese employees exploited foreign networks, see: Carl T. Smith, 'Chan Lai-Sun and His Family: A nineteenth century China Coast Family,' *Journal of the Hong Kong Branch of the Royal Asiatic Society* 16 (1976): 112–116.

The majority of the Heards' Chinese staff did not, however, appear in directories like the *Macanese*, or contracts like the *compradors*. Their elision perpetuated a myth of segregated space that was, in reality, impossible to maintain. The range of occupations recorded in one house inventory from 1859 outlined the pervasive roles Chinese employees played in the maintenance of the American merchant house.⁸⁶ Chinese labor supported every aspect of life, from dressing and washing to hosting, cooking, cleaning, gardening, and traveling. A quantitative approach to the archive – so valuable in profiling the foreign and Macanese staff – elides these contributions. Close reading of discursive materials is therefore necessary to gain a sense of the forms quotidian interaction took and how these interactions reflected hidden colonial socio-cultural landscapes.

Americans wrote their unnamed Chinese staff into the archives through a variety of racial and cultural tropes.⁸⁷ While their descriptions often used generics to describe employees, they also spoke to the ubiquity of Chinese individuals in what they attempted to construe as white foreign spaces.⁸⁸ Their accounts, while calibrated to depict the stability of colonial hierarchies, betrayed the micro-level contact that occurred daily between all classes of foreign and Chinese communities.⁸⁹ By 1866, Chinese employees, no longer necessarily guaranteed by the *comprador* and subject to greater foreign control, could still secure economic advantages through their association with the white community. Increasing familiarity further led white foreigners to draw a line distinguishing the “domestic from the dangerous,” and their staff from the “threatening society beyond the garden gate.”⁹⁰ By employing numerous Chinese staff, the Heards ensured the presence of Chinese individuals in spaces that were outwardly depicted as exclusively foreign, leading to a breakdown in social and racial barriers as Chinese staff gained admittance into both private domestic and public social colonial spaces. If on paper Hong Kong's social landscape was stratified, the reality was far more assimilative.

⁸⁶ Augustine Heard & Co. Inventory, ‘Office House,’ 1 November 1859, Case 27, HBS.

⁸⁷ Generalizations about Chinese staff were repeated often and in similar rhetoric across the treaty ports. See: Bradford, “Diary, June 9, 1862,” in *“Maskee!” The Journal and Letters of Ruth Bradford, 1861–1872* (Harford: The Prospect Press, 1983), 83; Francis Blackwell Forbes to his sister, Hong Kong, August 6, 1858, Ms. N-49, MHS. Augustine Heard & Co. List of wages, Hong Kong, undated, EG-4-8, HBS; Augustine Heard Jr., *The Poisoning in Hong Kong: An Episode of Life in China Forty Years Ago*, 1894, GQ-2-1, HBS; 4; J. Heard, *An Account of his Life*, 127; Rebecca Kinsman to Nathaniel Kinsman, Macao, 7 February 1844, MSS-433, Phillips Library, Peabody Essex Museum, Salem, MA (PEM).

⁸⁸ Claire Lowrie, *Masters and Servants: Cultures of Empire in the Tropics* (Manchester: Manchester University Press, 2016), 2, 86, 89.

⁸⁹ Christopher Munn, *Anglo-China: Chinese People and British Rule in Hong Kong, 1841–1880* (Richmond: Curzon, 2001), 79–80.

⁹⁰ Munn, “Hong Kong, 1841–1870,” 400.

Conclusion

A spatial microhistory of Augustine Heard & Co.'s Hong Kong branch demonstrates how quantitative digital approaches, when deployed to augment qualitative research, provide richer perspectives on the ways American elites shaped the colony. GIS cataloging of the Heard properties and networks encourages new insights into the ways American capital affected the spatial and social organization of the port and public perceptions of the colonial project. Their various residential holdings reflect the interests and anxieties of a colonial elite both concerned about protracted contact with the Chinese community and with conforming to the socio-cultural mores of Hong Kong's white community. Their industrial holdings, in turn, reflect the regional commercial interests of the American mercantile community and their contribution to the myth of foreign industriousness. Wharfs, coal sheds, and shipyards signaled a firm committed to Nanyang and China coast commerce; property on the eastern and western peripheries of the settlement reified the demarcations between elite social and utilitarian colonial space; their situation on the waterfront foregrounding foreign estates climbing into the hills contributed to a tableau of imperial success. In this sense, Augustine Heard & Co. helped physically "make" nineteenth century Hong Kong.

Yet their firm also shaped the colony in less tangible ways. Through the opportunities Augustine Heard & Co. provided its numerous staff, the company helped to sometimes sharpen and sometimes redefine Hong Kong's social and racial boundaries. Partners used their privileged position to navigate the elite milieu and create avenues for kin and acquaintances in the metropole to enter the China trade. Transient American, British, and European clerks exploited their position to participate in colonial society, as did the Macanese for whom the firm meant stability. Chinese staff, ranging from prominent and influential compradors to anonymized servants and groundskeepers, likewise capitalized upon their employment within the American firm by navigating both colonial society and wider regional commercial networks. By providing the setting for these communities to interact with each other and traverse colonial space, Augustine Heard & Co. helped socially "make" the port.

American capital was thus both instrumental in tangibly developing the port and in installing the institutions through which a diverse range of American, British, European, Macanese, and Chinese individuals established themselves in and shaped colonial society. Rather than supplant a qualitative microhistorical narrative of the firm's relation to Hong Kong, the use of GIS and SNA, inspired by quantitative historical practice, produces the infrastructure of a "deep map" – enabling a holistic understanding of the firm's impact upon the colony. By integrating

such methods and providing the infrastructure for others to do the same, we are developing a framework for increasingly nuanced historical analysis sensitive to the interrelations between space, place, and time.

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Ling-ling Lien, Wei-chun Yeh

Reimagining Elite Women's Culture in Late Imperial China: Social Networks, Literary Legacies, and the Transition to Modernity

“Talented women’s culture” (*cainü wenhua* 才女文化) has emerged as a popular topic in Chinese women’s history since the 1990s, perhaps exemplified best by the works of Dorothy Ko and Susan Mann which have served as inspiration for successive generations of scholars and led to a surge of research on elite women’s culture during late imperial China.¹ Notably, there are at least 423 monographs and articles covering 89 individual female writers from the Ming-Qing period (1368–1911), with 82% of these works being published after 2000.²

Scholars have largely assessed elite women’s culture, whether concentrating on individuals (or their individual works) or grouping them and/or their writings based on common attributes, from two approaches: their biographical backgrounds and literary works. Moreover, the locality and association of elite women have been important points of analysis. For instance, in Jiangnan, where wealth and culture thrived, literati families invested in the education of their daughters, creating a reservoir of elite women with writing talents and access to publishing, a phenomenon which has resulted in previous research on elite women predominantly centering around Jiangnan. Scholars have also noted that Ming-Qing elite women were not confined to prescribed domestic roles but actively engaged in various social arenas,

1 Dorothy Ko, *Teachers of the Inner Chambers: Women and Culture in Seventeenth-Century China* (Stanford: Stanford University Press, 1994); Susan Mann, *Precious Records: Women in China's Long Eighteenth Century* (Stanford: Stanford University Press, 1997). When reviewing the studies of women’s literature in the Qing dynasty, Hu Siao-chen 胡曉真 also credits these two books as “laying a significant foundation for literary research.” Hu Siao-chen 胡曉真, “Yiwen shengming yu shenti zhengzhi: Qingdai funü wenxue shi yanjiu qushi yu zhanwang” 藝文生命與身體政治 – 清代婦女文學史研究趨勢與展望 [Literary experience and body politics: Directions in the study of women’s literature of the Qing], *Jindai Zhongguo funüshi yanjiu* 近代中國婦女史研究 13 (December 2005): 29.

2 This survey includes works in Chinese, English, Japanese, and Korean. The well-known female writer and martyr Qiu Jin 秋瑾 (1875–1907), however, is not included as the surveyor claims that the scholarship on her is enormous. Kelvin Yu-hin Ho 何宇軒, “Ming Qing nüxing zuojia zhi gebie yanjiu lunzhu zhijianlu” 明清女性作家之個別研究論著知見錄 [A selected bibliography of scholarship on individual studies of Ming-Qing women writers], *Shumu jikan* 書目季刊 50, no. 4 (March 2017): 75–114.

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such as Jiaoyuan shishe 蕉園詩社 (Banana Garden Poetry Society).³ Dorothy Ko's observations even indicate that some poetry clubs in which women participated were neither kinship-based nor gender-exclusive, suggesting that elite women may have played larger roles in public than previously believed.⁴ When examining the literary works of elite women, scholarship has tended to analyze them by their subjects or themes, including homecoming, dreams, friendship, travel, illness, suicide, lamenting the dead, and teaching children, among many others.⁵ Overall, regardless of the research approach adopted, the study of Ming-Qing elite women's culture has evolved into a salient sub-field within the history of Chinese women.

While current scholarship on elite women continues to flourish, there regrettably remain few clues about the size and extent of their communities and connections beyond these localities and organizations. In short, understanding the macro view is essential for accurately estimating the influence of elite women's culture. Moreover, since the beginning of the twentieth century, as China sought modernization, the classical training and cultural achievements of elite women were mostly disdained and deemed "useless" for the betterment of the state and society in the new era. The concept of the "talented woman" came to symbolize the "old tradition," whereas the "new woman" (*xin nǚxing* 新女性), who had received a modern education and wrote in the vernacular, represented the new cultural trend of the time, all of which further clouded the impact of the "old" talented woman. This chapter aims to explore shifts in elite women's culture, particularly examining different patterns in the social networks of talented women, to in part lift the cloud obscuring their larger communities. Scholars have pointed out that Ming-Qing women relied on patronage from male kin and teachers to publish their works.⁶ However, the late Qing period also saw the emergence of new institutions, such as newspapers and periodicals, which became available to women, enabling a greater visibility of their writings and transformations in social networks as well as ultimately reshaping women's culture. To detect these social networks of talented women, this study selects female writers engaged in classical literature circles and utilizes network analysis tools for visualizing their connections, including kinship,

3 Daria Berg, "Negotiating Gentility: The Banana Garden Poetry Club in Seventeenth-Century China," in *The Quest for Gentility in China: Negotiations beyond Gender and Class*, ed. Daria Berg and Chloe Starr (London: Routledge, 2007), 73–93.

4 Ko, *Teachers of the Inner Chambers*, 179–250.

5 For a bibliography of elite women in late imperial China, see Kelvin Yu-hin Ho 何宇軒, "Ming Qing nǚxing zhuzuo yanjiu qushi chutan: Fu Ming Qing nǚxing zuopin zongji, nǚxing biejì zhijian-lu" 明清女性著作研究趨勢初探 – 附明清女性作品總集、女性別集知見錄 [An overview of scholarship on Ming-Qing women's writings and record of anthologies and collected works of Ming-Qing women's text], *Shumu jikan* 書目季刊 51, no. 4 (March 2018): 101–2.

6 Ko, *Teachers of the Inner Chambers*, 29–67; Ellen Widmer, "The Epistolary World of Female Talent in Seventeenth-Century China," *Late Imperial China* 10, no. 2 (December 1989): 1–43.

educational institutions, employment, social activities, and literary exchanges. These insights shed light on how women leveraged social and cultural capital to enhance their positions while contending with the challenges brought about by the “new woman” of the New Culture Movement, as well as revealing the divergent paths of women's culture during the transition from the late Qing period to the Republican era (1912–1949).

Attributes of Talented Women

Unlike the groups discussed in other chapters, the category of “talented women” lacks a distinct identity or boundary. In Chinese official histories, the women listed in the biographical section (*lienüzhuan* 列女傳) were primarily chosen based on their character and chastity rather than their talent. Fortunately, since the Qing dynasty, scholars spanning several generations have dedicated great efforts to compiling women's literary works, an endeavor which allows us to define the community of talented women in this chapter as those who had received classical training and published their poems and prose.⁷

For this study, we established the research platform Modern Women's Biographies (*Jindai funü zhuanji* 近代婦女傳記; hereafter MWB) in collaboration with the Ming Qing Women's Writings database (hereafter MQWW), which includes 2,722 biographical entries: 886 on talented women, 501 on female professors, and 1,333 on authors of women's journals.⁸ Our selection includes 826 women, whose biographies have been outlined and relations with others have been tagged, born during the period from the reign of the Jiaqing Emperor (r. 1796–1820) to the Xuantong

7 For the boom in the compilation of talented women's works in the Qing and the early Republican era, see Kang-I Sun Chang, “Gender and Canonicity: Ming-Qing Women Poets in the Eyes of the Male Literati,” in *Hsiang Lectures on Chinese Poetry*, ed. Grace S. Fong (Montreal: McGill University Press, 2001): 1:1–18; Ellen Widmer, “The Rhetoric of Retrospection: May Fourth Literary History and the Ming-Qing Woman Writer,” in *The Appropriation of Cultural Capital: China's May Fourth Project*, ed. Milena Dolezelova-Welingerova and Oldrich Kral (Cambridge: Harvard University Press, 2001): 193–225.

8 This database, founded by the Institute of Modern History, Academia Sinica, establishes the biographical entries of women from the late Qing period to the Republican era. Its sources include *Qing-dai guige shiren zhenglüe* 清代閨閣詩人徵略 (Brief Biographies of Qing Women Poets of the Inner Chambers), and *Minguo guixiu ji* 民國閨秀集 (*Collection of Genteel Ladies's Works during the Republican Era*), *Zhongguo lidai cainü shige jianshang cidian* 中國歷代才女詩歌鑑賞辭典 (*Dictionary of Poetry by Talented Women in Chinese History*), and the Ming Qing Women's Writings database. The MQWW, founded by McGill University under Grace Fong's supervision, draws data from 426 collections of poetry in which the works of 5,240 female poets are included. The project is ongoing and the open data are updated annually. See <https://digital.library.mcgill.ca/mingqing/english/introduction.php> (<https://digital.library.mcgill.ca/mingqing/english/introduction.php> (accessed on May 16, 2023)).

emperor (r. 1908–1911). It is important to note, however, that this selection represents only a portion of the entire population of talented women. For example, the book *Ming Qing Anhui funü wenxue zhushu jikao* 明清安徽婦女文學著述輯考 (*Compilation of Literary Works of Ming-Qing Women from Anhui*), edited by Fu Ying (傅瑛), includes 654 female poets,⁹ but the MQWW only has records of 225 women from Anhui. The omission of this collection as a source means that Anhui's representation within the entire population of talented women has been underestimated, a stark reminder that it is impossible to unearth all the literary works of women. Nonetheless, this above sample allows us to sketch general patterns regarding talented women to a degree of certain confidence.

Regarding the biographical information of the selected 826 talented women, their native places, to begin, are distributed as shown in Table 1. The table indicates that these women hailed from various provinces across China, yet there is a notable concentration in the Lower Yangzi region. Among the 783 known samples with identifiable birthplaces, 519 (66%) were from Zhejiang or Jiangsu, the two provinces renowned for their flourishing literary culture and well-developed printing industry. This finding aligns with previous research that emphasizes the significance of these regions in nurturing talented women.¹⁰

Table 1: Numbers of talented women and their native places during the Qing dynasty.

Native place	Talented women	Native place	Talented women
Zhejiang	259	Jilin	8
Jiangsu	257	Henan	5
Hunan	52	Guizhou	4
Anhui	42	Shaanxi	3
Fujian	38	Shanxi	3
Guangdong	34	Gansu	3
Zhili	19	Fengtian	3
Jiangxi	18	Yunnan	2
Hubei	11	Mongolia	2
Sichuan	9	Guangxi	2
Shandong	9	Unknown	43
		Total	826

9 Fu Ying 傅瑛, ed., *Ming Qing Anhui Funu Wenxue Zhushu Jikao* 明清安徽婦女文學著述輯考 [Compilation of literary works of Ming-Qing women from Anhui] (Hefei: Huangshan shushe, 2010), 1.

10 Susan Mann uses Hu Wenkai's 胡文楷 *Lidai funü zhuzuo kao* 歷代婦女著作考 (A Survey of Woman Writers through the Ages) to identify the place of birth of 3,181 women in the Qing and has discovered that 2,258 (70.9%) came from the lower Yangzi region. Mann, *Precious Records*, 230.

Table 2: Numbers of talented women and periods of their birth during the Qing dynasty.

Imperial reign(s)	MQWW	Annual average	MWB	Annual average
Shunzhi (1644–1661)	31	1.8	–	–
Kangxi (1662–1722)	92	1.5	–	–
Yongzheng (1723–1735)	13	1.0	–	–
Qianlong (1736–1795)	250	4.2	–	–
Jiaqing (1796–1820)	157	6.5	169	7.0
Daoguang (1821–1850)	181	6.2	185	6.4
Xianfeng–Tongzhi (1851–1874)	82	3.7	93	4.0
Guangxu–Xuantong (1875–1911)	54	1.5	99	2.8
Unknown	2,280		280	
Total	3,140		826	

Secondly, Table 2 presents the numbers of talented women in each reign of the Qing dynasty. Due to the lack of accurate birth dates for most women in the MQWW and the MWB, imperial reigns are used to identify the period in which they were born. As indicated here in Table 2, the majority of women recorded in the MQWW (73%) are known to have been born during the Qing dynasty. In the MWB, the “unknown” category refers to those women who were verified to have been born in the period from the reigns of Jiaqing to Xuantong, which represents 34% of the talented women in said period. According to the data of the MQWW, the reign of the Qianlong Emperor (r. 1735–1796) witnessed the first upsurge of talented women’s culture, with 250 female poets being recorded during a span of 59 years. This trend continued into the reigns of the Jiaqing and Daoguang (r. 1820–1850) emperors, during which 157 and 181 women writers were recorded, respectively. The annual average number of talented women in the three reigns was 4.2, 6.5, and 6.2. The MWB indicates a similar trend; that is, 169 female writers were recorded during the reign of Jiaqing, averaging 7 per year. In other words, Qing elite women’s culture reached its peak in the first half of the nineteenth century. This trend, however, was interrupted by the Taiping Rebellion from 1850 to 1864, a time which saw Jiangnan gravely devastated, to the extent that many elite families could no longer afford to cultivate the literary talents of their daughters. Simultaneously, a new type of education emerged where classical poetry was just one of the subjects for women. By the end of the Qing dynasty, the number of talented women never reached its pre-Taiping level.

Table 3: Marital status of talented women.

Status	Number	Percentage
Primary wife	495	60%
Second wife	71	9%
Betrothed	24	3%
Concubine	24	3%
Unmarried	20	2%
Courtesan	3	0%
Unknown	189	23%
Total	826	100%

Continuing to a third element of their identity, Table 3 presents the marital status of the talented women. Out of the 826 samples, only 23 individuals are unmarried, which includes 3 who have been identified as courtesans, indicating a marriage rate of over 75%. As shown in Table 3, elite families preferred to marry their daughters “out” as primary wives as it represented prestige and a certain status. The status of being a second wife was legally recognized, and the woman would be enshrined in the ancestral hall after her death. Betrothed here refers to those who were engaged, but either party died before the two were wed. Concubines, only 3% of sampled talented women, did not hold a formal status within Chinese households, and even if they bore sons, were not necessarily honored in the ancestral shrine following their death. As a result, most elite families were reluctant to marry their daughters out as concubines. The underrepresentation of courtesans in our data set does not mean that courtesans in the Qing dynasty did not write or publish poetry – some adoring clients did indeed preserve their works. However, when the Qing poet Yun Zhu (惲珠) (1771–1833) compiled *Guochao guixiu zhengshi ji* 國朝閨秀正始集 (*Collection of Writings Conforming to Custom of Genteel Ladies of the Qing*), she deliberately omitted the writings of Buddhist nuns and prostitutes, separating them from “genteel ladies” (*guixiu* 閨秀) who not only possessed literary talents but also adhered to wifely respectability. As Susan Mann points out, Yun Zhu’s views “were widely shared in the High Qing era,” and “mid-Qing courtesans – unlike the *guixiu* – had no kinsmen who were able or willing to preserve and publish their work.”¹¹ This also explains why so few poems by courtesans circulated during the mid-Qing.

But this survey of talented women’s marital status also raises an intriguing question: Did marriage hinder women from literary creativity? Undoubtedly, a daughter-in-law’s responsibilities over domestic affairs might have occupied her time for writing, and a demanding mother-in-law could potentially stifle her creative pur-

¹¹ Mann, *Precious Records*, 122–3.

suits. A case in point is the renowned poet Wang Duan (汪端) (1793–1839), who was once criticized by her mother-in-law for disorderliness in domestic affairs. She noted that while Wang Duan “possessed sufficient knowledge of ancient practices as the wife of Peizhi, she lacked the talent to navigate change.”¹² However, the presence of so-called “singing in harmony” poetry between husbands and wives in the Qing serves as evidence that talented women persisted in their writing endeavors even after marriage.¹³ This suggests that despite potential challenges, these gifted women continued to express their literary talents, demonstrating resilience and determination in pursuing their artistic passions within the constraints of married life.

Social Networks of Talented Women in the Early nineteenth century

In exploring the intricate interconnections among talented women, we utilize the network analysis tool Gephi to visually represent these relationships. This process involves constructing multi-mode networks for analysis, incorporating three types of nodes: individuals, texts, and organizations. The texts under scrutiny specifically include *Qiaoying* (喬影) [*The Fake Image*] by Wu Zao (吳藻) and the journals featuring publications by Chen Xiaocui (陳小翠) – both instances will be extensively discussed later. Organizations (N = 314) encompass those highlighted in the biographies of talented women, while individuals are categorized into five groups based on their attributes, as outlined below.

1. Talented Women (N = 770): These are the central figures of this study.
2. Female Teachers (N = 56): While talented women generally shared a common background characterized by domesticity, a few also served as teachers within the inner chambers. Furthermore, during the late Qing period, educated women working outside their homes became increasingly common, leading us to further distinguish female teachers from the category of talented women.

¹² Chen Wenshu 陳文述, *Yidao tang wen chao* 頤道堂文鈔 [Writings of Yidao Hall] (1807), *juan* 14, 4.

¹³ See Weijing Lu, “Writing Love: The *Heming ji* by Wang Zhaoyuan and Hao Yixing,” in *Gender and Chinese History: Transformative Encounters*, ed. Beverly Bossler (Seattle: University of Washington Press, 2015), 83–109; Xiaorong Li, “‘Singing in Dis/Harmony’ in Times of Chaos: Poetic Exchange Between Xu Can and Chen Zhilin during the Ming-Qing Transition,” *Jindai Zhongguo funüshi yanjiu* 近代中國婦女史研究 19 (December 2011): 215–54. Sufeng Xu, “Domesticating Romantic Love during the High Qing Classical Revival: Poetic Exchanges between Wang Zhaoyuan (1763–1851) and Her Husband Hao Yixing (1757–1829),” *Nan Nü: Men, Women and Gender in China*, Volume 15, Issue 2 (January 2013): 219–264.

3. Related Talented Women (N = 46): This group, born before the reign of Jiaqing, comprises female seniors who were predecessors or influential figures to the above main protagonists.
4. Related Degree Holders (N = 67): Those who had passed the imperial civil service examinations and held degrees of *juren* or *jinshi*.
5. Related Persons (N = 5,889): This category includes individuals connected to the talented women but who lack specific degrees or notable designations.

To explore the intricate networks among talented women, three principal categories of affiliations have been delineated: family, friendship, and organization. The familial ties expounded in the biographies of these talented women predominantly encapsulate immediate family connections, including parents, grandparents, siblings, and progeny. Additionally, a subset of narratives delves into the impact of more distantly related kin, such as aunts, uncles, and cousins. To systematically distinguish between these variants of familial bonds, they have been designated as either “family” or “family (distant).” The sphere of friendship is also stratified into two groups. The friendship (writing) relationship pertains to instances where individuals have contributed prefaces, epigraphs, postscripts, or concise biographies, or have engaged in collaborative poetic endeavors with the focal subjects of scrutiny. Conversely, the term friendship, in its exclusive sense, denotes a mutual acquaintance devoid of the aforementioned literary collaborations.

In instances where multiple connections coalesce between two individuals, precedence is distinctly accorded in the sequence of family, friendship (writing), family (distant), and plain friendship. In contrast, organizational relationships exclusively pertain to connections between an individual and an organization. Comprehensive quantitative details for each type of connection, including the number of edges for each, can be found in Table 4.

Table 4: Types and numbers of social network edges.

Type of edges	Number of edges retained (k = 3)	Total number of edges	Percentage of the total
Family	300	1,792	17%
Friendship (writing)	264	2,544	10%
Family (distant)	141	144	98%
Friendship	281	952	30%
Organization	264	2,507	11%
Total	1,250	7,939	16%

In an effort to streamline the network analysis, the focus has been on selecting nodes connected to at least one talented woman. The size of a node is determined by the count of its edges, with larger nodes indicating a higher number of connections. This approach, along with its visual representation, allows for estimating the extent of connections a talented woman had, interpreting her influence and level of activity within the network(s), and discerning nuances between influences originating from family ties or writing connections, as well as associations with other talented women, degree holders, ordinary related persons, or organizations.

Subsequently, nodes linked to a minimum of three other nodes ($k = 3$) are meticulously isolated to enhance lucidity, resulting in a total of 403 nodes (5.6%) and 1,250 edges (15.75%), as detailed in Tables 4 and 5. In essence, each node, on average, maintains six edges, with at least one connecting to a talented woman. Following this filtration, nodes exhibiting three or more connections are retained, while those linked solely to one talented woman are eliminated. This process ensures the preservation of more dynamically engaged nodes, contributing to a refined and robust network representation.

Table 5: Types and numbers of social network nodes.

Type of node	Number of nodes retained ($k = 3$)	Total number of nodes	Percentage of the total
Talented woman	107	770	14%
Female teacher	31	56	55%
Degree holder	67	67	100%
Related person	147	5,889	2%
Related talented woman	8	46	17%
Organization	43	314	14%
Total	403	7,142	6%

After the filtration process, only 14% of talented women's nodes are retained, in contrast to the 55% retention rate for female teachers. This decrease arises because numerous talented women were solely connected to a single individual, thus making them vulnerable to exclusion during filtration. When talented women concurrently assumed the role of educators, however, their engagement spanned a broader array of organizations and individuals, thereby fostering a more dynamic and expansive social interaction. The number of nodes representing degree holders remains unchanged post-screening, reflecting their sustained and active engagement within the network. In contrast, the number of related person nodes falls substantially to 2%, as the vast majority were only connected to a single talented

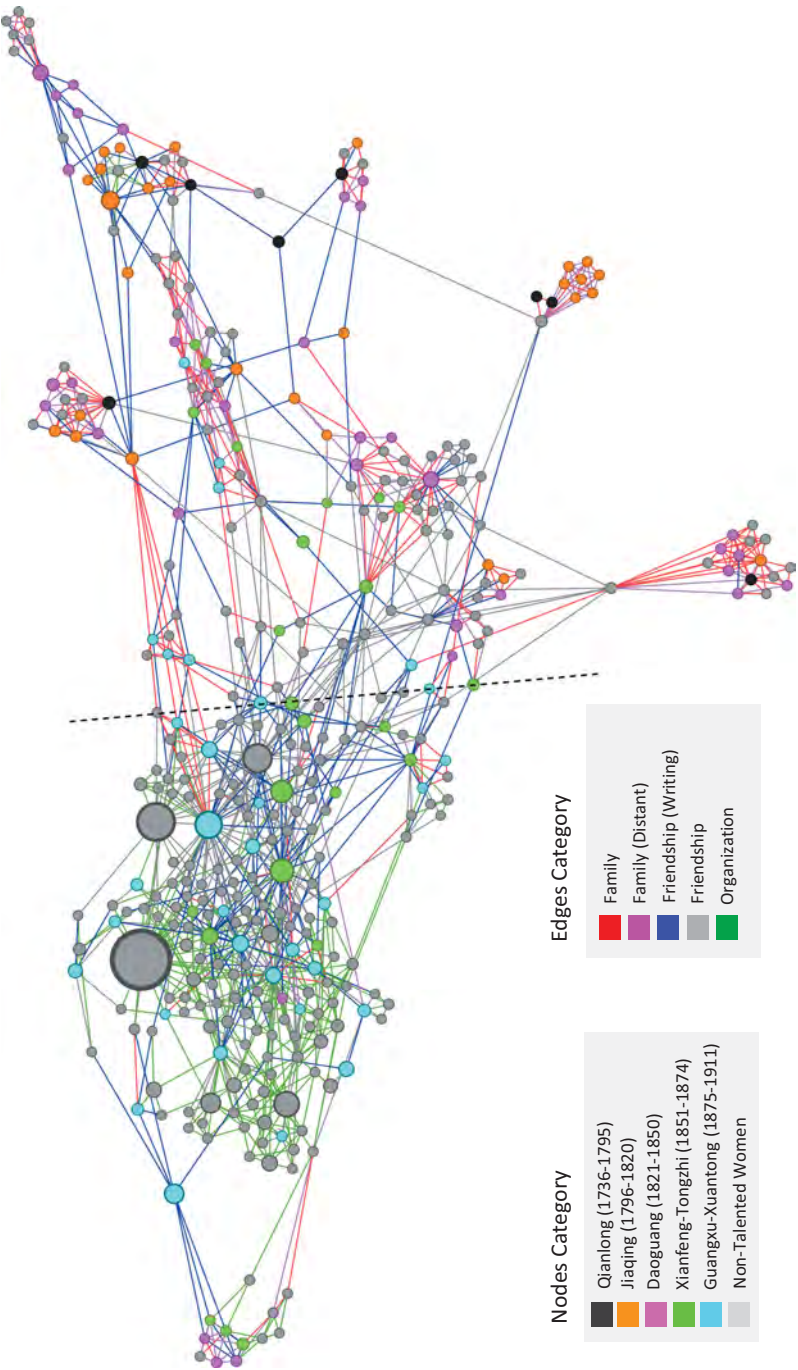


Figure 1: Social network of talented women: Periods of birth.

woman.¹⁴ Likewise, the count of organization nodes declines to 14% post-filtering, as it suggests that the prevalence of many of these organizations in the network results from the involvement of a solitary talented woman.

The nodes and edges are visually represented in the social network diagrams using Gephi, as illustrated in Figures 1 and 2. In Figure 1, node colors are assigned based on the birth era of talented women. Orange and pink nodes denote individuals born during the Jiaqing and Daoguang periods, primarily located on the right side of the graph. Meanwhile, green and blue nodes represent those born during the Xianfeng-Tongzhi and Guangxu-Xuantong periods, predominantly situated on the left side of the graph. Gray nodes signify entities of non-talented women, including related men and organizations. Besides the variation in color (corresponding to different time periods), there is also a noticeable difference in size between the nodes on the left and right sides. Nodes on the right are relatively uniform and generally smaller, creating well-defined clusters. In contrast, the left side features several considerably larger nodes with intersecting lines connecting them.

When applying color to the nodes based on their roles, the network diagram depicted in Figure 2 reveals intriguing patterns. The right half of the network predominantly consists of pink nodes representing talented women, accompanied by blue nodes denoting degree holders. On the left side, dominant nodes are in red, signifying female teachers, while numerous green nodes representing various organizations where talented women and female teachers participated are scattered throughout. The ensuing discussion focuses on the six clusters identified on the right side of the diagram, delving into the patterns of social relationships among talented women during the reigns of the Jiaqing and Daoguang emperors. To make the cluster networks more accessible and understandable, the cluster diagrams are

Figure 1 (continued)

Notes:

1. Node colors are based on the period of birth of talented women. The gray nodes refer to non-talented women.
2. Edge colors are based on the types of relationships between individuals. The green edge refers to the relationship between an organization and an individual.

14 It must be noted that there is a high possibility of underestimating the connections of male related persons as the relationships recorded within biographies and related sources are invariably from the perspective of talented women. For example, Zeng Guofan (曾國藩) (1811–1872) shares a connection with 16 nodes, but scholarship is aware of significantly more relationships. We have used Jin xiandai renwu zixun zhenghe xitong (近現代人物資訊整合系統) (Integrated Information System of Modern Figures) to broaden the associations of talented women, but the risk of underestimating men's roles within the network undoubtedly remains.

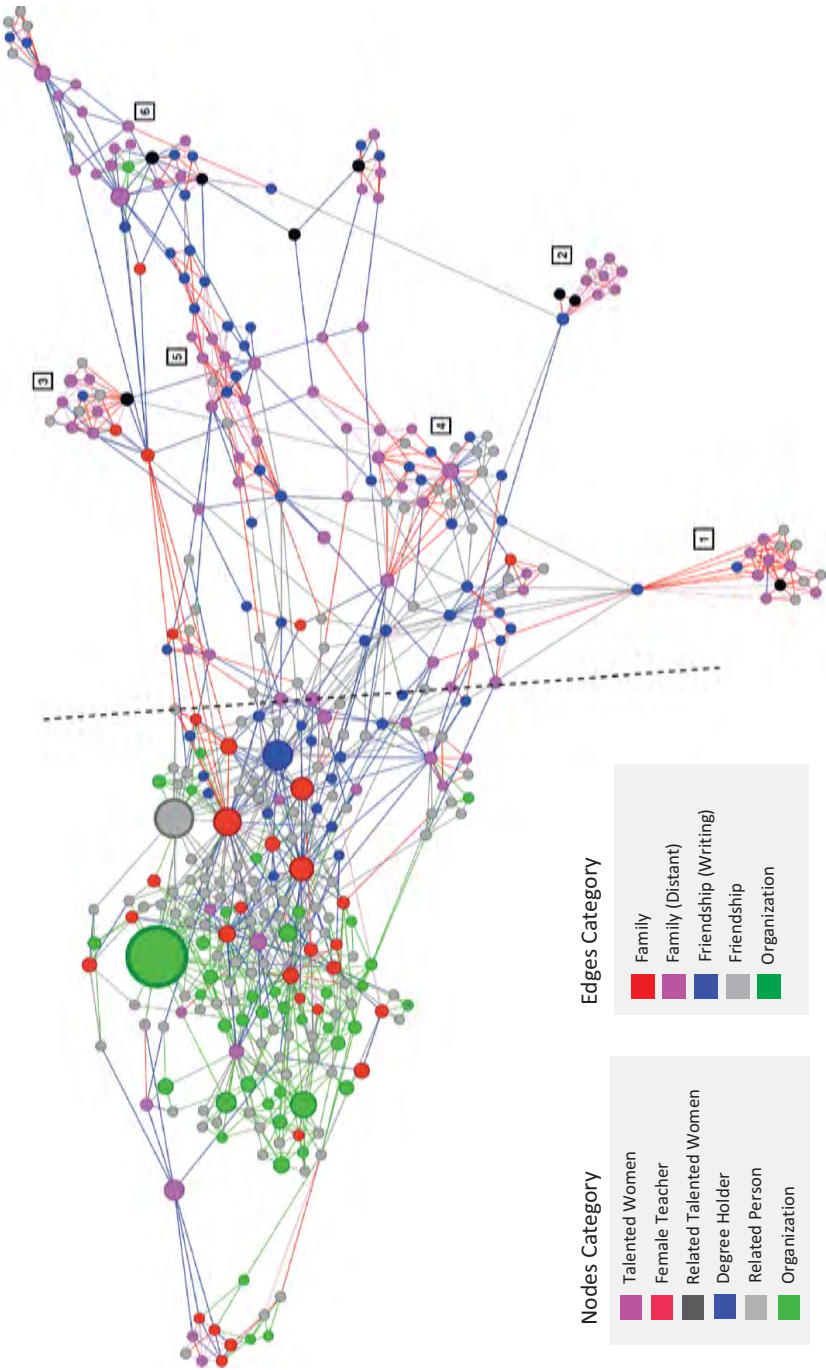


Figure 2: Social network of talented women: attributes and clusters.

portrayed in the form of ego networks centering on individuals with higher degree centrality. This exploration aims to shed light on their roles, contributions, and interactions within their respective clusters and the broader network.

Clusters 1 and 2 display a strong internal cohesion, relying exclusively on male members to establish connections with the outside world. Cluster 1 specifically represents the Zhou family of Hunan, whose matriarch, Lady Wang (王氏), assumed the responsibilities of educating her daughters and granddaughters. In acknowledgment of Lady Wang's achievements, Zuo Zongtang (左宗棠) (1812–1885), a son-in-law who was taken into the Zhou family, sponsored the publication of the anthology *Ciyun ge shichao* (慈雲閣詩鈔) (*Poetry of Ciyun Pavilion*), which is a collection of poems authored by Lady Wang and her pupils, including Zuo's wife Zhou Yiduan (周詒端) (1812–1870) and three daughters.¹⁵ Notably, Zuo Zongtang did not rely on his political associations to contribute commendations, as many literati typically did. Instead, he personally wrote a preface to honor the talented women of his extended family descended from Lady Wang. But the anthology served more so as a family memento rather than a publicized work and, resultantly, Cluster 1 had very few literary connections, with the talented women from both the Zhou and Zuo families solely dependent on Zuo Zongtang as their intermediary to the outside world (see Figure 3).

Cluster 2, in which talented women of Fujian became known through high-ranking official Liang Zhangju (梁章鉅) (1775–1849), shows a similar networking pattern to that of Cluster 1. Initially, Liang sought to compile an anthology featuring poems by Fujian poets, and to this end, he entrusted his cousin Liang Yunshu (梁韻書) (1780–1850) with the task of collecting works of female poets. Upon receiving the collection from Yunshu, Zhangju decided to publish a separate edition entitled *Minchuan guixiu shihua* (閩川閨秀詩話) (*Poetry of Genteel Ladies from Fujian*), which is divided into four *juan*, with the third focusing on Liang Zhangju's family and

Figure 2 (continued)

Notes:

1. Node colors are based on the attributes of individuals in the biographies and related sources pertaining to talented women.
2. The numbers indicated on the right of the graph denote the clusters of talented women, representing: (1) the Zhou of Hunan; (2) the Liang of Fujian; (3) the Zhang of Changzhou; (4) the Zuo of Changzhou; (5) the Xu-Yu marital liaison; (6) the poetry society Bicheng xianguan (碧城仙館).
3. The legend of this figure, unless otherwise specified, applies to the following figures of cluster and individual networks as well.

¹⁵ Zuo Zongtang 左宗棠, ed., *Ciyun ge shichao* 慈雲閣詩鈔 [Poetry of Benevolent Clouds Pavilion] (1873).

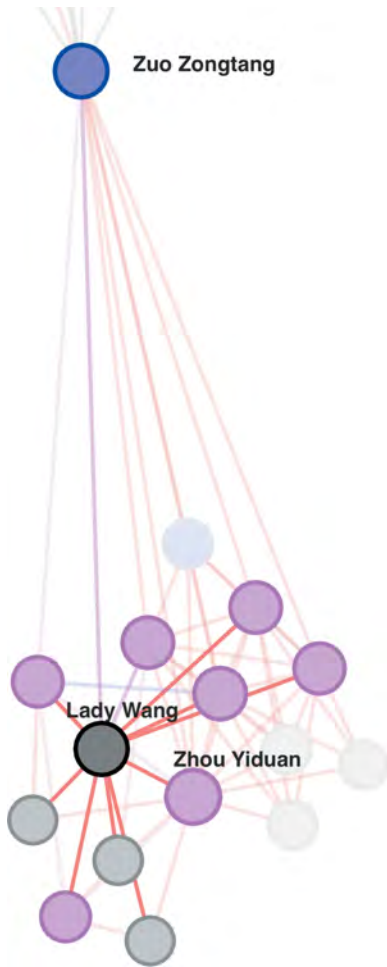


Figure 3: Cluster 1 network centered on Lady Wang.

the fourth containing works of Liang's relatives and acquaintances. Among the 103 featured female poets, 43 have been identified as being acquainted with Liang.¹⁶ Similar to Cluster 1, the talented women associated with Liang Zhangju had limited connections outside the family. This more insular network is thus characterized by

¹⁶ Wang Chia-Hung (王嘉弘), "Liang Zhangju *Minchuan guixiu shihua xuanji celüe*" 梁章鉅《閩川閩秀詩話》選輯策略 [Liang Jhang-jyu Min Chuan gui xiu shi hua's editor strategy (sic)], *Guoli Taizhong jishu xueyuan tongshi jiaoyu xuebao* 國立臺中技術學院通識教育學報 1 (December 2007): 7.

red and pink edges, indicating strong family ties and a reliance on Liang for external contacts and recognition (see Figure 4).

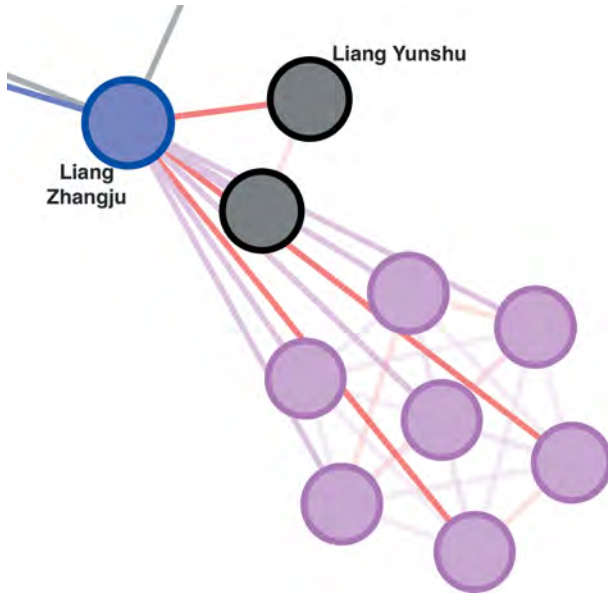


Figure 4: Cluster 2 network centered on Liang Zhangju.

A different type of network where talented women gained more publicity, however, is demonstrated by Clusters 3 and 4. More specifically, Cluster 3 represents the Zhang family of Changzhou, whose patriarch Zhang Qi (張琦) (1765–1833) dedicated many years to preparing for the imperial civil service examinations while practicing medicine and calligraphy before finally obtaining his *juren* degree. In a similar manner to the Zhou family in Cluster 1, it was Tang Yaoqing (湯瑤卿) (1763–1831), the wife of Zhang Qi, who took charge of their daughters' education while Zhang Qi frequently moved to different posts on his own. All four of their daughters became well-known poets, and the Zhang family had the remarkably unique tradition of marrying “in” sons-in-law to preserve the legacy of their talented women. Aside from the third and fourth daughters, whose husbands moved in to live with the Zhang family, the eldest daughter Zhang Qieying (張縉英) (1792–1862?) likewise remained in her natal home for 20 years after marriage. However, this was not a typical uxori-local marriage where the offspring, particularly sons, would inherit the wife's surname. Instead, the children of the Zhang sisters bore the surnames of their husbands. Lu Weijing points out that uxori-local marriage among the Qing literati served several purposes: it functioned as a reproductive tactic to

uphold patrilineal lines, a means to ascend social ranks via marital connections, and a mechanism to extend parental protection to married daughters.¹⁷ Evidently, through uxorilocal residence, the Zhang family aimed to assist their daughters in adapting to their new roles as daughters-in-law.

The Zhangs faced a scarcity of male heirs, with the eldest of Zhang Qi's two sons dying prematurely, and consequently, the younger son Zhang Yaosun (張曜孫) (1807–1863) took on the patriarchal role following his father's death. Given that his sisters and their children resided together under his estate, Yaosun assumed the responsibilities of educating his nieces, particularly the four daughters of Zhang Wanying (張訥英) (1800–1881) and of Wang Xi (王曦).¹⁸ Zhang Yaosun also actively supported the talented women in his family by publishing anthologies for his sisters, daughter, nieces, and concubine, seeking inscriptions from well-known scholars to celebrate the Zhang women's talents, demonstrating his ability to maintain connections within the literati circle despite lacking a formal degree.¹⁹ Notably, the talented women in Cluster 3, as depicted in Figure 5, exhibit a comparatively higher presence of blue edges in the network diagram, reflecting an increase in external literary connections facilitated by their male kin, setting them apart from Clusters 1 and 2. However, it is noteworthy that many of the literary connections displayed in women's publications were often linked to their father or brother, which suggests that as talented women gained more recognition, their literary ties often reflected the relationships established by their male family members.

Cluster 4 represents the Zuo family of Changzhou, with the sisters Zuo Xixuan (左錫璇) (1829–1891?) and Zuo Xijia (左錫嘉) (1831–1895) being particularly well-known poets, who are both recognized and documented in several women's biographical dictionaries, such as *Qingdai guige shiren zhenglüe* and *Lidai funü zhuzuo kao*. Growing up, they were surrounded by a community of talented female seniors: their mother Wang Yunhe (汪雲和), their mother's sister, their father's sister Zuo Cifen (左次芬), and their uncle's wife Chen Yunlian (陳蘊蓮) (1799–1869), all of

17 Weijing Lu, "Uxorilocal Marriage Among Qing Literati," *Late Imperial China* 19:2 (December 1998), pp. 64–110.

18 Susan Mann, *The Talented Women of the Zhang Family* (Berkeley: University of California Press, 2007).

19 The anthologies edited by Zhang Yaosun include Tang Yaoqing's *Pengshi ouyin* 蓬室偶吟 (Casual Rhymes from a Modest Cottage), Zhang Guanying's *Weiqing yi gao* 緯青遺稿 (Surviving Poems of Zhang Guanying), Zhang Lunying's *Lühuai shuwu shi gao* 綠槐書屋詩稿 (Collected Poems from Green Tree Studio), Zhang Qieying's *Danju xuan shi chugao* 澹菊軒詩初稿 (Collected Poems from Pale Chrysanthemum Studio), and both Zhang Wanying's *Canfeng guan wenji chubian* 餐楓館文集初編 (Collected Prose from Maple Studio) and *Linyun youyue zhi ju shi chugao* 鄰雲友月之居詩初稿 (Collected Poems from the Residence of Neighboring Clouds and Amicable Moon).

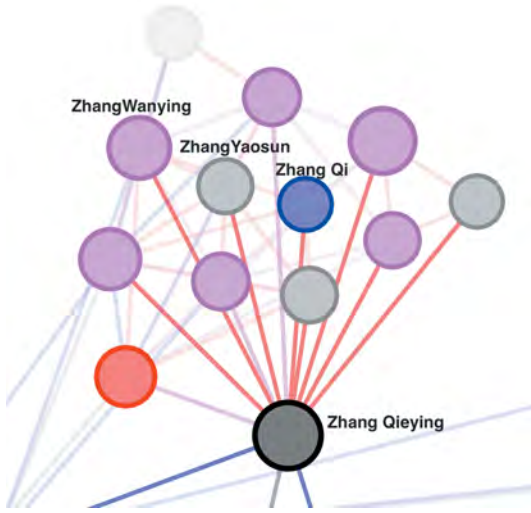


Figure 5: Cluster 3 network centered on Zhang Qieying.

whom were poets and/or painters.²⁰ The tradition of talented women was further reinforced through intermarriage with cousins. As shown in Figure 6, Xijia's daughter Zeng Yi (曾懿) (1853–1927) married Xixuan's son Yuan Xuechang (袁學昌) (1834–1876), and Xixuan's son Yuan Xuehao (袁學灝) married Zuo Wanxun's (左婉洵) daughter Zhuang Zhiqing (莊芷卿). Tragically, both Xixuan and Xijia became widowed and had to raise their children as single mothers around the age of 30 due to the Taiping Rebellion: Xixuan's husband, Yuan Jimao (袁績懋) (1818–1858), was killed by the Taiping army, and Xijia's husband, Zeng Yong (曾詠) (1813–1862), died of illness in a military camp. In 1891, on Xijia's sixtieth birthday, her sons Zeng Guangxu (曾光煦) (1836–1884?) and Zeng Guangmin (曾光岷) published the collection of their parents' poetry entitled *Zeng Taipu Zuo Furen shi gao he ke* (曾太僕左夫人詩稿合刻) (*Joint Collection of Poetry of Zeng Yong and Lady Zuo*) and sought contributions from 54 people to write prefaces or inscriptions for the collection. Except for Zuo Xixuan, Zuo Xihui (左錫蕙) (Xijia's sister, 1830–1900), Zuo Xingsan

²⁰ The dictionaries and databases we have referenced do not include the poems of Wang Yunhe, but Zuo Xijia mentioned that she did use the rhymes of her mother's poetry. Zuo Xijia 左錫嘉, "Yueye mingqin yong xianci ti tingqin zhuyue tu yun" 月夜鳴琴用先慈題停琴仁月圖韻 [The poem of "Playing Guqin in the Moonlit Night" uses the rhymes of the poem on the painting "Stop Playing Guqin and Anticipate the Rise of the Moon" by my deceased mother] and "Bai hudie yong xianci yong bai qiangwei yun" 白胡蝶用先慈詠白薔薇韻 [The poem "White Butterflies" uses the rhymes of the poem "White Roses" by my deceased mother], in *Lengyin xian'guan shi gao* 冷吟仙館詩稿 [Collected poems from Lengyin xian'guan], *juan 1*.

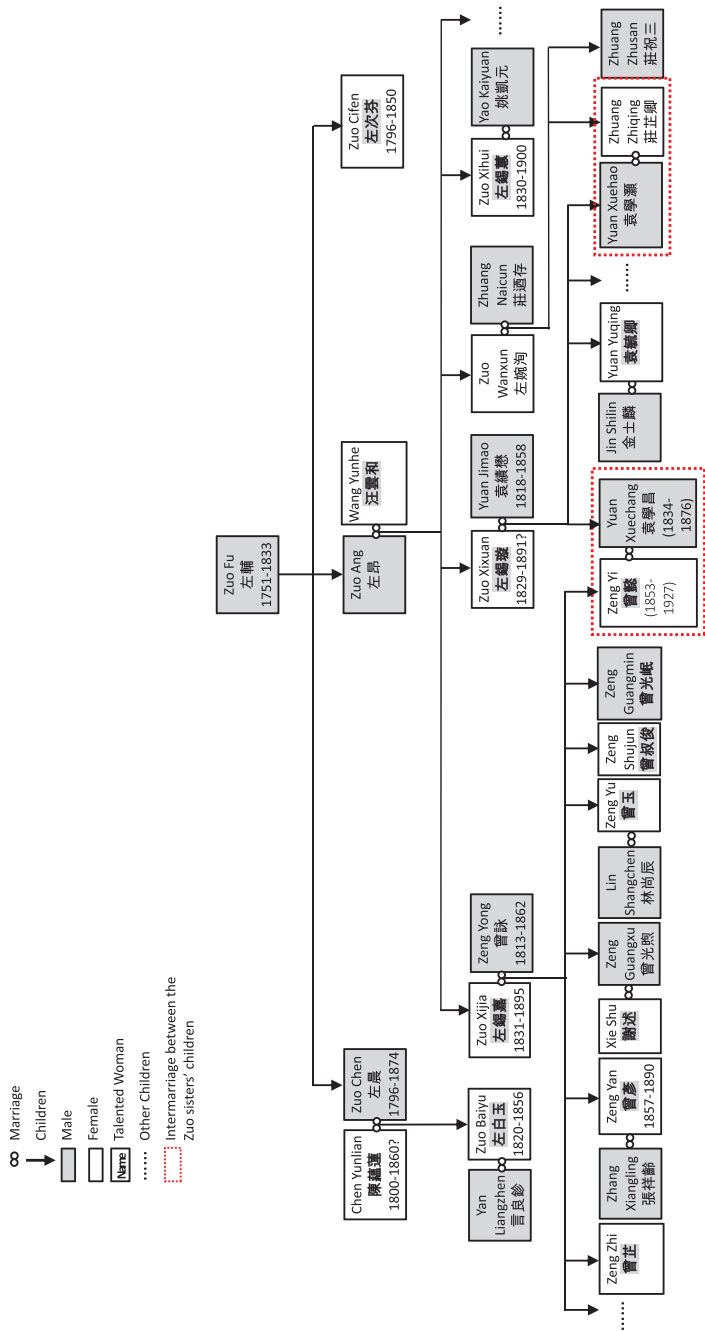


Figure 6: Zuo family tree.
Sources: Lin Mei-yi 林玫儀, “Shilun Yanghu Zuoshi erdai cainü zhi jiazu guanxi” 試論陽湖左氏二代才女之家族關係 [The Talented Women of the Zuo Clan of Yanghu and Their Family Relationships], *Zhongguo wenzhe yanjiu jikan* 中國文哲研究集刊 30 (March 2007): 193.

(左省三) (Xijia's cousin), and Lin Shangchen (林尚辰) (Xijia's son-in-law), the other contributors are all acquaintances of Zeng Yong or Zeng Guangxu. Notably, these non-familial relationships were geographically widespread, ranging from Jiangsu and Sichuan to Hebei and Shanxi. Most of the contributors were men, with the three exceptions of Zuo Xihui, Zuo Xixuan, and Zhao Yunqing (趙韻卿). Once again, the literary connections of the talented women of the Zuo family shown in the network of Figure 7 highlight the extensive relationships of the Zeng men, connections which played a crucial role in disseminating the works of the Zuo sisters and elevating their prominence within literary circles.

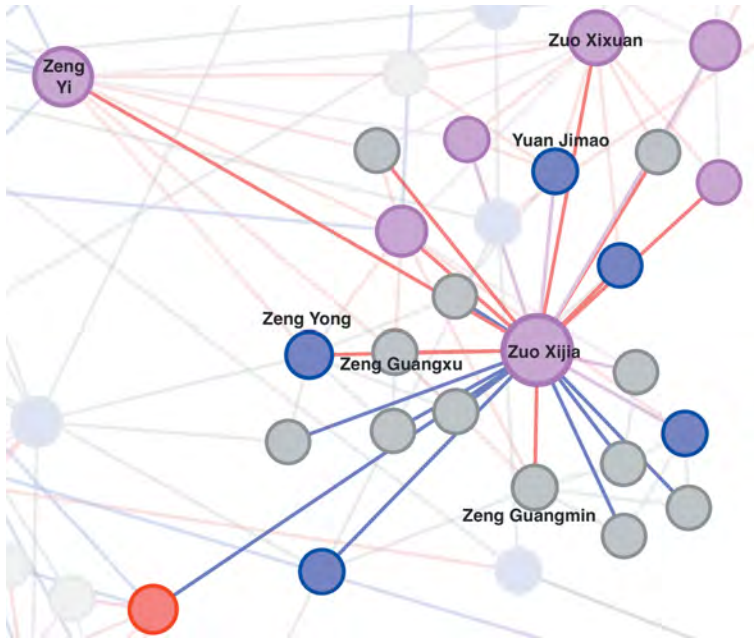


Figure 7: Cluster 4 network centered on Zuo Xijia.

Moving our attention to Cluster 5, this network illustrates the intermarriage between the Yu and Xu families, highlighting the significance of familial bonds and resources in cultivating talented women. While the networks in Clusters 1 to 4 typically stretch outwards from a core family of talented women, Cluster 5 stands out for having two centers, representing the distinct origins of talented women from both the Yu and Xu families.

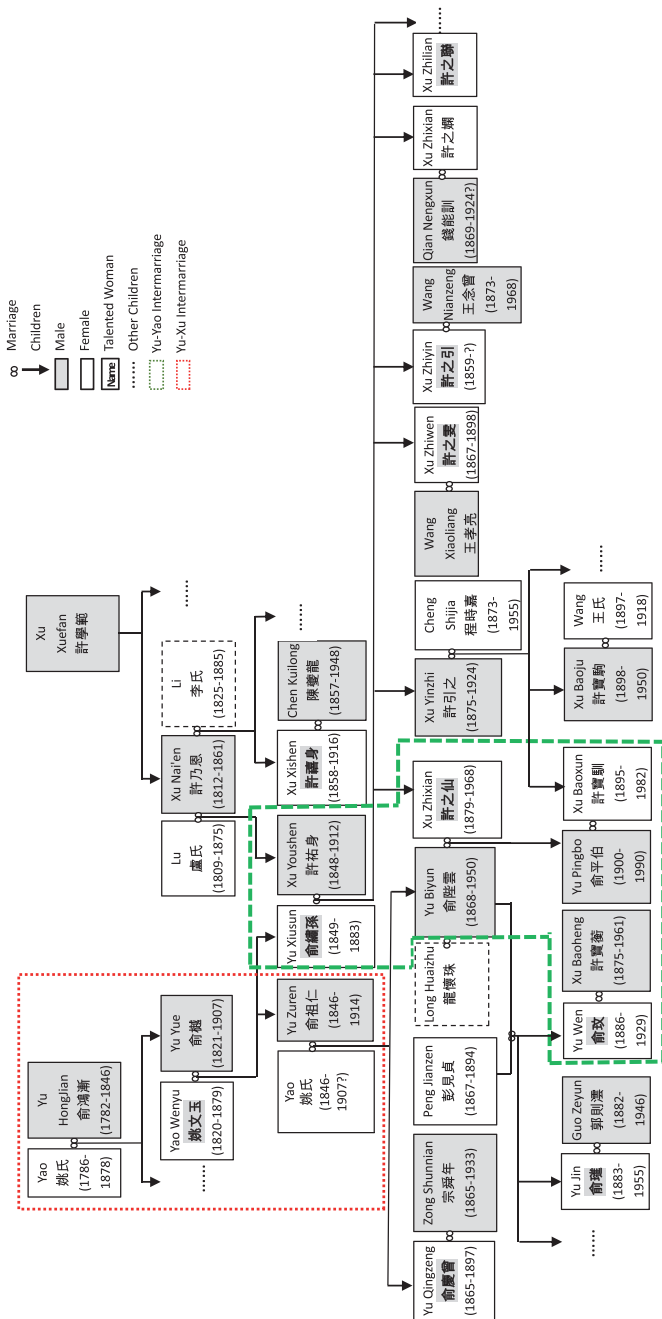


Figure 8: Yu-Yao and Yu-Xu intermarriages.

Note: Xu Baoheng (許寶衡) (1875–1961) is the grandson of Xu Baoshen (許葆身) (1816–1862), who is the cousin of Xu Youshen.

Sources: Rania Huntington, *Ink and Tears: Memory, Mourning, and Writing in the Yu Family* (Honolulu: University of Hawai'i Press, 2018), 206, 208; see Figures A-2, A-3.

The patriarch of the Yu family was Yu Yue (俞樾) (1821–1907), who came from a literati family in Zhejiang and attained his *jinshi* degree, and his wife Yao Wenyu (姚文玉) (1820–1879) similarly belonged to a literati family in Zhejiang and was his mother's niece. The two families had a history of intermarriages for three consecutive generations (see the red-dotted area in Figure 8). In large thanks to the guidance of Yu Yue, several talented women emerged in the Yu family, including his daughter Yu Xiusun (俞繡孫) (1849–1883), granddaughter Yu Qingzeng (俞慶曾) (1865–1897), and great-granddaughters Yu Jin (俞瑾) (1883–1955) and Yu Wen (俞玟) (1886–1929).²¹ Among them, Xiusun and Qingzeng were the most renowned. The former was Yu Yue's second daughter and displayed her poetic talents as early as ten years old. She married Xu Youshen (許祐身) (1848–1912) and gave birth to six daughters and two sons, but sadly passed away at the age of 34 due to illness soon after childbirth. In memory of his beloved daughter, Yu Yue published the anthology *Huifu lou xingcao* 慧福樓幸草 (*Flattened Grass of Huifu Hall*). Qingzeng, who lost her father early and was raised by her grandparents, showed a love for reciting poetry at a young age. She married Zong Shunnian (宗舜年) (1865–1933) but could not conceive, regrettably leading to mistreatment by her in-laws. She then tragically chose to end her life by consuming opium at the age of 33. In commemoration, her grandfather Yu Yue and her brother Yu Biyun (俞陛雲) (1868–1950) collected her works and published the anthology *Xiumo xuan shici gao* (繡墨軒詩詞稿) (*Poetry of Xiumo Studio*) to honor her short-lived brilliance.

On the other side of Cluster 5 is the Xu family, an eminent clan boasting many degree holders. From the patriarch Xu Xuefan (許學範) to the generation of his great-grandson, there were five *jinshi* and thirteen *juren*. The relationship between the Xu and Yu families began with the marriage of Xu Youshen, the grandson of Xu Xuefan, to Yu Xiusun, and this Yu-Xu intermarriage occurred four times over three generations (see the green-dotted area in Figure 8). Beyond being known for producing numerous degree holders, the Xu family also generously invested in the education of their daughters, and Xu Xishen (許禧身) (1858–1916), Youshen's youngest sister, was particularly renowned. Married to Chen Kuilong (陳夔龍) (1857–1948), Xu Xishen dedicated time to teaching her daughter, Chen Changwen (陳昌紋) (1889–1905), the art of composition. When Changwen tragically passed away at the young age of 17, Xishen was heartbroken and wrote numerous poems in remembrance of her daughter, which were later published by her husband. The inscriptions found within these anthologies demonstrate that Xu Xishen played a

²¹ Yu Yue's wife Yao Wenyu was also well-versed in literature, but she did not produce many works. She left behind only one set of poems as her literary legacy. Yao Wenyu 姚文玉, "Tici" 題詞 [Inscription], in *Dongqing Shushi Yingao* 冬青書室吟稿 [Poetry of Dongqing Studio], by Yan Suzhen 晏訴真 (1849).

leading role in the literary community of both the Yu and Xu families. Not only did several nieces, nephews, and in-laws contribute inscriptions to her anthologies, but she also often composed “singing harmony poems” with them. In light of the above, Xu Xishen was a remarkable figure who served as the center of the Xu talented women’s network (Figure 9).

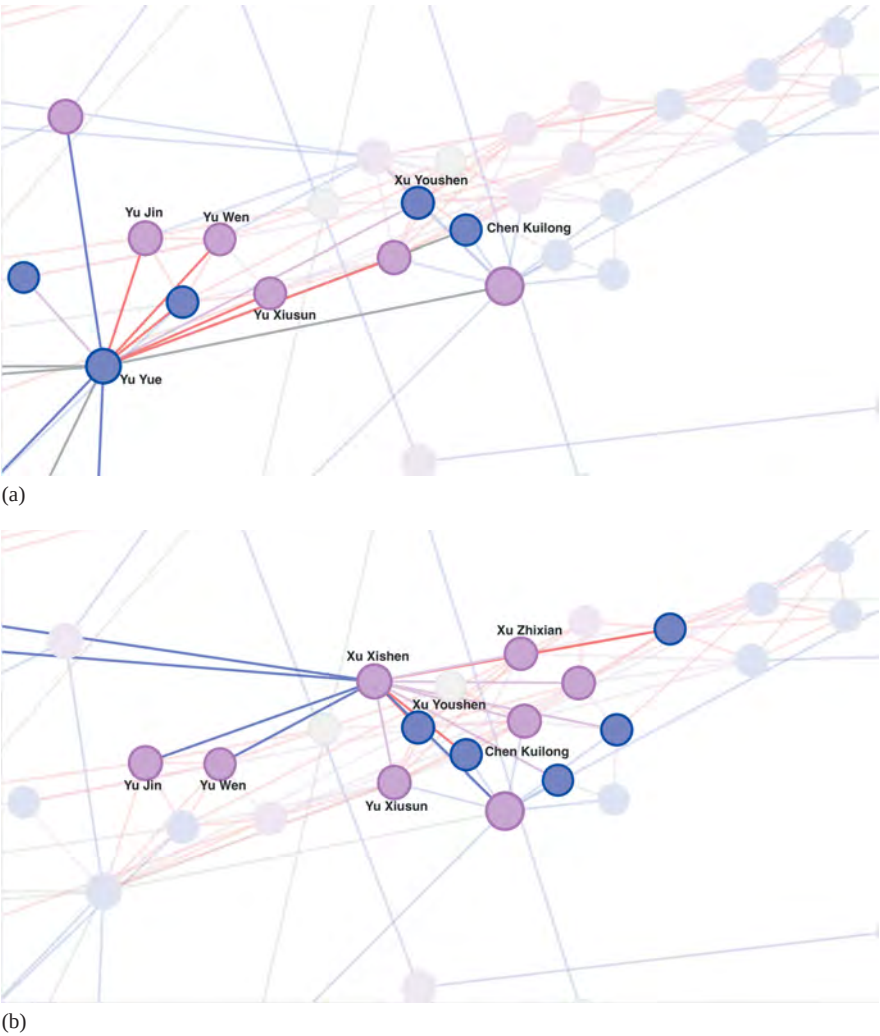


Figure 9: Cluster 5 network centered on Yu Yue and Xu Xishen.

It is worth noting that the Yu and Xu families were not just connected through marriage, but also provided significant support to one another during challenging times. For example, when Yu Xiusun passed away, her eldest child was only fourteen years old, and the youngest was just one month old. The family then decided that the eldest son, as well as the second and sixth daughters, would be raised in the house of Yu Yue, their maternal grandfather in Hangzhou. It is thus no surprise that Xu Zhixian (許之仙) (1879–1968), the sixth daughter, was arranged to marry Yu Yue's grandson, Yu Biyun. Meanwhile, the second son and the fourth and fifth daughters followed their second uncle to Yunnan; the first daughter was raised by her fourth uncle in Shandong; and the third daughter was sent to live with her aunt in Beijing.²² Another notable aspect is that while previous research on the influence of families on talented women often emphasizes vertical relationships, this network reveals the significance of horizontal relationships, namely siblings, cousins, or in-laws. In fact, the cultivation of talented women heavily relied on learning from one's sisters and/or cousins, especially when the mother felt reluctant to pass down literary skills (assuming she had developed her own) or died at a young age. When Xu Xishen's daughter passed away, for instance, her cousins reminisced about the enjoyable times they had during their childhood, which included the reciting and exchanging of poems.²³ These close familial ties, both vertical and horizontal, played a crucial part in shaping the literary abilities of these talented women.

Finally, Cluster 6 represents a different type of relationship where literary connections (blue edges) take prominence. The major figures in this group include Wu Zao (吳藻) and Ling Zhiyuan (凌祉媛) (1831–1852). Unlike the talented women discussed earlier, Wu Zao received no family support for her literary pursuits. Born in a merchant family and married into one in Renhe, Zhejiang, she cultivated her literary talents through self-learning. Figure 10 represents a social network diagram derived from her writings, revealing that Wu Zao's connections were exclusively literary in nature and devoid of familial ties, which implies that her family played no role in her accomplishments in literature. Noteworthy is the three-mode nature of this network, encompassing connections between individuals, between individuals and organizations, and between individuals and literary works. Among the nodes linked to her, nearly half are associated with literary interactions concerning the play *Qiaoying*, as indicated by the black edges in Figure 10, thereby underscoring the pivotal role of this work within her literary network. *Qiaoying* is a drama

22 Rania Huntington, *Ink and Tears: Memory, Mourning and Writing in the Yu Family* (Honolulu: University of Hawai'i Press, 2018), 155.

23 Xu Zhiyin 許之引, "Honggui du zuozhen ri wuliao jing fu fenghuai gongcheng cizheng" 紅閨獨坐鎮日無聊敬賦奉懷恭呈慈政 [Offering a poem to a benevolent aunt from the lonely and boring red chamber], in *Xieyuan yin cao* 偕園吟草 [Poetry of Xie Gardens], Xu Xishen 許禧身, (1891) *juan* 5.

primarily centered around the character Xie Xucai (謝絮才), who assumes a male guise, contemplates her own portrait in men's attire while perusing the work *Lisao* (離騷) (*Encountering Sorrow*), and ponders her existence as a woman constrained by unfulfilled potential and ambitions.²⁴ Wu Zao's brother Wu Mengjiao (吳夢蕉) shared this piece with his friends Ge Qingzeng (葛慶曾) and Wu Zaigong (吳載功), both of whom lavished high praise upon it. Wu Zaigong even dubbed it a “timeless masterpiece” and then enlisted Gu Lanzhou (顧蘭洲) to compose music for a theatrical presentation to be performed in the town square.²⁵ The play achieved enormous success, resulting in widespread acclaim and recognition.²⁶

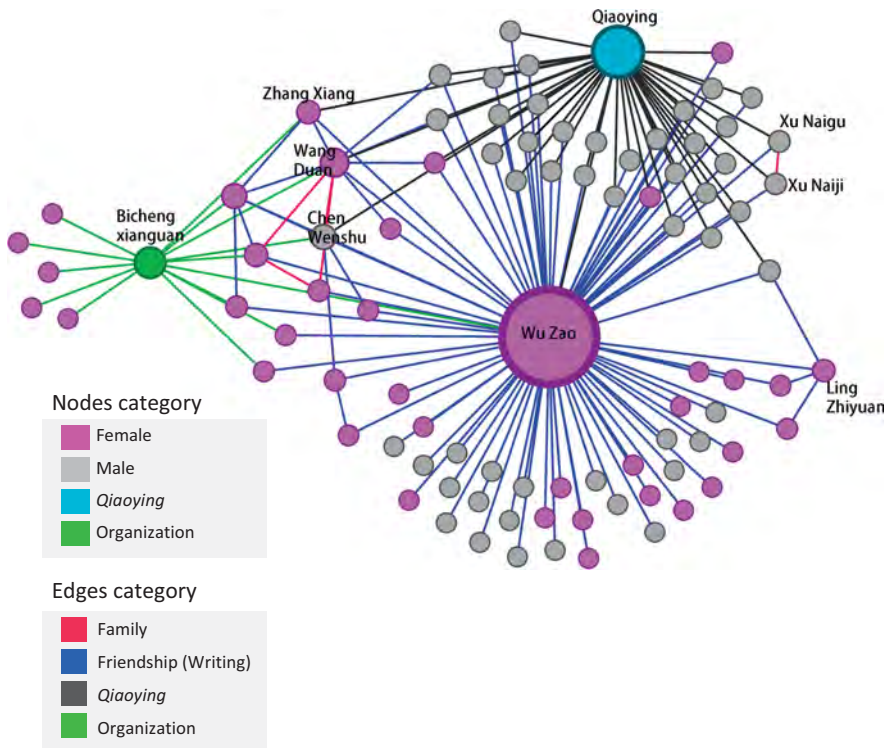


Figure 10: Social network of Wu Zao.

²⁴ For an analysis of *Qiaoying*, see Chung Hui-ling 鍾慧玲, “Wu Zao zuopin zhong de ziwo xingxiang” 吳藻作品中的自我形象 [The self-image from Wu Zao's works], *Donghai Xuebao* 東海學報, no. 37 (1996): 114–20.

²⁵ Wu Zaigong 吳載功, “Ba” 跋 [Postscript], in *Qiaoying* 齋影 [The fake image], by Wu Zao 吳藻 (1825).

²⁶ Wei Qiansheng 魏謙升, “Xu” 序 [Preface], in *Hua lian ci* 花簾詞 [Poems of the florid screen] of *Linxia yayin ji* 林下雅音集 [Collection of elegant sounds from Linxia], ed. Mao Jun 冒俊 (1884).

Subsequently, Wu Zaigong published the work and extended invitations to as many as 36 distinguished officials and scholars to contribute prefaces, including Yu Hongjian (俞鴻漸) (1781–1846), father of Yu Yue, Xu Naigu (許乃穀) (1785–1835), and Xu Naiji (許乃濟) (1777–1839), uncles of Xu Youshen and Xu Xishen. Diverging from the conventions of other literary works by female figures, this work not only embraced a dramatic script – an art form less frequented by female poets from the inner chambers – but also subverted gender norms through its narrative. What adds further intrigue is that, while many works by talented women were often published in commemoration by their families, *Qiaoying* earned its opportunity to be published due to its widespread popularity. Most of the preface authors were unacquainted with Wu Zao, resulting in minimal attention given to her virtues or personal connections; instead, their emphasis was entirely on the literary merits of the work. This approach, leveraging the praise of socially accomplished individuals to enhance both the work's visibility and the author's recognition, clearly showcases a commercial aspect, even further distinguishing it from the works produced by other female talents.

Bicheng xianguan (碧城仙館) stands as a significant node within Wu Zao's social network. The Qing dynasty witnessed a thriving culture of literary societies, which welcomed both men and women as participants, exemplified by Bicheng xianguan which was founded by Chen Wenshu (陳文述) (1771–1843) and his female disciples. Wu Zao officially became part of this gathering in 1826, but it is known that she had already exchanged poems with its members prior to her joining. As early as 1818, for instance, Wang Duan, Chen Wenshu's daughter-in-law, composed a poem on Wu Zao's painting.²⁷ In 1825, when Wu Zao published *Qiaoying*, core members of Bicheng xianguan, including Chen Wenshu, Wang Duan, and Zhang Xiang (張襄), contributed inscriptions for the work (see the nodes with blue, green, and black edges in Figure 10). Becoming a member of Bicheng xianguan further fueled Wu Zao's active involvement in literary circles. Her works were featured in several poetry collections associated with the society, such as *Xiling gui yong* 西泠閨詠 (*Poems from the Inner Chambers in Hangzhou*), *Hualin xin yong* 畫林新詠 (*New Poems on a Forest of Paintings*), and *Bicheng xianguan nüdizi shi* 碧城仙館女

27 Wang Duan 汪端, "Ti Pingxiang nüshi caiyao tu" 題蘋香女史采藥圖 [On Lady Pingxiang's painting of herbal gathering], in *Ziran haoxue zhai shi chao* 自然好學齋詩鈔 [Collected poems from Nature and Assiduousness Studio], juan 3; Chung Hui-ling 鍾慧玲, *Qingdai nüzuojia zhuan*: Wu Zao ji qi xiangguan wenxue huodong yanjiu 清代女作家專題 – 吳藻及其相關文學活動研究 [Special Topic on female writers in the Qing dynasty: Wu Zao and her literary activities] (Taipei: Lexue shuju, 2001), 51.

弟子詩 (*Poems by Female Disciples of Bicheng xianguan*).²⁸ She also nurtured literary relationships with numerous members of the society (see the pink nodes in the left half of Figure 10 connected by both blue and green edges).

It is noteworthy that the nodes indicating female figures linked to Wu Zao through literary relationships are primarily located on the left and lower sections of the network diagram, extending beyond the network of *Qiaoying*. However, Wu Zao's other works, namely *Hua lian ci* (花簾詞) (*Poems of the Florid Screen*) and *Xiangnan xuebei ci* (香南雪北詞) (*Poems of Fragrant South and Snowy North*), did not attract as many inscription writers as *Qiaoying*. The former received prefaces from three individuals, namely Chen Wenshu, Wei Qiansheng (魏謙升) (?–1861?), and Zhao Qingxi (趙慶熹) (1792–1847), while the latter only has Wu Zao's own preface. Nevertheless, within these two works, Wu Zao composed numerous poems for others, particularly her fellow talented women, a form of literary exchange which differs from what is observed in *Qiaoying* – as a cultural product, her drama required preface authors with cultural influence to ensure successful sales. From the publisher's standpoint, well-known male literati were deemed more suitable for this role. The literary exchange between Wu Zao and her female counterparts not only displays the literary prowess of women but also conveys a profound sense of female companionship, an aspect which held special significance for Wu Zao personally. Moreover, in contrast to other female poets from similar social circles, Wu Zao's poems never mention her husband or children, implying her dissatisfaction with her marital and family life.²⁹ Her poetic interactions thus offered both intellectual and emotional support, further highlighting the unique nature of her literary relationships.

Ling Zhiyuan, with numerous non-familial connections, on the surface mirrors the scenario of Wu Zao, but as our discussion suggests, the nature of these associations takes quite a different shape. She was born to a family of low-ranking official Ling Yong (凌詠) in Qiantang, Zhejiang. Under her mother's guidance, she studied *Mao shi* (毛詩) (*Mao Heng's Commentary on the Classics of Poetry*) and “Neize” 內則 (“The Pattern of the Family”) in the *Book of Rites* at the age of seven and showed a good command of writing poetry by the age of ten. When she married Ding Bing (丁丙) (1832–1899) at 20, she composed “singing harmony poems” together with Ding and encouraged him to study for “self-cultivation” rather than merely focusing on the imperial civil service examinations. Despite her marriage, Ling remained a devoted and filial daughter, frequently returning to her natal family to take care

28 Chung Hui-ling 鍾慧玲, “Chen Wenshu yu Bicheng xianguan nǚdizi de wenxue huodong” 陳文述與碧城仙館女弟子的文學活動 [The literary activities between Chen Wenshu and his female students in the Bicheng xianguan], *Donghai zhongwen xuebao* 東海中文學報, no. 13 (July 2001): 153–7.

29 Chung, “Wu Zao zuopin zhong de ziwo xingxiang,” 109–10.

of her ailing mother. In a heartfelt expression of love and grief, Ding lamented that she had been living with her parents longer than with her in-laws and that she even made vows at local shrines to be a substitute for her sickly mother. Miraculously, Ling's mother gradually recovered, while Ling suddenly became very ill and died at the age of 22. To commemorate his wife's virtue and talents, Ding printed a collection of her poems in the anthology *Cuiluo ge shici gao* 翠螺閣詩詞彙 (*Poems of Cuiluo Pavillion*), which intended to "affirm his deep love" and "ensure her 'immortality' through her words [yan 言]." ³⁰

The anthology received contributions from 64 individuals, with only 4 of them being family members, namely her husband Ding Bing, younger brother Ling Dechu (凌德初), paternal uncle Ling Yu (凌譽), and maternal uncle Zhu Cheng (朱城). Unlike the networks discussed earlier, Ling Zhiyuan appears to be the only talented woman in the Ling family despite receiving early training from her mother and studying with her sister Ling Qiangyuan (凌蕤媛) and cousin (Ling Yu's daughter) Ling Xinyuan (凌苾媛). ³¹ The reality is that without her husband's dedication to the publication, the name and talents of Ling Zhiyuan may very well have faded into obscurity. Considering the motivations driving Ding, it is interesting that the occasions of birth and death often prompted men's urgency in publishing the works of women that had been close to them.

But what really sets Ling Zhiyuan apart is the participation of women in her anthology, with Ding Bing even creating a special section entitled "Inscriptions by Talented Women": 2 women wrote prefaces and another 11 wrote inscriptions. Among these 13 women, one was from Yanghu, Jiangsu; a second hailed from Hanyang, Hubei; and the remainder were all from Hangzhou, Zhejiang. As Grace Fong points out, while all the male preface writers appreciated the efforts of Ding Bing, the female writers instead focused on Ling Zhiyuan's skills and praised her as standing out from the local literary community. ³² Most of the female contributors were recognized female poets and had their works published elsewhere outside of Ling's anthology. Ding Bing's intention to seek out talented women to pen inscriptions was evidently to promote Ling Zhiyuan as a star through the voices of her peers and cohorts.

The analysis above highlights key patterns in elite women's social networks during the early nineteenth century. Firstly, the presence of black nodes across all clusters, denoting talented women from the Qianlong era, is notable. These women,

³⁰ Grace S. Fong, "The Life and Afterlife of Ling Zhiyuan (1831–1852) and Her Poetry Collection," *Journal of Chinese Literature and Culture* 1, no. 1–2 (November 2014): 142.

³¹ Ling Yu 凌譽, "Ba" 跋 [Postscript], in *Cuiluo ge shici gao* 翠螺閣詩詞彙 [Transcribed poems of Cuiluo Pavillion], by Ling Zhiyuan.

³² Fong, "The Life and Afterlife of Ling Zhiyuan," 142–3.

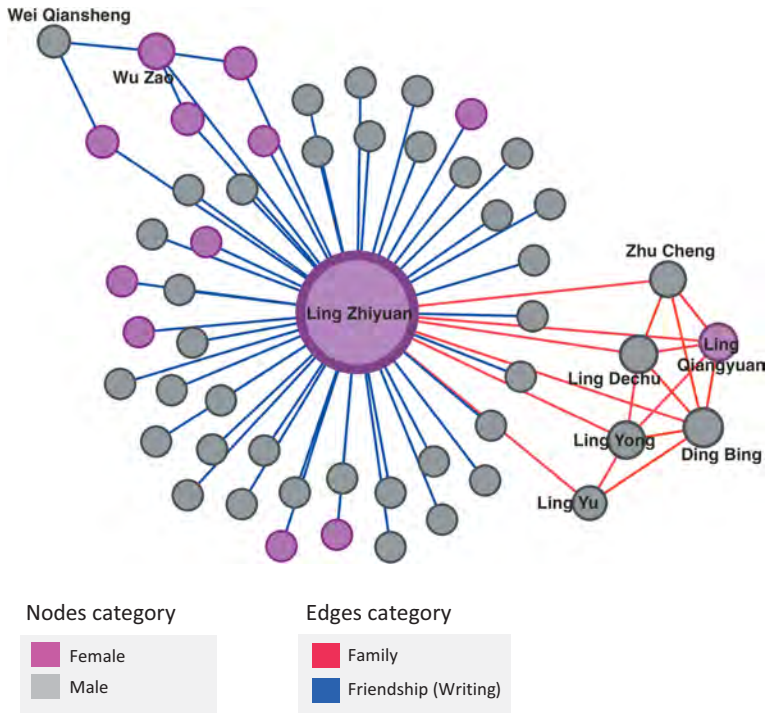


Figure 11: Social network of Ling Zhiyuan.

serving as predecessors to the subjects of this study, not only took on the primary responsibility of educating gifted girls but also fostered a communal atmosphere aimed at nurturing their intellectual development and potentially broadening the social networks of elite women. Secondly, the significance of support and patronage from degree holders, particularly in the realms of collecting and publishing women's literary works, is evident. Indeed, the enthusiasm of these patrons for promoting women's writings is decisive in determining their visibility and recognition. The extent of their connections within literati circles directly correlated with the circulation possibilities of these works. Thirdly, notwithstanding the pivotal role played by male degree holders, a subset of women persisted in their writing pursuits and efforts to secure publication. Some relied on their writing prowess for sustenance due to a lack of support from male guardians, while others, exemplified by figures like Wu Zao, actively sought to showcase their talents in the public sphere. Finally, these elite women were much more interconnected than previously believed. While those in Clusters 1 and 2 appeared more internally connected, counterparts in other clusters expanded their networks more extensively. For instance,

Zhang Qieying in Cluster 3 had ties with Zuo Xixuan in Cluster 4, while Wu Zao in Cluster 6 was associated with the Yu and Xu families in Cluster 5. These trends persisted into modern times, aligning with new developments and coinciding with the increasing opportunities available to women in the public domain.

Transformations of Talented Women's Social Networks

In contrast to the social networks of talented women prior to the outbreak of the Taiping Rebellion, the post-Taiping era presents a different structure where female teachers, who enjoyed a certain fluency in classical writings, replaced conventional talented women as the main figures within networks, as indicated in Figure 2. While a few of these talented women resorted to teaching jobs to supplement their income during the reigns of the Jiaqing to Daoguang emperors, the transition often signified a lack of family support and was regarded as a less desirable means of earning a living. In the late Qing period and Republican era, however, being a teacher evolved into a new identity for women, symbolizing independence and autonomy. Consequently, female teachers relied more on connections outside the family, which, within our analysis, has led to a reduction in the number of red and pink edges on the left side of the network diagram.

Furthermore, the transition from the pre-Taiping to post-Taiping period brought significant changes in the networking patterns of talented women. Whereas pre-Taiping talented women often relied on male degree holders, such as Zuo Zongtang in Cluster 1, Liang Zhangju in Cluster 2, and Yu Yue in Cluster 5, to establish ties with the outside world, their post-Taiping counterparts – particularly late Qing and Republican female teachers – adopted a different approach by relying on organizations for networking. These organizations can be broadly categorized into three types: revolutionary societies, women's rights associations, and educational institutions where women either studied or taught. To best illustrate this shift, we use the examples of Lü Bicheng (呂碧城) (1883–1943), Zhang Mojun (張默君) (1884–1965), and Chen Xiaocui (陳小翠) (1902–1967).

Lü Bicheng was born into a literati family,³³ where her father Lü Fengqi (呂鳳岐) (1837–1895) attained *jìnshi* as well as holding various positions in the court,

33 For Lü Bicheng's life, see Li Baomin 李保民, "Lü Bicheng nianpu" 呂碧城年譜 [Chronicle of Lü Bicheng's life], in *Lü Bicheng ji* 呂碧城集 [Anthology of Lü Bicheng], by Lü Bicheng (Shanghai: Shanghai guji chubanshe, 2015), 801–24.

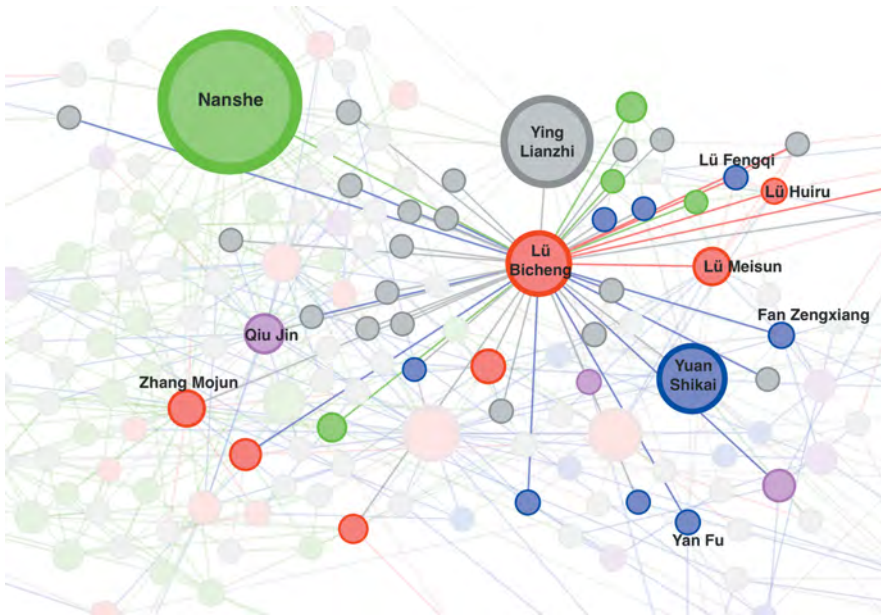


Figure 12: Social network of Lü Bicheng.

and her mother Yan Shiyu (嚴士瑜) came from an even more prestigious clan with several degree holders and officials. Lü Bicheng and her sisters, like many of the talented women discussed in this chapter, had received classical training and displayed their talents in both writing and painting from an early age. However, the untimely loss of their father and brothers disrupted the conventional trajectory of the lives of these elite women. Unable to secure their inheritance, the surviving widow had no choice but to return to her natal family with her young daughters. Lü's fiancé thus broke the marriage contract, leaving her to seek independence and eventually decide to remain celibate for the rest of her life.

Living such a life of autonomy invariably required building extensive connections, and Lü Bicheng did just that, as evidenced by her social networks in several areas, as revealed in Figure 12. To begin, she came to know Manchu journalist and publisher Ying Lianzhi (英欽之) (1867–1926), who became her steppingstone into the public arena by publishing Lü's poems in *Dagong bao* (大公報) and promoting her literary fame. Largely through Ying, she established connections with officials and scholars (see the blue nodes in Figure 12) such as Yuan Shikai (袁世凱) (1859–1916), Fan Zengxiang (樊增祥) (1846–1931), and Yan Fu (嚴復) (1854–1921). These links not only provided her with financial support to launch a girls' school in Tianjin but also led to her appointment as the secretary of President Yuan. Ying

Lianzhi was essentially the most crucial connection in the early development of Lü's career.

Apart from her male associations, Lü Bicheng's public persona also led her to establish connections with talented women (see the pink and red nodes in Figure 12), exemplified best by Qiu Jin. After reading Lü's articles in *Dagong bao*, Qiu Jin paid her a visit, and as if old friends, the two instantly felt a connection. Qiu Jin invited Lü to join her in Japan for their revolutionary activities, and while Lü declined the invitation, she wholeheartedly supported Qiu Jin's endeavors by writing a foreword for her periodical *Zhongguo nübao* 中國女報 (*Chinese Women's Journal*) in 1907. Years after Qiu Jin's execution by the Qing court, Lü Bicheng composed a poem in her memory: "After countless cycles of life and death, shame lingers even beyond the grave; the elegant wanderer, burdened with sorrow, passes by the tomb's entrance."³⁴ The poem reflects the profound impact that Qiu Jin had on Lü Bicheng, acknowledging the sacrifices and struggles of a brave and talented woman who fought for her ideals even in the face of adversity.

There are several notable organizations (see the green nodes in Figure 12) within Lü Bicheng's social network, including Nanshe (南社) (Southern Society) and Columbia University. Originally, Nanshe started as a gathering of literati who supported the anti-Manchu revolution during the late Qing period, but over time, it grew to become the largest literary society in modern Chinese history, boasting more than a thousand members. Lü joined in 1914 and published some of her works in the collection *Nanshe congke* 南社叢刻 (*Collection of the Southern Society*). During her involvement with Nanshe, Lü encountered Zhang Mojun, a prominent, talented woman who was able to stand out even among her contemporaries. Although the exact extent of their relationship eludes us, both were present at Nanshe meetings in August 1914 and April 1917, and they even traveled together to Suzhou in February 1917. Additionally, both women were alumnae of Columbia University, with Zhang being enrolled from 1918 to 1920 and Lü being registered at the university in 1921.

Directly compared with Lü Bicheng, Zhang Mojun relied on her family members, especially her father and husband, to a higher degree to build her social networks throughout her life.³⁵ Born into a literati family in 1884, Zhang began to study the

34 Lü Bicheng 呂碧城, "Xiling guo Qiunüxiaci ci hanyun yun" 西泠過秋女俠祠次寒雲韻 [Visit Qiu Jin's temple in Hangzhou and use the rhyme of hanyun], in *Lü Bicheng ji*, 283.

35 For Zhang Mojun's life, see Gao Mengbi 高夢弼, "Daning tang nianpu" 大凝堂年譜 [Chronology of Daning Hall], in *Zhang Mojun xiansheng wenji* 張默君先生文集 [Anthology of Zhang Mojun], ed. Zhongguo guomindang zhongyang weiyuanhui dangshi weiyuanhui 中國國民黨中央委員會黨史委員會 (Taipei: Zhongguo guomindang zhongyang weiyuanhui dangshi weiyuanhui, 1983), 515–55.

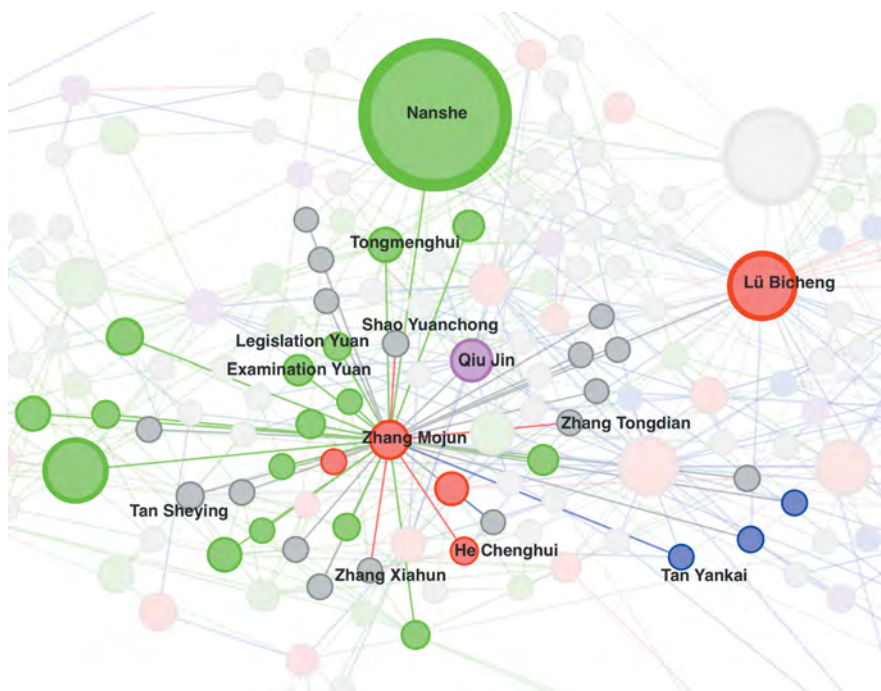


Figure 13: Social network of Zhang Mojun.

Classics of Poetry at the tender age of three and learned to compose couplets at the age of four under her mother He Chenghui's (何承徽) (1858–1941) guidance. Her father Zhang Tongdian (張通典) (1859–1915) was passionate about social and political reforms and thus played a significant role in shaping her worldview, an influence which led her to align with the anti-Manchu revolution and join Tongmenghui (同盟會) (Revolutionary Alliance) in 1906. Zhang Mojun further embraced her revolutionary spirit by becoming the editor of the revolutionary newspaper *Dahan bao* 大漢報 (*Great Han News*) and organizing the Girls' Militia (Nüzi junshi tuan 女子軍事團) in 1911. However, after the 1911 Revolution, her focus shifted towards education, once again inspired by her father and his dedication to learning, who had established several schools, including Yangzheng School (Yangzheng xuetang 養正學堂), Yangzheng Girls' School (Yangzheng nüshu 養正女塾), Hunan School at Nanjing (Hunan lü Ning gongxue 湖南旅寧公學), and Wanjiang Middle School (Wanjiang zhongxue 皖江中學). In 1901, he appointed his wife and daughter as teachers at Yangzheng Girls' School, marking the beginning of Zhang Mojun's long and distinguished career in education (See the green nodes in Figure 13).

Zhang Mojun's husband, Shao Yuanchong (邵元冲) (1890–1936), was also a crucial figure in her social network, especially within political circles. Mirroring many Chinese men in the late Qing period, Shao passed the first level of the imperial civil service examinations while receiving his education in the new style of schools popular at the time. He also joined Tongmenghui in 1906, but it seems that he and Zhang were not yet acquainted at this point. In 1911, Shao went to Japan to further his studies, and after returning to China following the 1911 Revolution, he became actively involved in the political arena. He took the editorship of Guomindang's newspaper, for example, and participated in the party's "Second Revolution." As he climbed the ladder within the party, he held various important positions, including serving as Sun Yat-sen's confidential secretary, a member of the Central Executive Committee, head of the Ministry of Propaganda, and eventually president of the Legislative Yuan. It was after their marriage in 1924 that Zhang Mojun's political career began to take shape, with her husband playing a significant role in her advancement. For instance, when Shao served as the mayor of Hangzhou City in 1927, he appointed Zhang as the director of education, and in 1929, when Shao held the position of vice chairman of the Selection Committee of the Examination Yuan, Zhang was enlisted with a focus on educational affairs. Furthermore, anytime Shao was overwhelmed with his legislative duties, Zhang was recommended to take his place.

Despite Zhang Mojun's entry into a political career being facilitated by her husband's connections, once she had entered said circles, she skillfully extended and strengthened her networks on her own, which would prove to be particularly important after her husband was assassinated in 1936. As the Republic of China transitioned into a constitutional government in 1946, Zhang Mojun's capability was acknowledged, and she was appointed as a member of the examination committee and elected as a representative of the National Congress. After relocating to Taiwan, she continued to actively engage in political and social activities, demonstrating her commitment to public service, and she even served on the Central Committee of the Guomindang. At her 79th birthday celebration, over 1,400 people attended, including the vice president, who left their signatures after an inscription penned by Yu Youren (于右任) (1879–1964). The above exemplifies that Zhang Mojun's recognition and influence were not merely derived from her status as the wife of Shao Yuanchong; instead, she earned respect and admiration through her own dedicated efforts and accomplishments.

Another significant figure that unveils the transformations in talented women's culture is Chen Xiaocui, whose background rivals that of Lü Bicheng and Zhang

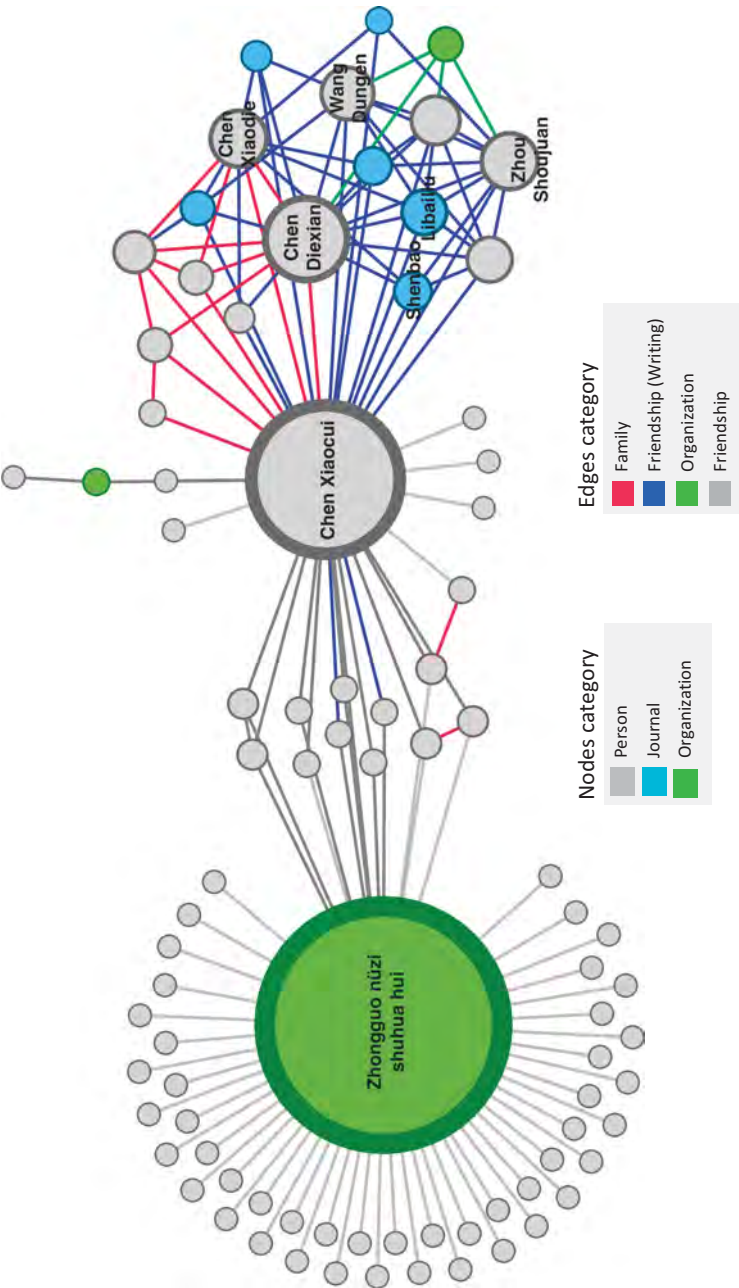


Figure 14: Social network of Chen Xiaocui.

Mojun.³⁶ Her father, Chen Diexian (陳蝶仙) (1879–1940), was a renowned novelist responsible for several bestsellers and held an editorship at several significant literary periodicals and newspaper columns. Xiaocui's mother, Zhu Shu (朱恕), was also a writer and took on the role of tutoring their children when her husband was away. Growing up in this intellectually rich environment, Chen Xiaocui received a classical literary education. At the age of ten, she had already learned to compose couplets, and by thirteen, she was writing letters on behalf of her mother, all without formal schooling. Before her marriage in 1927, Chen was even contributing to the family's income through writing, alongside her father and brother, and proving to be adept in various endeavors, also assisting in producing perfume at her father's business Jiating gongyeshe (家庭工業社). Given her family's literary background, it should come as no surprise that most of Chen's works can be found in journals edited by her father, including *Nüzi shijie* 女子世界 (*Women's World*), *Youxi zazhi* 遊戲雜誌 (*Game Magazine*), *Wenyi congbian* 文藝叢編 (*Compiled Literature and Art*), and "Ziyu tan" 自由談 ("Free Discussion"), a well-known literature column in *Shenbao* 申報.

Thanks to her father's esteemed reputation within certain literary circles, particularly in the community of the Mandarin Ducks and Butterflies (yuanyang hudie 鴛鴦蝴蝶) literature, Chen Xiaocui was able to establish valuable connections with literati in this school of writing. For instance, Wang Dungen (王鈍根) (1888–1951), a colleague and close friend of her father, dedicated an entire column of his series titled "A Brief History of Famous Authors of this Weekly" solely to Xiaocui. Additionally, Zhou Shoujuan (周瘦鵑) (1895–1968), a dear friend of Diexian, played a significant role in promoting Xiaocui's literary name by publishing her poems in various periodicals such as *Banyue* 半月 (*The Half Moon Journal*), *Ziluolan* 紫羅蘭 (*Violet*), *Libailiu* 禮拜六 (*Saturday*), and *Xin jiating* 新家庭 (*New Family*). Furthermore, Chen Xiaocui engaged in poetic exchanges with Zhou and participated in discussions about the esthetics of poetry, demonstrating that Xiaocui inherited not only her family's writing talent but also the invaluable social relationships that furthered her literary career (see Figure 14).

At the age of 25, Chen Xiaocui agreed to her parents' arranged marriage and wed Tang Yanqi (湯彥齋) (1901–1952), whose grandfather Tang Shouqian (湯壽潛)

36 For Chen Xiaocui's life, see Huang Jin-chu 黃錦珠, "Xin shidai de guixiu zuojia: Chen Xiaocui qiren qishi" 新時代的閨秀作家：陳小翠其人其事 [A literary woman of the new era: The life and times of Chen Xiaocui], *Jindai Zhongguo Funushi Yanjiu* 近代中國婦女史研究33 (June 2019): 1–52; Liu Mengfu 劉夢芙, "Ershi shiji chuantong wenxue de yushu qihua: Chen Xiaocui zuopin zonglun" 二十世紀傳統文學的玉樹琪花—陳小翠作品綜論 [The jade trees and rare flowers in the traditional literature of the twentieth century: An overview of Chen Xiaocui's works], in *Cuillou Yincuo* 翠樓吟草 [Poetry of Cui Hall], by Chen Xiaocui 陳小翠 (Hefei: Huangshan shushe, 2010), 1–90.

(1856–1917) was the first governor of the Zhejiang military government during the 1911 Revolution. Although this marriage was viewed as an opportunity for upward social mobility for the family, Chen was discontent with her life and eventually requested a separation after giving birth to their daughter. Returning to her natal family, Chen found more freedom to pursue her public ventures, and together with her painter friends in 1934, she founded the Chinese Women's Calligraphy and Painting Society (Zhongguo nǚzi shuhua hui 中國女子書畫會). This was a groundbreaking painter's association, in large part because it was exclusive to women, reaching a peak membership of 200 individuals. And regarding its activities, it held regular art exhibitions and actively promoted art education. Chen enthusiastically served on the executive committee and took up the editorship of the society's magazine. In addition, she also joined the Society of Preserving Classical Writings (Cunwen hui 存文會), launched by Jiang Kanghu (江亢虎) (1883–1954), to advocate for the inclusion of classical Chinese in middle school curricula.³⁷ All in all, these endeavors showcase Chen Xiaocui's commitment to promoting art and culture, as well as her dedication to advancing the education of her time.

As “the last generation of talented women writers,” Lü Bicheng, Zhang Mojun, and Chen Xiaocui made diverse life choices as they stepped into modern times. Lü Bicheng remained dedicated to writing in classical Chinese while embodying the spirit of an “independent new woman.” During her early years, she established girls' schools and later immersed herself in the study of Buddhism and advocated vegetarianism. Zhang Mojun, walking a different path, fervently embraced the revolutionary cause and wholeheartedly championed women's education. She held public office for an extended period and became an exemplary figure in the political realm, blazing a trail for women in politics. Meanwhile, Chen Xiaocui actively published poems and essays in print media and excelled in the world of painting, showcasing her multifaceted talents and contributions to the arts.

Despite the differing trajectories of their lives, these talented women share a number of common traits: First, family resources were crucial in their upbringing, especially the career paths of their fathers. All three fathers came from literary families themselves, which likely provided their daughters with an orientation from which to follow. Although the early death of Lü Bicheng's father prevented her from growing up under his wing, he had earned an imperial degree and embarked on an official career. Zhang Mojun's and Chen Xiaocui's fathers, on the other hand, initially aspired to pass the imperial civil service examinations during their youth but eventually abandoned that pursuit after the first level of testing, opting instead to work in various fields. Zhang Mojun's father leaned towards rev-

37 *Shenbao* 申報, April 22, 1935, p. 12.

olution and became involved with the Tongmenghui, an influence on Zhang Mojun which cannot be overstated. Chen Xiaocui's father, meanwhile, engaged in editing various publications, publishing poetry, essays, and novels while also running businesses, which exposed Chen Xiaocui to publishing works in print media from a young age. Despite varying to certain degrees, these family backgrounds nurtured their talents and shaped their interests and endeavors, leading to profound results.

Secondly, all three made unconventional marriage choices. In traditional Chinese society, women typically married and had children at a young age, to the extent that becoming a grandmother in one's thirties was not unusual. However, Zhang Mojun married at the age of 40, which was considered markedly late by conventional standards. Although Chen Xiaocui married at the age of 25 under her parents' arrangement, a seemingly traditional marriage pattern, she took the initiative to negotiate a divorce after giving birth to her daughter. Lü Bicheng, on the other hand, remained unmarried throughout her life. Their decisions to marry late, divorce, or even remain unmarried provided them with greater freedom to develop outside of the traditional confines of marriage and family life. Before getting married, Zhang Mojun was deeply involved in revolutionary activities, worked as a teacher, and even pursued her studies abroad. Following her divorce, Chen Xiaocui became active in the Shanghai art scene while continuing her poetry and literary compositions. As for Lü Bicheng, not being tied down by marriage allowed her to delve into the study of Buddhism, advocate for animal protection, and spend extended periods living or traveling abroad in the United States, France, Switzerland, Italy, Austria, Germany, the United Kingdom, Singapore, Thailand, and others. These unconventional choices allowed them to pursue their interests, careers, and passions without the typical prescribed societal constraints, making them exceptional figures in the changing landscape of women's roles in modern China.

Conclusion

It is generally believed that the culture of talented women began gradually declining with the rise of the Vernacular Literature Movement and revolutionary literature after reaching its pinnacle just before the late Qing dynasty. This research, however, shows that classical poetry – a common marker of the talented woman – and revolutionary undertakings – often linked to the new woman – were not incompatible and that women operating in this time of transition could simultaneously retain their talents in classical writing and pursue new ideals.

Beyond this slightly broader conclusion, however, this chapter has demonstrated that talented or elite women in two defined eras, namely the pre- and

post-Taiping Rebellion periods, employed different patterns in establishing their social networks. First, women in the late Qing period had more connections with men outside of their kinship groups. Before the Taiping Rebellion, apart from Wu Zao and Ling Zhiyuan, the male figures appearing in the networks of talented women (especially key nodes) were mostly male relatives. However, during the post-Taiping Rebellion period, talented women largely moved towards leaning on men unrelated to them, such as Lü Bicheng with Ying Lianzhi, Fan Zengxiang, and Yuan Shikai; Zhang Mojun with Chen Sanli (陳三立) (1853–1937), Tan Yankai (譚延闓) (1880–1930), and Li Yuanhong (黎元洪) (1864–1928); and Chen Xiaocui with Wang Dungen, Zhou Shoujuan, and Zheng Yimei (鄭逸梅) (1895–1992). These figures in their lives considerably expanded their social circles and provided resources for their development in the public sphere; but perhaps most notably, by being unrelated to these men, talented women of the late Qing era perhaps enjoyed more autonomy, as male relatives seemed to provide the most resources only at the death of a beloved mother, wife, daughter, etc.

Furthermore, during the late Qing period, talented women participated in a greater number of organizations, and the nature and significance of these societies differed from their earlier counterparts. Prior to the Taiping Rebellion, women's involvement in organizations was primarily in the form of family-based or social clubs. For instance, the Autumn Red Club (Qihong yinshe 秋虹吟社) was a female poetry society formed around the core of the Xu Yanreng (許延礪) and Xu Yanjin (許延錦) sisters, along with other female relatives and friends. Bicheng xian-guan was a mentor-student group led by Chen Wenshu and his disciples. In other words, these organizations relied on pre-existing relationships for their formation. However, starting in the late Qing period, organizations emerged that moved beyond these family and regional boundaries and had a more public nature; that is, as long as they went through established membership procedures, anyone could join, evidenced by Nanshe, which had both Lü Bicheng and Zhang Mojun in its ranks. Moreover, talented women during the late Qing period actively organized more social groups than before, gathering the strength of participants to achieve reform or promotional goals. For example, Lü Bicheng established the Chinese Animal Protection Association, Chen Xiaocui founded the Chinese Women's Calligraphy and Painting Society, and Zhang Mojun formed various women's rights groups. They not only relied on these organizations to expand their social connections but also consciously placed themselves at the core of these networks.

Lastly, talented women during the late Qing dynasty skillfully utilized new media as a platform for their writings, and some even took the initiative to publish their own magazines, serving as editors and gaining control over public discourse. Prior to this period, the publishing industry, including editing and printing, was dominated by men. Even someone like Wu Zao, who diligently wrote and

befriended literary peers, still needed to rely on male sponsorship for publishing. However, with the emergence of new media, publishing channels increased significantly, and the costs were greatly reduced. Although having a male intermediary to persuade editors made it easier to get published, it was not entirely impossible to directly submit manuscripts to newspapers and magazines for publication. These new media platforms thus became the most effective stages for expanding their social networks. It can also be argued that in this transitional phase, the talented women of the late Qing period transformed the organizations and media they controlled into resources for their social networks. This, in turn, allowed them to continue their artistic and literary pursuits, which closed the virtuous cycle.

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Technocracy and Technostructure in Nationalist China: Expert Rule or Rule over Experts?

Introduction

In 1924, a young Chinese man received his degree in mining engineering from Pittsburgh University. He was part of a wider movement that, beginning about two decades earlier, had Chinese students seeking education abroad, especially in the United States. Like many, the young man had picked a practical field of study to help his home country.¹ Before returning to China, he decided to work in the local Pennsylvania mines to gain additional experience. He admired the management system he observed: work processes were constantly measured, assessed, and improved. The American system emphasized efficiency, waste reduction, and practical results. The young engineer realized that not just his professional training but also the associated mindset would prove beneficial to reconstructing the Chinese Republic.²

The young man was Chen Lifu (陳立夫) (1900–2001). Chen eventually became one of the most influential techno-scientists in the government. He ultimately led the Ministry of Education, where he attempted to implement the doctrines of efficient scientific management. At first glance, Chen's credentials, way of thinking, and position inside the government make him a likely candidate for the designation “technocrat.”

Literature emphasizes the high influence engineers wielded in the early twentieth century. Studies describe the arrival of professional engineers as a new status group. Hailed as efficient reformers and rational “heroes,” they became a vital

1 Thorben Pelzer, *Engineering Trouble: US–Chinese Experiences of Professional Discontent, 1905–1945* (New York, Leiden: Brill, 2023), 24–51; Weili Ye, *Seeking Modernity in China's Name: Chinese Students in the United States, 1900–1927* (Stanford: Stanford University Press, 2001), 50–80.

2 Li-fu Ch'en, *The Storm Clouds Clear over China: The Memoir of Ch'en Li-fu, 1900–1993*, with the assistance of Sidney H. Chang, and Ramon H. Myers (Stanford: Hoover Institution Press, 1994), 18–25, 148.

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technical elite in capitalist and state-led economies, putting their mark on modern construction and infrastructure.³ However, according to political scientists, it took another 50 years and multiple political upheavals until a “technocratic turnover” inside the highest ranks of the Chinese government occurred. The number of engineers in power peaked during the 1990s when Jiang Zemin (江澤民) (1926–2022) – himself an electrical engineer – led the country. When his successor Hu Jintao (胡錦濤) (b. 1942) assumed power, 34% of the Central Committee, 75% of the Politburo, and 100% of the Standing Committee were trained engineers.⁴ Was this emphasis on rationalist governance ideals, reflected by the choice in personnel, a new phenomenon, or does the much earlier ascent of engineers like Chen Lifu point to the existence of a first technocratic moment in the Republican period?

After all, the rise of highly influential technological government institutions in the 1930s, most prominently the National Resources Commission (*Guojia ziyuan weiyuanhui* 國家資源委員會), points to an early emphasis on technocratic forms of governance. Two well-received publications, “Engineering China” and *Engineering the State*, discuss professional engineer involvement in these state institutions.⁵ In contemporary discourse, the concept of “engineering” is often (mis)used metaphorically, for instance, in the terms “social engineering,” “political engineering,” and “financial engineering.” Used colloquially, the term does not necessitate the involvement of actual, professional engineers. Nonetheless, the focus on the activity of “engineering” in the historical analysis of “technocracy” has led to the conception that actual, professional engineers played a significant role in steering the Nationalist state and that these engineers formed an influential group within the political elite. But how influential were engineers in the Republican era? Was the

3 On the rise of engineers in the early twentieth century, see, e.g., Frank Uekötter, “Techniker an der Macht: Der Ingenieur-Politiker im 20. Jahrhundert,” *Historische Zeitschrift* 306, no. 2 (2018): 399; William E. Akin, *Technocracy and the American Dream: The Technocrat Movement, 1900–1941* (Berkeley, Los Angeles, London: University of California Press, 1977); Lino Camprubi, *Engineers and the Making of the Francoist Regime* (Cambridge: The MIT Press, 2014); Edwin T. Layton Jr., *The Revolt of the Engineers: Social Responsibility and the American Engineering Profession* (Baltimore, London: The Johns Hopkins University Press, [1971] 1986); Monika Renneberg and Mark Walker, “Scientists, Engineers and National Socialism,” in *Science, Technology and National Socialism*, ed. Monika Renneberg and Mark Walker (Cambridge: Cambridge University Press, 1994).

4 Cheng Li and Lynn T. White III, “The Sixteenth Central Committee of the Chinese Communist Party: Hu Gets What?” *Asian Survey* 43, no. 4 (2003): 581.

5 David Allen Pietz, *Engineering the State: The Huai River and Reconstruction in Nationalist China, 1927–37* (New York, London: Routledge, 2002); William C. Kirby, “Engineering China: Birth of the Developmental State, 1928–1937,” in *Becoming Chinese: Passages to Modernity and Beyond*, ed. Wen-hsin Yeh (Berkeley, Los Angeles, London: University of California Press, 2000).

influence confined to significant individuals, or did it extend to the profession as a whole?

To approach this question, I first discuss and problematize existing notions of technocracy and technostructure and argue why a distinction between (1) a professional and (2) a political elite is productive. I expect the findings to substantiate the necessity of distinguishing between (1) the principles of technocracy, (2) bureaucrat-technocrats, and (3) the rule of technicians when discussing the influence of the engineering profession. I then utilize a data-driven approach to identify the so-called technostructure from the perspective of Republican-era engineers. I use a large prosopographic dataset to analyze engineer involvement within this technostructure. Then, I analyze the engineers' career patterns to substantiate what role their biographies played in arriving at different positions of influence and becoming part of an elite. Finally, I focus on the set of engineers who assumed political offices and locate them in the larger network of the engineering profession to identify particularly influential sub-communities within the engineering scene.

The aim of the chapter is not to cast doubt on the importance of large technical government institutions like the National Resources Commission, nor to deny the significance of individual prominent engineers. The quantitative approach also remains agnostic about the extent to which engineers may have influenced government decisions through their daily practice without holding offices. The study can, however, present an idea about the extent to which engineers, as a profession, penetrated the state organizations and, consequently, what role these institutions played in their careers. The article thus evaluates, on the one hand, the prevalence of engineers within the technical state institutions and, on the other hand, the importance of these institutions for the engineering profession. I argue that although the paradigms of engineers shaped the technostructure, the participation and influence of the profession were less comprehensive than previously thought.

Methodology

To shed light on the level of involvement of professional engineers within the Nationalist government institutions, the chapter applies network and sequence analysis to the Chinese Engineers Relational Database (CERD), which contains the individual biographies of over 17,000 professional engineers who were active in the Republican period (1912–1949).⁶ The database features engineers as defined by

⁶ Thorben Pelzer, Elisabeth Kaske, and Hailian Chen, "Chinese Engineers Relational Database (CERD)," Zenodo, <https://home.uni-leipzig.de/cerd/>.

either a degree in engineering from a higher educational institution, as members of a professional engineering society, or otherwise historically documented to have nominally worked as an “engineer” (*gongcheng si* 工程司 or *gongcheng shi* 工程師). For its sources, the database heavily relies on a *Who’s Who* of engineers, which the government started compiling in the late 1930s and published in 1941,⁷ and further complements the register by at least a dozen other, often earlier, sources such as society membership directories, college yearbooks, and other *Who’s Who*-type books.⁸ The database includes the career steps of the respective engineers, including the name of the workplace and, where available, the time they were employed and a description of the capacity in which they worked.

Tests attest to a reasonable level of completeness of CERD records. For the early decades, the number of individuals cataloged in CERD closely matches the estimated number of engineering graduates based on government statistics, in some years even slightly surpassing the estimated amount.⁹ For the years 1930 to 1936, for which concrete government figures are available, professional biographies included in CERD still attest to an annual average of 75% of the overall number of engineering graduates claimed by the government. CERD still lacks sufficient information about professional assignments during the last decade of Nationalist rule and especially about engineers working under the collaborationist regimes. It does, however, feature a near-complete record of earlier, more established engineers – who are more likely to have worked in high-ranking positions and are thus of particular relevance to this study.

To feed CERD with information about high-ranking offices for the whole Republican period, external data is superposed on top of the professional biographies. A dataset of individuals working in high-ranked government positions, originally published in book form at the Academia Sinica,¹⁰ includes individuals

7 Ziyuan weiyuanhui 資源委員會, *Zhongguo gongcheng renminglu*. 中國工程人名錄 (Changsha: Shangwu yinshuguan, 1941).

8 For a list of sources, see Pelzer et al., CERD.

9 When comparing CERD figures with Nanjing-era government statistics (Directorate of Statistics, ed., *Zhonghua minguo tongji tiyao: Minguo sanshiliu nian ji*. 中華民國統計提要民國三十六年輯 (Nanjing: Directorate of Statistics, [1947] 2010), 92) and assuming an exponential growth of the latter, numbers of concurrent engineering students listed in CERD (version 1.7) are slightly higher than expected for 1912–1924 and slightly lower than expected for 1925–1937. The level of completeness drastically decreases for post-1937, but it is unlikely that wartime and post-war engineering students reached influential positions in their professional careers before the end of the Republican era.

10 Pengyuan Zhang 張朋園 and Huaiyu Shen 沈懷玉, eds., *Guomin zhengfu zhiguan nianbiao 1925–1949*. 國民政府職官年表 (1925–1949) (Taipei: Academia Sinica, 1987). Cleaned, tabulated OCR-version by the author of this chapter.

with positions at institutions of special interest for this chapter: the Ministry of Economics (1938–1949), the Ministry of Communications (1926–1949), the Ministry of Railways (1928–1937), the National Conservancy Bureau, later operating as the Irrigation Ministry (1941–1949), and the connected Huai, Pearl, Yellow, and Yangzi River, Huabei, Northeastern, and Taihu Irrigation Commissions (1927–1948), as well as the Capital, Chongqing, and National Construction Commissions (1928–1938, 1940–1943), the National Economic Council (1931–1937, 1946–1948), and the post-war National Resources Commission (1946–1949). This dataset will be referred to as Zhang/Shen and discussed in greater detail later in this chapter.

The chapter explores the merged CERD–Zhang/Shen dataset through network and sequence analysis. Social network analysis (SNA) utilizes network science – the study of interconnected vertices or nodes – to explore social structures. In this case, links are established between engineers, colleges, and workplaces. To suit the fragmentary nature of the information available in CERD, the data is analyzed through an undirected, unweighted, two-mode network.¹¹ The engineers form connections through their shared college or workplace. Workplaces are linked with each other, where hierarchical information about their organizational structure is available. The design of the network analysis intentionally ignores the position and time of employment and remains agnostic to the nature of the actual relationship between closely aligned engineers. The emphasis lies on institutional links and structural patterns, for example, the transfer of a large cluster of graduates from the same college to a shared workplace. To address potential shortcomings of SNA, especially in identifying patterns *within* careers instead of between them, the analysis is complemented by sequence analysis (SA). SA, as a sociological method, derives from DNA and RNA analysis in bioinformatics. When applied to computational social history, SA serves to identify patterns and clusters within the biographies of a larger cohort. The process is exploratory and depends on the availability of longitudinal data and the editorial decision on categorizing the biographical observations to a limited set of career states. In this specific case, SA is used to situate an engineer's transition to a higher professional or political position in the context of his age, educational background, and previous job assignments. This way, SA can uncover patterns independent from and potentially outside the scope of the nexuses identified through classic SNA. Taken together, the two methods provide a new, comprehensive insight into the scope and limits of engineer involvement inside the Republican-era government institutions.

11 See Stephen P. Borgatti, "Two-Mode Concepts in Social Network Analysis," *Encyclopedia of Complexity and System Science* 6 (2009): 8279–91.

Technocracy and Technocrats

Works of Chinese history have discussed different aspects of scientific management, technocratic administration, and expert rule. While these dimensions share common features, such as the belief in rational principles, they refer to different phenomena on closer examination. The term “technocracy,” which can be applied to all these phenomena, remains ill-defined. Problematically, the definition has also changed over time, and it is not always clear which historical notion the authors refer to. The existing notions of technocracy and technocrats can be roughly broken down into the following three connected but distinct ideas:

1. *As a set of principles for industrial management and governance:* In the Republican era, industrialists attempted to introduce scientific management in their factories based on the technological principles of rationality and efficiency. The industrial reform movement directly inspired the introduction of expert management in the USA.¹² The underlying principles were practiced by industrialist Frederick W. Taylor (1856–1915), informed by economist Thorstein B. Veblen (1857–1929), and promoted by engineer Howard Scott (1890–1970). Their attempt to introduce scientific management inside government institutions comes closest to the original, rather than the colloquial, meaning of the term “technocracy.” In Republican China, not just the industrial sector but also the government itself tried to institutionalize a scientific mode of management, for instance, through the Commission for Studying Administrative Efficiency (*xingzheng xiaoli wei-yuanhui* 行政效率委員會, founded 1934) and the Central Planning Board (*zhong-yang shejiju* 中央設計局, founded 1940).¹³ The “Triple System of Administration” (*xingzheng sanlian zhi* 行政三聯制, 1940) and the state-led economy directed through five- and ten-year plans (*jianshe jihua* 建設計劃)¹⁴ likewise signified the efficiency-oriented planning inside the technological state institutions.
2. *As bureaucrats who advocate technocratic principles:* In the decades following the original technocratic movement, sociologists redefined technocracy to refer to a “special mutation of bureaucracy.” These bureaucrats, also called “technocrats,” were conceived as forming a “scientific-technological elite”

¹² See Stephen L. Morgan, “Transfer of Taylorist Ideas to China: 1910s–1930s,” *Journal of Management History* 12, no. 4 (2006); Akin, *Technocracy and the American Dream*, 1–45.

¹³ Morris L. Bian, *The Making of the State Enterprise System in Modern China: The Dynamics of Institutional Change* (Cambridge, London: Harvard University Press, 2005), 153–67.

¹⁴ Linsun Cheng 程麟蓀, “Zhongguo jihua jingji de qiyuan yu ziyuan weiyuanhui,” 中國計劃經濟的起源與資源委員會 *Shi'eryi shiji* 82 (2004): 90–92; William C. Kirby, “Continuity and Change in Modern China: Economic Planning on the Mainland and on Taiwan, 1943–1958,” *The Australian Journal of Chinese Affairs* 24 (1990): 125–32.

arranged inside a “technostructure” of “technical administrators, economists, engineers and related” experts.¹⁵ This elite advocates principles of technocracy in the government apparatuses, including the state-owned industrial sector.¹⁶ The actors legitimize themselves and their reforms through their expert knowledge, although they do not necessarily assume government positions in which they enact these reforms.¹⁷ One of the potential translations for technocracy in Chinese, “technological bureaucracy” (*jishu guanliao zhuyi* 技術官僚主義), relates to this phenomenon. Among China historians, Bian appears aligned with this definition, understanding technocrats as “technical or professional expert[s] in an administrative or a managerial position [emphasis added].”¹⁸

3. *As professional technicians inside government offices:* In contrast to the focus on expert bureaucrats, there is a tendency in Chinese historiography to discuss “technocracy” more literally as a government of experts. The most common Chinese translation for technocracy, “rule of specialists” (*zhuanjia tongzhi* 專家統治), points in this direction. Primarily discussed as a phenomenon of PRC-era cabinets, the focus lies on an elite of techno-scientific experts (“red engineers”) that form the government legislature and/or executive.¹⁹ Li and White address the different definitions of technocracy and argue that, although a wide range of notions exists, only representatives of this third category should be referred to as technocrats “in a narrow sense.”²⁰ “Engineer-politicians,” a term coined by historian Uekötter,²¹ also relates to this latter category.

To distinguish between engineers influencing politics through their professional practice on the one hand and engineers inside government offices on the other hand, this chapter analyzes all engineers working inside technical government institutions but puts special emphasis on those engineers who clearly assumed political offices. Despite making this distinction, the actual political influence of engineers may not have relied on holding such a political office. Chief engineers, for example, may have

15 Roger Williams, *Politics and Technology* (London, Basingstoke: MacMillan, 1971), 24.

16 Bian, *The Making of the State Enterprise System in Modern China*, 92–100.

17 Thorstein Veblen, *The Engineers and the Price System* (New York: B. W. Huebsch, 1921), 69–71.

18 Bian, *The Making of the State Enterprise System in Modern China*, 277.

19 Cheng Li and Lynn T. White III, “China’s Technocratic Movement and the World Economic Herald,” *Modern China* 17, no. 3 (1991); Hong Yung Lee, *From Revolutionary Cadres to Party Technocrats in Socialist China* (Berkeley: University of California Press, 1991), 254–89; Joel Andreas, *Rise of the Red Engineers: The Cultural Revolution and the Origins of China’s New Class* (Stanford: Stanford University Press, 2009), 233–60.

20 Cheng Li and Lynn T. White III, “Elite Transformation and Modern Change in Mainland China and Taiwan: Empirical Data and the Theory of Technocracy,” *The China Quarterly* 121 (1990): 19–22.

21 Uekötter, “Techniker an der Macht.”

influenced the layout of state infrastructure by altering the route of a new railway, highway, or waterway during a field survey without having sat at the initial planning desk at the Ministry.²² Kirby argues that the “economic bureaucracy,” including engineers and other experts, may have acted increasingly autonomously from political decision-making institutions.²³ In contrast, many sociologists argue that, for professional engineers, gaining political influence meant surrendering professional autonomy.²⁴ The statist economy of the Nationalist state, especially the command economy of the wartime years, had chief engineers gradually transform from the role of autonomous contractors to actors inside the state commissions.²⁵ Within these, the distinction between professional and political office was not always clear-cut. Nonetheless, making a distinction on the theoretical level is productive for the analysis, as it presents some idea about whether the nature of engineer involvement inside the technological state institutions was more on the practical side – in chief positions out in the field, in the factory, or laboratory – or more on the theoretical and ultimately decision-making side of operations.

Locating the Technostructure

As already sketched out above, in the Nationalist era (1928–1949), powerful state institutions gradually incorporated industries rather than merely contracting and cooperating with them. Historians generally agree that the “technical elite” or “technical intelligentsia” significantly influenced the wartime economy through these institutions.²⁶ The institutions constituted the majority of what Kirby calls

²² On route controversies, see e.g. Elisabeth Kaske, “Sichuan as a Pivot: Provincial Politics and Gentry Power in Late Qing Railway Projects in Southwestern China,” in *Southwest China in a Regional and Global Perspective (c. 1600–1911)*, ed. Ulrich Theobald and Cao Jin (Leiden: Brill, 2018); Pelzer, *Engineering Trouble*, 150–68. On route planning, Chi-Keung Leung, *China: Railway Patterns and National Goals*, Research Papers 195 (Chicago: The University of Chicago Department of Geography, 1980); Hongxun Ling 凌鴻勳, “A Decade of Chinese Railroad Construction (1926–1936),” in *The Strenuous Decade: China’s Nation-Building Efforts, 1927–1937*, ed. Paul K.T. Sih, Asia in the Modern World Series 9 (New York: St. John’s University Press, 1970).

²³ Kirby, “Continuity and Change in Modern China,” 132.

²⁴ David E. Apter, *The Politics of Modernization* (Chicago, London: The University of Chicago Press, [1965] 1969), 161.

²⁵ See Xiucheng Le, “The Struggle for Autonomy from the State: Professionalization of Engineering in China” (PhD, Cornell University, 1989); Pelzer, *Engineering Trouble*, 175–229.

²⁶ Margherita Zanasi, *Saving the Nation: Economic Modernity in Republican China* (Chicago, London: Chicago University Press, 2006), 190–92; Marie-Claire Bergère, *The Golden Age of Chinese Bour-*

the “state industrial sector.”²⁷ This sector steadily grew as state commissions incorporated an increasing number of capitalist enterprises. Among these influential commissions (*weiyuanhui* 委員會) were the National Construction Commission (NCC, founded 1928), the National Economic Council (NEC, founded 1931),²⁸ the various hydraulic commissions,²⁹ and, gradually growing in importance and scale, the National Resources Commission (NRC, precursor founded 1932, reformed 1935).³⁰ Apart from these commissions, technical experts worked at the regular ministries. Naturally, engineers, as well as geologists, agriculturalists, and scientific managers, worked at the Ministries of Agriculture,³¹ Communications, Industry, and Railways.

By the end of 1946, a year after reunification, the state counted 203,239 central government employees.³² The breakdown of human resources available under government disposal greatly varies between the sources. While Kirby cites 33,000 “staff” and 230,000 workers for the NRC alone,³³ the Directorate of Statistics presents considerably lower numbers.³⁴ In any case, engineers must have constituted only a fraction of the overall technical staff, as the total number of engineers known to the state – let alone employed by it – was only around 16,000.³⁵ In other

geoisie: 1911–1937 (Cambridge: Cambridge University Press, [1986] 1989), 291; Kirby, “Engineering China,” 153.

27 Kirby, “Continuity and Change in Modern China,” 126.

28 Zanasi, *Saving the Nation*, 81–102.

29 David Allen Pietz, *The Yellow River: The Problem of Water in Modern China* (Cambridge: Harvard University Press, 2015), 86–115; Pietz, *Engineering the State*, 41–60; Shirley Ye, “The Grand Canal in Republican China,” *Journal of the Economic and Social History of the Orient* 62, no. 4 (2019).

30 Yi Xue 薛毅, *Guomin zhengfu ziyuan weiyuanhui yanjiu*. 国民政府资源委员会研究 (Beijing: Shehui kexue wenxian chubanshe, 2004); Kirby, “Engineering China,” 150–153; Youkui Zheng 鄭友揆, Linsun Cheng 程麟蓀 and Chuanhong Zhang 張傳洪, *Jiu Zhongguo de ziyuan weiyuanhui 1932–1949: Shishi yu pingjia*. 旧中国的资源委员会 1932–1949. 史实与评价 (Shanghai: Shanghai shehui kexue yu chubanshe, 1991).

31 For agriculturalists – in the Republican period not yet considered part of the engineering discipline – see Chapter 4 by Wu Jen-shu and Yeh Wei-chun in this volume.

32 Directorate of Statistics, *Zhonghua minguo tongji tiyao*, 134.

33 William C. Kirby, “The Chinese War Economy,” in *China’s Bitter Victory: The War with Japan, 1937–1945*, ed. James C. Hsiung and Steven I. Levine (Armonk, London: M. E. Sharpe, 1992), 205.

34 Directorate of Statistics, ed., *Zhonghua minguo tongji tiyao: Minguo ershisi nian ji*. 中華民國統計提要民國二十四年輯 (Nanjing: Guojia tushuguan, [1935] 2010), 71; Zhaocheng Ceng 曾昭承, ed., *Zhonghua minguo tongji tiyao: Minguo ershiji nian ji*. 中華民國統計提要民國二十九年輯 (Chongqing: Directorate of Statistics, [1940] 2010), 201–7; Directorate of Statistics, *Zhonghua minguo tongji tiyao*, 134.

35 Xuetong Li 李学通, “Jindai Zhongguo gongcheng zhuan ye rencai tongji yu jiliang fenxi: Yi ‘Zhongguo gongcheng renmingli’ wei hexin de kaocha,” 近代中国工程专业人才统计与计量分析 – 以《中国工程人名录》为核心的考察 *Zhongguo keji shi zazhi* 39, no. 2 (2018): 133.

words, even though professional engineers were an important building block for staffing the statist economy, the majority of technicians working in the state institutions drew their expertise from something other than a degree in engineering. Consequently, the translation of the standardized job designations of low-ranking, mid-level, and high-ranking technician (*jizuo* 技佐, *jishi* 技士, and *jizheng* 技正) as assistant, associate, and chief “engineer” is misleading,³⁶ as many but not all individuals employed at these payroll levels were professional engineers.³⁷ The category “technician” (*zhiyuan* 職員) included jobs as diverse as accountants, lawyers, and generic department staff; the latter often only holding a diploma from a middle, high, or vocational school,³⁸ none of which met the level of qualification and area of expertise engineers defined for themselves through their professional societies. Hence, to assess engineer involvement inside the commissions, rather than relying on the total number of individuals working in specific ranks of government institutions, the study must rely on employment information contained in biographies of confirmed professional engineers. Therefore, the involvement of engineers in the state apparatus will be assessed via information contained in CERD.

This assessment will result in a network of individuals and institutions that shall be called, for the purpose of this analysis and from the perspective of the engineers, the technostructure. In the literature, “technostructure” refers to a group of influential technicians who collaborated, but not necessarily identified, with the political system.³⁹ In his classic monograph on the industrial state, Galbraith proposed the term to describe a collective entity that brings “specialized knowledge, talent or experience to group decision-making.”⁴⁰ The phenomenon

³⁶ E.g., Bian, *The Making of the State Enterprise System in Modern China*, 245–46.

³⁷ Individuals with these titles range from agriculturalists to bureaucrats in the Ministry of Education, in the Ministry of the Interior and inside the military, to geologists, medical experts, and maritime customs inspectors (Academia Sinica Archives, “Jinshisuo renming quanwei jiansuo xitong,” 近史所人名權威檢索系統, accessed June 16, 2023, <https://archdtsu.mh.sinica.edu.tw/imhkmc/imhkm>; National Chengchi University, “Zhonghua minguo zhengfu guanzhi ziliao ku,” 中華民國政府官職資料庫, accessed June 16, 2023, <http://gpost.lib.nccu.edu.tw/>; Ribai Lin 林日白, “Jinian dizhi gushengwu gongzuozhe Xu Deyou, Chen Kang, Ma Yisi xunnan 70 zhounian,” 纪念地质古生物工作者许德佑、陈康、马以思殉难70周年 *Dicengxue zazhi* 2 (2014): 253–54; Dingding Xu 徐丁丁, “Kang Ri zhanzheng shiqi zhongyang fangyichu de qingmeisu shizhi gongzuo,” 抗日战争时期中央防疫处的青霉素试制工作 *Zhongguo keji shi zazhi* 34, no. 3 (2013): 350).

³⁸ See, e.g., Executive Yuan Irrigation Commission, *Zhiyuan mingce ji timing lu*. 職員名冊及題名錄, 1941–1946, 25-27-006-03, Modern History Archives, Academia Sinica.

³⁹ John Kenneth Galbraith, *The New Industrial State* (Boston: Houghton Mifflin, [1967] 1985), 64–74; Bergère, *The Golden Age of Chinese Bourgeoisie*, 291.

⁴⁰ Galbraith, *The New Industrial State*, 74.

does not necessitate a specific political or economic system: although Williams envisioned the “technocomplex” as consisting of government-supported enterprises,⁴¹ Aron and Faunce argue that industrial society is based on the introduction of rationalism rather than specific politics.⁴² In the context of Chinese history, Bergère adopted Galbraith’s notion of the technostructure in her analysis of the Republican-era Chinese bourgeoisie. She described the technostructure as a “relatively independent” group including technical, banking, and economic experts who “collaborated with the political system but did not identify” necessarily with the central power.⁴³

The intangibility of the abstract term leads to conceptual issues when trying to quantify the “technostructure” of a given system or to analyze the involvement of one specific group of actors – here, the engineers – within it. To identify the part of the abstract technostructure that was, from the perspective of professional engineers, of importance as a workplace, the analysis sets off with a sequence of etic and emic steps: first, a list of names of government institutions was compiled from secondary literature. Apart from the ministries and commissions mentioned above, the list included divisions temporarily subsumed under the (super-)Ministry of Economy and institutions incorporated or otherwise associated with the National Resources Commission.⁴⁴ In the next step, string matching located these institutions and subdivisions within CERD. Finally, a vertical search within CERD identified additional sub-offices of the institutions that were not explicitly listed in the sources. The outcome thus conceptualizes the technostructure as a network of workplaces with a documented connection to a government institution and with at least one documented employment of a professional engineer.

41 Williams, *Politics and Technology*, 22.

42 Raymond Aron, *The Industrial Society: Three Essays on Ideology and Development* (New York: Simon and Schuster, [1966] 1968), 93–142; William A. Faunce, *Problems of an Industrial Society* (New York, St. Louis, San Francisco: McGraw-Hill, 1968), pp. 17–18, 167–71; Williams, *Politics and Technology*, 11–13.

43 Bergère, *The Golden Age of Chinese Bourgeoisie*, 291.

44 Compiled from Quanguo zhengxie wenshi he xuexi weiyuanhui 全国政协文史和学习委员会, ed., *Huiyi Guomindang zhengfu ziyuan weiyuanhui*. 回忆国民党政府资源委员会 (Beijing: Zhongguo wenshi chubanshe, 1988), Annex; Zhang and Shen, *Guomin zhengfu zhiguan nianbiao 1925–1949*; Academia Sinica, “Jingji bu dang’an.” 經濟部檔案, <https://archives.sinica.edu.tw/wp-content/uploads/e05.pdf>.

Engineers inside the Technostructure

From the perspective of professional engineers, the technostructure primarily manifested itself in six large clusters: The Ministry of Communications, the Ministry of Railways with its attached railway offices as individual sub-clusters, the various water conservancies, the National Construction Commission, the National Economic Council, and the National Resources Commission (Figure 1). Of all engineers with at least one recorded employment, 43.8% worked for at least one institution identified as part of the technostructure at least once in their life. The number may appear lower than expected; however, CERD mainly contains employment data for work commenced before 1941. More engineers gradually started working at the identified technostructure institutions through the 1940s when information about professional careers cuts off.

When surveying which engineering sub-discipline – civil, electrical, mechanical, mining, or chemical engineering – predominated at each of the institutions and their subdivisions, it becomes clear that the various government offices did not attract the different engineering subdisciplines in equal proportions. Rather, depending on the tasks and function of the respective institution, different brands of engineers assembled around them (Figure 1, Table 1). The Ministry of Railways and its associated regional railway offices attracted primarily civil engineers and, at the branch machine shops, mechanical engineers. Civil engineers also dominated the NEC, whose tasks concentrated on national infrastructure, especially highways. As expected, the Ministry of Communications featured a high number of electrical engineers, as it oversaw the regional telegraph and telephone bureaus.

Each of the sub-disciplines was in the process of developing its own identity, for instance, through its own engineering associations and journals. Engineers of different fields also graduated from different colleges because not every school offered a major in every sub-discipline. For instance, the Ministry of Communications allocated its own programs for the different sub-disciplines between the engineering colleges under its control in Beijing, Shanghai, and Tangshan to streamline its resources.⁴⁵ As a result, rather than speaking of engineering in a general manner, it makes sense to distinguish between the respective influences of the different academic and professional engineering sub-disciplines, each bringing their own *habitus* and professional networks to a specific subset within the broader technostructure.

⁴⁵ Thorben Pelzer, “Enter the Pragmatic Engineer: Ling Hongxun at Jiaotong University, 1920–1927,” *History of Education* 53, no. 2 (2024): 260–65.

Table 1: Subdisciplines of engineers working in the main technostructure complexes.

Technostructure complex	Civil	Electrical	Mechanical	Mining	Chemical
Ministry of Railways	1,042	178	466	62	18
Ministry of Communications	240	461	129	40	24
Conservancies [†]	230	6	3	6	–
National Resources (NRC)	66	158	96	189	38
National Construction (NCC)	51	114	36	36	8
National Economic (NEC)	144	4	9	8	6

[†] Institutions concerning rivers and canals often changed their affiliation. At different times, they belonged to, i.e., the Ministries of Communications, Irrigation, or Economy, the National Conservancy Bureau, or the National Economic Council.

The NRC, often portrayed as the epitome of engineers inside the government, largely relied on mining engineers for its mining and metallurgy business and electrical engineers for its powerplants. Statistically, mining engineering constituted a minor sub-discipline within the larger professional engineering field, accounting for just 11.1% of total engineering degrees between 1912 and 1937. Although the NEC and NRC can be seen as tools of political meddling by different political factions, and the latter eventually prevailed over the former,⁴⁶ the two institutions were not alike from the perspective of professional engineers. As their areas of responsibility diverged, they required different skill sets from their employees and, therefore, attracted engineers from different sub-disciplines. If some engineers profited from the powerful position of the NRC, this influence was limited to just a minority within the broader profession: When recruiting engineers and not, as was often the case, geologists,⁴⁷ the NRC primarily recruited mining and electrical engineers. The NRC sub-divisions rarely required the skills that most engineers, who had predominantly studied civil engineering, offered (Table 1).

To gain a better understanding of the different engineering clusters that influenced different parts of the technostructure, the CERD biographic data is used for a social network analysis. The network analysis includes all engineers with at least one recorded employment inside at least one institution identified as part of the technostructure. All workplaces, including private ones and those overseas, are included in the analysis to account for potential connections outside the technostructure. The analysis utilizes a two-mode network, meaning individuals are not connected directly to one another, but rather through shared colleges or workplaces.

⁴⁶ Zanasi, *Saving the Nation*, 190–92.

⁴⁷ Grace Yen Shen, *Unearthing the Nation: Modern Geology and Nationalism in Republican China* (Chicago: University of Chicago Press, 2014), 125–26.

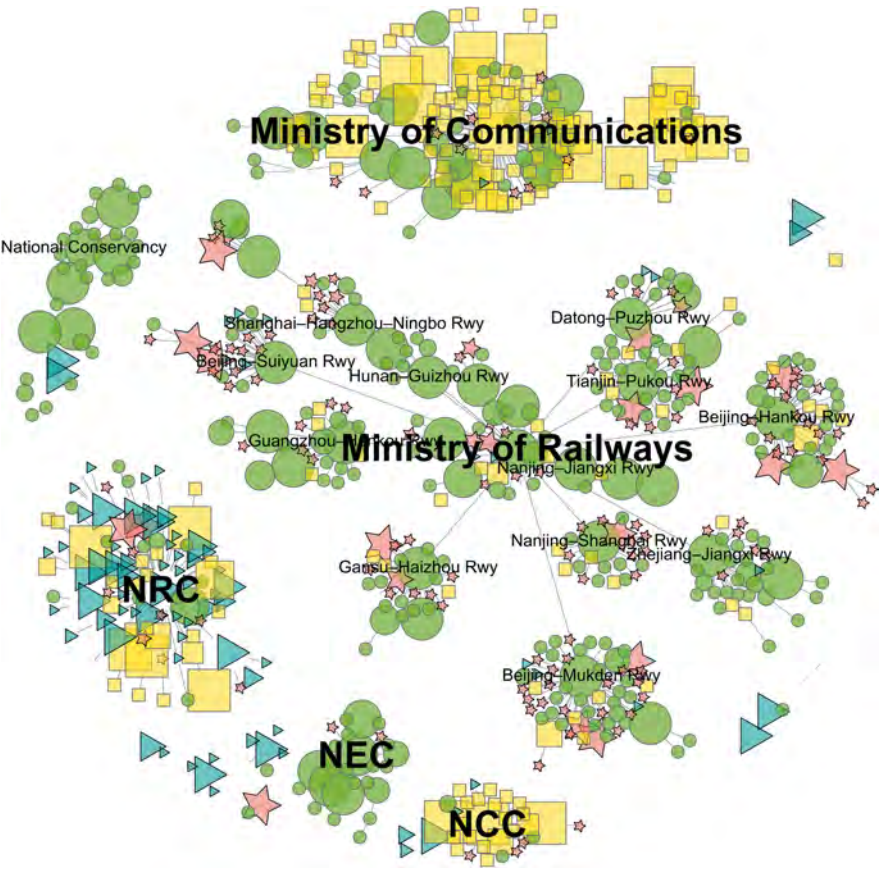


Figure 1: Technostructure institutions with engineer involvement, highlighting the dominant engineering sub-discipline. Each node represents a division or sub-division (such as a specific railway line and its various machine shops). Larger node sizes indicate a larger number of employed engineers (non-proportional). Colors mark the predominant engineering subdiscipline (green circle: civil engineering, coral star: mechanical engineering, yellow square: electrical engineering, cyan triangle: mining engineering).

The result of this social network analysis, when looked at in its complete state, is a detailed mesh that is too complex and wide to describe and discuss meaningfully. The structures hiding underneath the tens of thousands of connections become clearer when identifying sub-clusters within the larger network. The Louvain method is an algorithm used in the detection of smaller communities that share common charac-

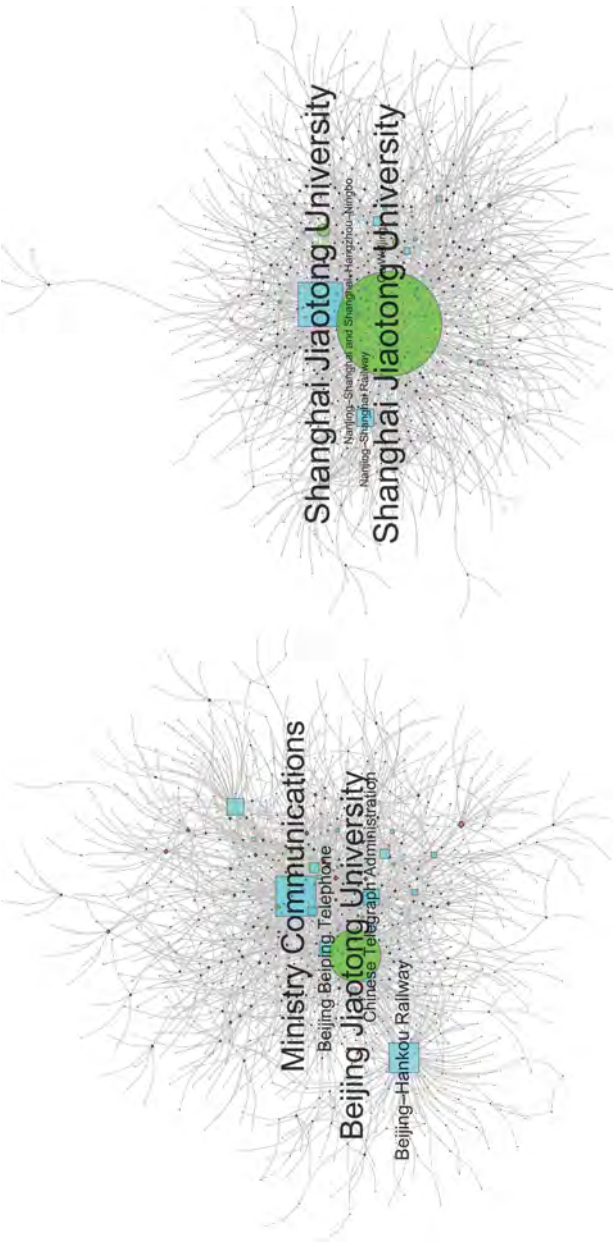
teristics.⁴⁸ When looking at the ten largest clusters identified through this method, one can identify communities (not necessarily actual social groups) that gravitate towards a specific college or a particular institutional complex (Table 2). The largest networks feature a geographic bias stipulated by their shared *alma mater*, namely the Jiaotong colleges in Beijing (Figure 2), Shanghai (Figure 3), Tangshan (Figure 4), and Beiyang University in Tianjin (Figure 5). Their later employment appears somewhat determined by geographical vicinity and the sub-discipline dominant at the respective college. Beijing Jiaotong University graduates often found work at the Beijing-era Ministry of Communications and its annexed telephone and telegraph administrations, as well as at the nearby Beijing–Hankou Railway. Shanghai Jiaotong University often recruited its own graduates as new lecturers and professors. Graduates of Tangshan University, with its long history as a railroader training school, spread across the different national railway lines. Meanwhile, the Beiyang University cluster has a strong hydraulic focus, with graduates working at different water conservancies and river commissions. Other communities gravitate towards a common employer, such as the National Resources Commission (Table 2, #9), or form provincial clusters with a local railroad as a main point of reference (#6 and #7).

Apart from these centers of gravitation, the clusters unveil mobility patterns between colleges and workplaces. For instance, graduating from Tsinghua University brought with it a likely employment at the Ministry of Railways. Former students of the Nanjing-era Central University often ended up working at the Central Electrical Equipment Factory. Meanwhile, the War Ministry drew from graduates of Berlin Technical University and Tongji University, a Shanghai-based institution with its own German history. A deeper dive into student and workplace mobility is a story for another time.⁴⁹ What is important for the analysis of the technostructure is the realization that rather than understanding the rise of particular engineers within government institutions as the story of a general rise of the engineering profession, the SNA gives reason to understand the profession as a set of different sub-networks with varying levels of access to responsible roles in influential state institutions.

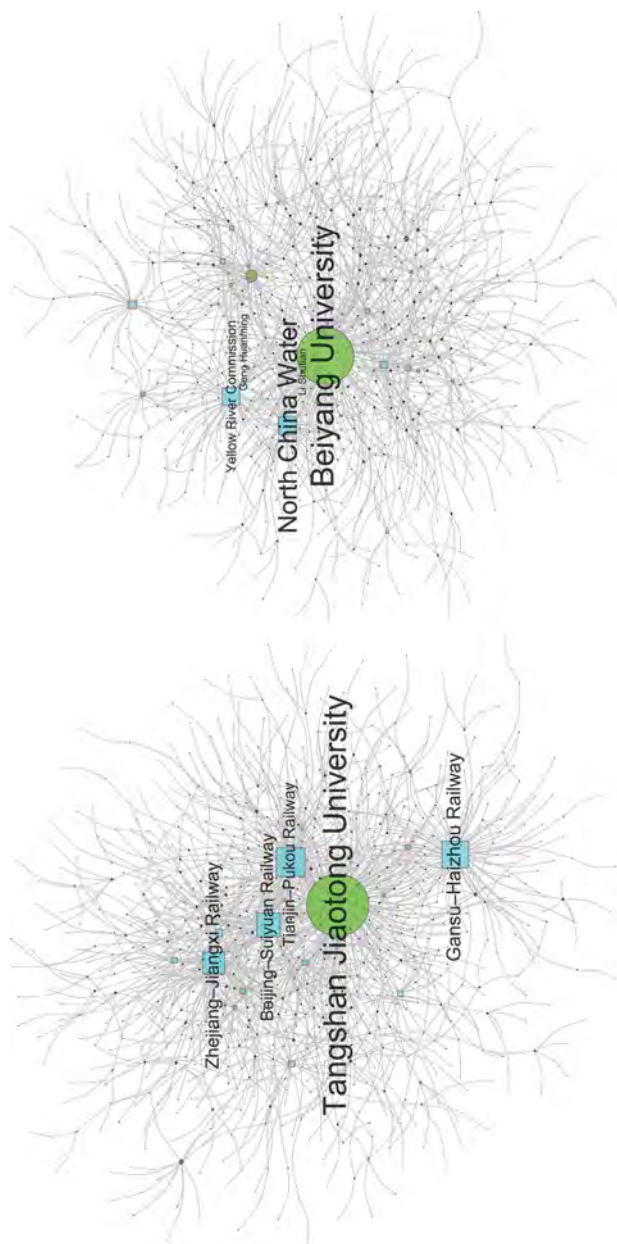
The distribution of engineers within state institutions depended on their professional specialization. The engineers formed clusters based on their shared college and workplace experiences. The social network analysis demonstrates that, at least implicitly, the different parts of the engineering profession formed rather distinct clusters within the larger technostructure. The question remains how these clusters may have, to varying degrees, exerted technocratic control, especially in

48 Vincent D. Blondel et al., “Fast Unfolding of Communities in Large Networks,” *Journal of Statistical Mechanics* 10 (2008).

49 See Thorben Pelzer, “Engineers on the Move,” forthcoming.



Figures 2 and 3: Subgraphs of the four largest technostucture communities. Node color indicates type (Green circle: college, blue square: workplace, red rhombus: individual). Node size indicates degree centrality. Labeled are the five largest nodes by eigenvector.



Figures 4 and 5: Subgraphs of the four largest technostructure communities, continued.

the form of political offices. In other words, if engineers assumed political power at a considerable level at all, the question is whether this observation holds true for all kinds of engineers or if the phenomenon was largely limited to specific communities within the larger engineering profession.

Table 2: Largest communities within the CERD network. *Louvain detection, binary weighting.*

Order [1]	Central nodes, eigenvector centrality [2]	Size	Diameter	Density
1,106	Beijing Jiaotong University (as college), 1.00 Ministry of Communications, 0.54 Beijing–Hankou Railway, 0.22	1,716	10	0.0028
1,071	Shanghai Jiaotong University (as college), 1.00 Shanghai Jiaotong University (as workplace), 0.38 Nanjing–Shanghai–Hangzhou–Ningbo Rwy, 0.10	1,722	10	0.0030
857	Tangshan Jiaotong University (as college), 1.00 Gansu–Haizhou Rwy, 0.22 Zhejiang–Jiangxi Rwy, 0.22	1,257	10	0.0034
796	Beiyang University (as college), 1.00 North China Water Conservancy, 0.31 Yellow River Commission, 0.16	1,153	12	0.0036
687	Central University (as college), 1.00 Central Electrical Equipment Factory, 0.62 Huai River Water Conservancy, 0.32	969	10	0.0041
530	Hunan–Guizhou Rwy, 1.00 Hunan University (as college), 0.72 Hunan–Guizhou Rwy Engineering Dept., 0.24	722	14	0.0052
529	Beijing–Liaoning Rwy, 1.00 Beijing–Liaoning Rwy Tangshan Workshop, 0.14 Zheng Daqiang, 0.12	674	12	0.0048
448	Ministry of Railways, 1.00 Tsinghua University (as college), 0.62 Nanjing–Jiangxi Rwy, 0.50	531	12	0.0053
445	National Resources Commission, 1.00 Gansu Oil Fields, 0.18 NRC Sichuan Xikang Copper Administration, 0.16	582	10	0.0059
389	Tongji University (as college), 1.00 Department of War, 0.82 Berlin Technische Hochschule (as college), 0.41	481	12	0.0064

[1] The number of involved nodes (in contrast to “size,” the number of edges).

[2] Eigenvector centrality has been used to reduce the effect that different levels of completeness of the biographical entries (e.g., different numbers of events) have on the network statistics (cf. degree centrality).

Elite Sequencing

What is so far missing from the picture is the career stage of the engineers connected via the network analysis: were they part of a professional or political elite, or did their involvement at a respective government institution merely constitute their everyday job, perhaps generously remunerated but not coming with any noteworthy political influence? Furthermore, it is possible that engineer-politicians were influential within specific clusters of the technostructure but did not play a part in steering the state at the top level. Conversely, it may also be possible that engineer-politicians were highly politically influential on the highest state levels but, despite being engineers on paper, never played an important role in the larger professional engineering scene. To assess the centrality of engineer-politicians within the professional network, they must first be identified.

As CERD does not hold enough information about political offices, a second dataset, the Zhang/Shen list of leading Republican-era officeholders, in the following limited to only the ministries and commissions with substantial engineering involvement (see above), was superimposed on the technostructure network. The linking process between CERD and Zhang/Shen relied on a crude name-matching process, as names are the only information that the list of officeholders contains. The linking process, which matched 162 of the 588 names with CERD biographies, is unlikely to underestimate the number of involved engineers. More likely, the process slightly overestimates involvement due to the possibility that some of the individuals matched are false positives, i.e., a match between two distinct individuals bearing the same name. The top results of the linking process were manually checked and cleaned.⁵⁰

The listed offices include positions with representative duties clearly outside the scope of professional engineering, such as the office of committee member (*weiyuan* 委員), state secretary (*canshi* 參事), and minister (*buzhang* 部長).⁵¹ Even within technical institutions, these political offices were usually held by non-engineers: established leaders of the civil government like the educator Cai Yuanpei (蔡元培) (1868–1940), career-politician Sun Ke (孫科) (1891–1973), or diplomat Wang Zhengting (王正廷) (1882–1961) frequently appear on the lists of

⁵⁰ The following algorithmic matches were manually excluded (same name, different persons): Chen Shuren 陳樹人, Geng Jingwen 耿覲文, Li Pan 李蟠, Li Peiji 李培基, Jiang Hao 江浩, Yan Kuan 嚴寬. Also excluded due to lack of available information: Fang Xuefen 方學芬, Wang Lie 王烈, Zhang Naigong 張乃恭.

⁵¹ Wildcard string matching performed with the following terms: *buzhang* 部長, *canshi* 參事, *guwen* 顧問, *sizhang* 司長, *weiyuan* 委員, *zhengwu cizhang* 政務次長.

committee members. This makes the occurrence of professional engineers holding these political offices even more noteworthy.

Apart from these clearly political offices, the Zhang/Shen source includes positions of technical supervision, such as the office of chief engineer at the various river conservancy commissions. The fact that engineers held offices specifically tailored to engineers is not surprising. For the sake of the analysis, these positions will be categorized as influential professional positions with a high degree of responsibility but not as representative political offices.⁵² For the discussion of technocracy, more interesting than engineers working inside the scope of their profession are engineers who held political offices not already tendered out to them.

To understand the career development of the engineers located within the technostucture – including their potential ascent to an “elite” – two steps must be taken: first, all biographical events must be extracted from the two datasets. Second, the job positions must be categorized. The first step involves converting the available list of biographical information – birth, college graduation, and the commencement of different jobs – into time-stamped events. To normalize the career sequences of the engineers born in different years and decades, the year of birth acts as year 0. To make up for the granularity of available data, only engineers with two or more recorded and distinctly timed occupational events between their 16th and 60th year of age were selected for the sequence analysis (2,323 individuals). For the second step – the categorization of jobs – the most prevalent job positions were manually tagged as belonging to a low, college staff, responsible professional, representative political, or otherwise generic category. Then, string matching designated all remaining job descriptions to these five categories. Information about the college from which the engineers graduated – domestic or overseas – was used to define the career status after the known year of graduation and before the first known year of employment.

Based on this taxonomy, Ward sequence clustering algorithmically divided the biographic sequences into five distinct groups (Figure 6).⁵³ In accordance with their most representative and often last known career stage, I have labeled these groups the generic group, the political elite, the professional elite, the educators, and the assistants. By differentiating between representative political positions on the one

52 Wildcard string matching performed with the following terms: *celiang duizhang* 測量隊長, *changzhang* 廠長, *chuzhang* 處長, *cizhang* 次長, *duanzhang* 段長, *gongwu chuzhang* 工務處長, *gongwu kezhang* 工務科長, *gongwu kezhang* 工務課長, *gongwu zhuren* 工務主任, *jijian* 技監, *jingli* 經理, *jishu zhang* 技術長, *jizheng* 技正, *juzhang* 局長, *kezhang* 科長, *kezhang* 課長, *suozhang* 所長, *xiaozhang* 校長, *zhuren* 主任, *zong gongchengshi* 總工程師, *zong jingli* 總經理.

53 See Alexis Gabadinho et al., “Analyzing and Visualizing State Sequences in R with TraMineR,” *Journal of Statistical Software* 40, no. 4 (2011).

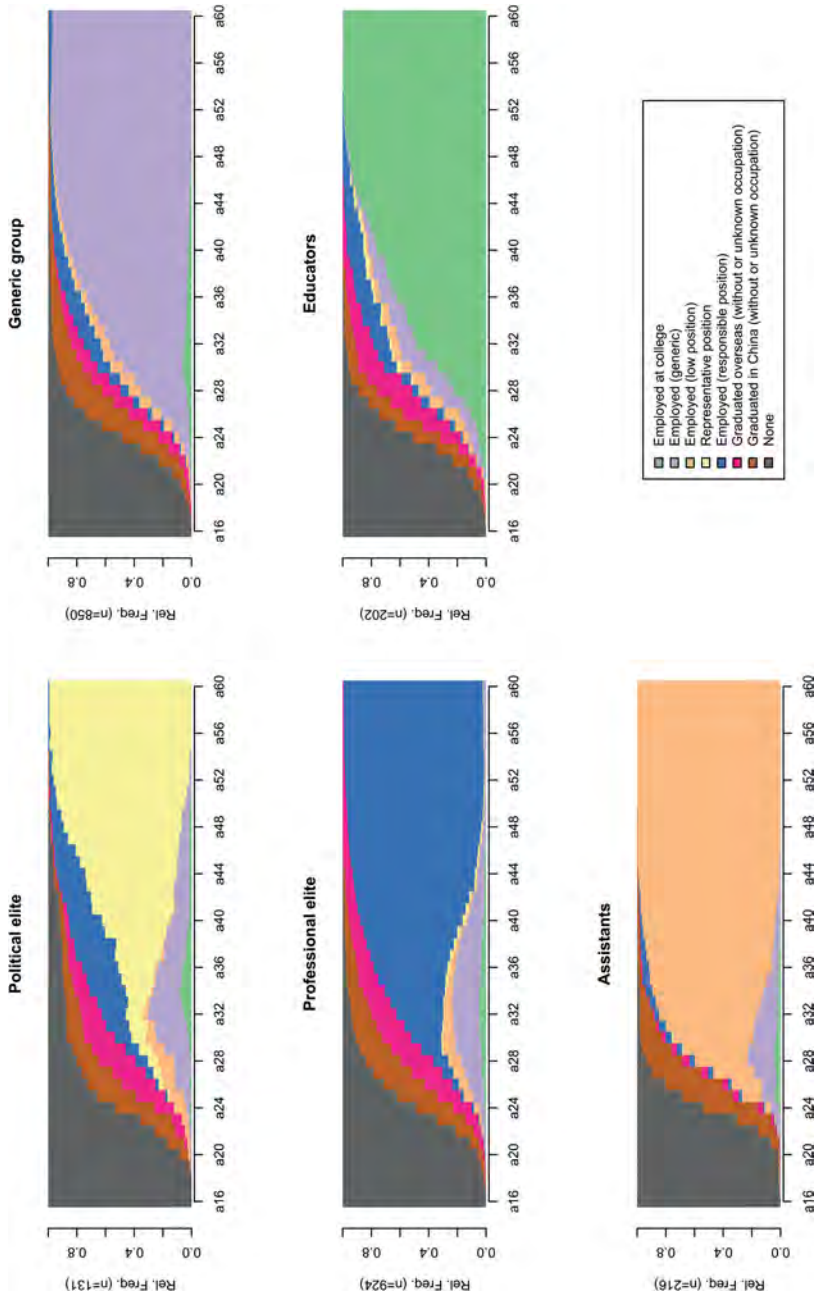


Figure 6: Event sequence clustering of professional engineering biographies. *Ward method, events at ages 16–60, threshold ≥ 3 events, marked: last known status.*

Table 3: Selected sequences by occurrence (*threshold ≥ 2 known employments, $n = 2,323$*).

Sequence		Support [1]
(Graduated in China)		0.610
(Graduated abroad)		0.424
(Graduated in China)	→ (Responsible position)	0.317
(Graduated abroad)	→ (Responsible position)	0.298
(Graduated in China)	→ (Assistant position)	0.239
(Assistant position)	→ (Responsible position)	0.169
(Graduated abroad)	→ (College position)	0.148
(Graduated in China)	→ (College position)	0.130
(Graduated abroad)	→ (Assistant position)	0.120
(Graduated abroad)	→ (Political position)	0.071
(Responsible position)	→ (Political position)	0.066
(Political position)	→ (Responsible position)	0.054
(Graduated in China)	→ (Political position)	0.052
(Assistant position)	→ (Political position)	0.033
(Responsible position)	→ (Assistant position)	0.031
(Political position)	→ (Assistant position)	0.003

[1] Here, the proportion of careers that contain the sequence.

hand and leading, responsible positions – even when held inside state institutions – on the other, it becomes clear that a large group of elite engineers focused on a successful professional career office ($n = 924$) while only a minor community of engineers made the jump to becoming engineer-politicians ($n = 131$).

Apart from grouping the engineers into these five groups, the event sequences can be screened for common patterns. What becomes clear is the significance of college prestige for a later career, especially the prestige associated with graduating from an overseas university. Overseas graduates were 1.35 times more likely to assume a responsible position and 1.55 times more likely to hold political office (Table 3). In professional theory, the jump from active engineering practice to an occupation focused on bureaucracy and political leadership has been termed an “exit” as the individuals stop being “engineers” as defined by their profession.⁵⁴ Sequence analysis, however, indicates that in Republican

⁵⁴ Michael Burrage, Konrad H. Jarausch, and Hannes Siegrist, “An Actor-Based Framework for the Study of the Professions,” in *Professions in Theory and History: Rethinking the Study of the Professions*, ed. Michael Burrage and Rolf Torstendahl (London, Newbury Park, New Delhi: Sage, 1990), 214; Eliot Freidson, *Professionalism: The Third Logic* (Cambridge, Malden: Polity, [2001] 2007), 168.

China, the commencement of a political office did not necessitate an exit from the professional field: individuals who moved from a responsible position to a political office frequently moved back from a representative office to a responsible professional one – or, as the sequence only takes the last known occupational status into account, may have held professional and political positions simultaneously. This phenomenon is also presented visually through the event sequence clustering, where the political sequence is the only one of the five sequences where a category other than the category by which the sequence is identified remains a clearly identifiable part of the sequence well into the fifth decade of the individuals' lives (Figure 6).

Table 4: Approximate extent of engineer involvement in the higher ranks of Nationalist institutions, 1926–1949. *Based on the CERD and Zhang/Shen linking process, n=4,846/20,020/29,576.*

	Individuals	Accumulated years in office total	Accumulated years in each distinct office
Resources, <i>post-war</i>	45.45%	54.03%	54.77%
Communications	29.59%	31.08%	33.13%
Irrigation	24.19%	33.86%	40.52%
Railways	18.18%	26.82%	23.77%
Construction	17.81%	18.33%	23.15%
Economic	15.00%	17.59%	27.41%
State Executive	2.19%	6.66%	10.52%
All other combined	2.05%	3.24%	7.64%

Another complementary attempt to measure the elite involvement of engineers inside state institutions is to take the Zhang/Shen dataset of officeholders and look at how many of the overall number of individuals in leading positions inside each institutional complex can be identified as potential engineers through the CERD name-matching process. Three metrics are being used: the ratio of engineers against the overall number of names listed for each complex; the ratio of how many years these people spent inside the institutions; and the ratio of accumulated years inside the institutions in distinct, often concurrently held positions (Table 4). No matter the metrics used, it becomes clear that with the exception of the NRC, engineer involvement rarely surpassed a third of the leading positions available inside the institutions. In other words, although engineers wielded significant influence inside the technological government institutions, they did not constitute a ruling majority. While thousands of engineers at some point worked inside the technostructure, the leading roles were taken up mostly by non-engineers and only a small engineer elite. The prominent role of these few engineers becomes clear when comparing the different metrics: When

totaling up all years that individuals, both engineers and non-engineers, served inside the institutions in leading positions (Table 4, second and third columns), engineers spent longer times in office than suggested by the ratio in which they were a part of the respective institution (Table 4, first column). In other words, as technical experts, they kept their positions longer than the average bureaucrat.

When looking at the persons at the top level of the government – here, the Executive Yuan, Military Affairs Commission, Presidential Office, and State Council (row “State Executive” in Table 4) – the number of engineers is as low as 2.19%. If this was the basis of assessing technocratic rule, as done when the term is applied to the 1990s and 2000s People’s Republic, this amount is actually lower, not higher, than statistically expected given that between 10% and 20% of Chinese university graduates held a degree in engineering.⁵⁵ When looking at the accumulated metrics, it becomes clear why history presents us with a different impression: Although only every fiftieth high-ranking politician was an engineer, when looking at the accumulated time that people served in leading offices, engineers take up over 10% of the total (Table 4). Of the few engineers who made it, some made it very far and for an above-average amount of time.

Engineer-Politicians

As a final step, the common characteristics that the more influential engineers shared must be identified. For this, the elite group of engineers – identified above through the sequence analysis and through the metrics applied to the linked Zhang/Shen dataset – are located within the clusters of the previously conducted social network analysis.

Looking at the political elite as identified through the sequence analysis, the professional backgrounds reveal a particular feature: while the distribution of the engineering sub-disciplines inside the technostructure at large mostly reflects the total distribution within the profession, the number of mining and electrical engineers within the political sequence cluster is much higher than expected, and the number of civil and mechanical engineers significantly lower (Table 5).

⁵⁵ Xueben Pan 潘學本, ed., *Zhonghua minguo tongji tiyao: Minguo sanshisi nian ji*. 中華民國統計提要民國三十四年輯 (Chongqing: Directorate of Statistics, [1945] 2010), 96–97; Ruth Hayhoe, *China’s Universities 1895–1995: A Century of Cultural Conflict* (New York, London: Garland Publishing, 1996), 50–53.

Table 5: Share of the six most prevalent engineering degrees by complex ($n=15,578/3,792/128$).

	CERD total	Technostructure	Political sequence cluster
Civil Engineering	38.75%	41.98%	22.31%
Electrical Engineering	19.85%	24.00%	33.08%
Mechanical Engineering	16.64%	17.93%	11.54%
Mining Engineering	10.38%	10.21%	17.69%
Chemical Engineering	7.60%	3.24%	11.54%
Textile Engineering	4.47%	0.37%	–

As for mechanical engineers, no high-level government institutions specifically catered towards members of this sub-profession. The primary employers of mechanical engineers inside the technostructure were the railroad bureaus, which were subordinate to the Ministries of Communications and Railways. Boards and other representative positions inside the traditional ministries were less common than in the various government commissions, and the offices of ministers and state secretaries were often occupied by career politicians. While civil engineers (especially when specialized as hydraulic engineers) were at least able to climb the ranks inside the various river conservancies, mechanical engineers remained largely confined to their professional careers. In this sense, practitioners of mechanical engineering, traditionally associated with manual practice in workshops, exhibited a comparably lower prestige, a characteristic they shared with their peers in other countries.⁵⁶

Meanwhile, the number of chemical engineers within the political elite diverges from the share of chemical engineers inside the technostructure due to a large private sector, but only moderately exceeds the share of chemical engineers within the professional field at large. For mining and electrical engineers, the high number of political officeholders largely stems from their involvement with the NRC. Therefore, while the NRC was only of limited importance to the engineering profession at large, for members of those fields of engineering which the NRC primarily attracted, the commission offered an exceptional potential to ascend to the political elite (Tables 4, 5).

⁵⁶ Monte A. Calvert, *The Mechanical Engineer in America, 1830–1910: Professional Cultures in Conflict* (Baltimore: The Johns Hopkins University Press, 1967).

Table 6: Share of the seven most common countries of graduation by complex
($n = 15,825/3,969/134$).

	CERD total	Technostructure share	Political sequence cluster
Domestic only	83.60%	73.77%	58.09%
USA	8.33%	14.79%	20.59%
Japan	2.97%	3.7%	3.68%
UK	1.67%	1.74%	2.94%
France	1.45%	2.37%	6.62%
Germany	1.07%	1.84%	4.41%
Belgium	0.77%	1.54%	2.94%

As pointed out in the sequence analysis, when looking at the countries in which the engineer-politicians graduated, relatively few students completed their studies at a domestic college (Table 6). But rather than exhibiting a general bias for overseas graduates, the political sequence cluster is particularly dominated by U.S. graduates (20.6%). As for German-educated engineers, the discrepancy between their share in the overall dataset and their share in the political sequence cluster – from 1.1% of all engineers to 4.4% of engineer-politicians – supports the observation that German groups yielded a disproportionately large influence inside Guomindang institutions.⁵⁷ Nonetheless, in total numbers, the European-educated engineers are dwarfed by the prevalence of U.S.-educated professionals. Holding a degree from Japan – a country popular with early Chinese students⁵⁸ – did not significantly increase chances to assume a political office, although this figure may be skewed as the analysis primarily relies on data from the Chongqing government, hence potentially missing information on some engineer-collaborators working for the Japan-aligned wartime regimes.

When looking at the individuals holding offices for the longest period, the list is topped by individuals who, in many cases, are well-known and hold a firm place in Chinese historiography (Table 7). Notably, of the more than 17,000 engineers in CERD, just 144 individuals can be matched with names of persons holding a leading office at a technical ministry or commission. Of these individuals, just 23 persons share half of the total sum of accumulated years in different, often concurrent, positions.

⁵⁷ Zheng, Cheng and Zhang, *Jiu Zhongguo de ziyuan weiyuanhui 1932–1949*, 27–41. See also Iwo Amelung, “Der Gelbe Fluß in Deutschland: Chinesisch-deutsche Beziehungen auf dem Gebiet des Wasserbaus in den 20er und 30er Jahren des 20. Jahrhunderts,” *Oriens Extremus* 38 (1995); William C. Kirby, *Germany and Republican China* (Stanford: Stanford University Press, 1984).

⁵⁸ Paula Harrell, *Sowing the Seeds of Change: Chinese Students, Japanese Teachers, 1895–1905* (Stanford: Stanford University Press, 1992); Fu-ch'ing Huang, *Chinese Students in Japan in the Late Ch'ing Period*, East Asian Cultural Studies Series 22 (Tokyo: The Centre for East Asian Cultural Studies, 1982), Translated by Katherine P. K. Whitaker.

Table 7: Accumulated years in office for engineers in higher ranks of Nationalist institutions, 1926–1949.

Years total	Years at state executive level	Name		Lifespan	Engineering sub-discipline	Country of graduation	Social network cluster
66	42	Kong Xiangxi	孔祥熙	1880–1967	–	USA	A
56	–	Wei Zifu	韋以馥	b. 1885	Mechanical	USA	Fig. 2
54	–	Li Shutian	李書田	1900–1988	Civil	USA	Fig. 5
52	7	Shen Baixian	沈百先	1896–1990	Civil	USA	A
52	–	Chen Moxie	陳懋解	b. 1887	Civil	USA	other
49	7	Chen Lifu	陳立夫	1900–2001	Mining	USA	Fig. 5
43	7	Xu Kai	須愷	1900–1970	Civil	USA	other
43	–	Li Yizhi	李儀祉	1882–1938	Civil	Germany	Fig. 5
42	–	Sa Fujun	薩福均	1886–1955	Civil	USA	other
40	20	Weng Wenhao	翁文灝	1889–1971	–	Belgium	B
39	8	Shen Yi	沈怡	1901–1980	Civil	Germany	B
36	4	Zeng Yangfu	曾養甫	1898–1969	Mining	China	other
35	2	Xu Shida	徐世大	1895–1974	Civil	USA	Fig. 5
34	–	Lin Pingyi	林平一	1897–1979	Civil	USA	A
31	6	Chen Panling	陳泮嶺	1892–1967	Civil	China	Fig. 5
30	–	Zhou Xiangxian	周象賢	1885–1960	Civil	USA	other
29	7	Zhang Hanying	張含英	1900–2002	Civil	USA	Fig. 5
25	1	Kong Xianrong	孔祥榕	1890–1941	unspecified	China	Fig. 5
25	–	Song Xishang	宋希尚	1896–1982	Civil	USA	other

Table 7 (continued)

Years total	Years at state executive level	Name		Lifespan	Engineering sub-discipline	Country of graduation	Social network cluster
24	8	Mao Yisheng	茅以昇	1896–1989	Civil	USA	other
22	–	Tao Fengshan	陶鳳山	1900–1950	Electrical	China	Fig. 2
21	1	Fu Dingsheng	符鼎升	b. 1897	unspecified	Japan	Fig. 2

Σ 869 (upper half of total)

The concentration of U.S.-educated engineers, already shown for the sequence cluster of engineer-politicians in general, becomes even more evident. Apart from the German-educated engineers Li Yizhi (李儀祉) (1882–1938) and Shen Yi (沈怡) (1901–1980), who primarily accumulated their years in various hydraulic commissions, the prominent Belgian Ph.D. holder Weng Wenhao (翁文灏) (1889–1971, see below), and just four domestic and one Japanese graduate, everyone on the list held an American degree.

Nobody on the list was born after 1901 (Table 7). Having graduated decades before they assumed office, the earlier generation of engineers was probably not in demand for their cutting-edge knowledge about the engineering discipline. Rather, at the time of working in their positions, they were well-established and respectable not only through their profession but also had, presumably, built up their own networks. The U.S.-educated mechanical, railway, and hydraulic engineers on the list may have had different fields to cater to professionally, but they were, by the vast majority, joint members of the Chinese Institute of Engineers and the much more exclusive Association of Chinese and American Engineers, and often held leading positions within the latter.⁵⁹

No matter whether looking at the names included in the political cluster as identified through the sequence analysis (Figure 6) or at the list of accumulated years in office as calculated through the CERD-Zhang/Shen linking process (Table 7), three social network clusters are represented much more inside the elite than inside the overall technostucture: A medium-sized cluster A (fifth row in Table 2) that gravitates around Central University in the capital Nanjing (+2.5% in the sequence, +11.5% in accumulated years); a very small sub-network B (not

⁵⁹ Pelzer, *Engineering Trouble*, 113–44, 174–84.

part of the ten largest communities in Table 2), topped by individuals such as the somewhat-forgotten but highly influential chemical engineer Wu Chengluo (吳承洛) (1892–1955)⁶⁰ rather than by institutions (+2.3% and +7.1%); and the hydraulic engineering cluster of Beiyang University graduates (Figure 5, +2.2% and +9.0%). On the other end of the spectrum, the largest technostructure cluster (Figure 2) is underrepresented within the elite: the one centered around the old capital Beijing (–2.9% and –8.1%). None of the top-ranking engineer-politicians (Table 7) are part of the second and third-largest clusters (Figures 3 and 4), with graduates of the Jiaotong colleges in Shanghai and Tangshan often becoming lecturers or railroad engineers rather than assuming leading roles in government institutions (Shanghai cluster –4.3% and –13.9%; Tangshan cluster –1.5% and –5.6%). The over- and underrepresentation of engineer-politicians along respectively lesser and larger subgraphs demonstrates that the emergence of a political elite of engineers was a specific phenomenon that did not spread across the engineering profession equally. Technocracy “in a narrow sense” was not just confined to a limited number of engineers but also favored a limited selection of clusters to draw from.

Consequently, the engineers ranking highest as officeholders (Table 7) were not necessarily the engineers most central to the professional engineering scene. For instance, the railroad engineers Ling Hongxun (凌鴻勳) (1894–1981) and Yan Deqing (顏德慶) (1878–1942) may not have accumulated as many years in political offices as Weng Wenhao or Chen Lifu, but they occupied a much more central position in the overall engineering network (eigenvector 0.056 for Ling and 0.016 for Yan, compared to 0.003 for Weng and 0.002 for Chen). They planned and administered various railway lines and held high professional positions through which they influenced the infrastructural landscape of the country. The discrepancy between political relevance and professional network centrality underscores the conceptual difference between engineers situated firmly inside the political establishment on the one hand and professionally active engineers sporadically occupying political offices on the other.⁶¹ Both types can match definitions of “technocracy” (see discussion above), but they relate to different kinds of careers and individuals. Professional network centrality did not directly translate into political influence.

There is a dimension to interpersonal relationships that network analysis, given the limited kinds of information available through the databases, cannot

⁶⁰ Pelzer et al., CERD, 7539.

⁶¹ For thoughts on a division between such camps, see also Apter, *The Politics of Modernization*, 259; Kirby, “Continuity and Change in Modern China,” 130.

factor in but may be important in explaining the causes for the rise of a chosen few engineers (Table 7): private ties outside of college and the workplace. Chen Lifu, the mining engineer who became a leading politician in Jiang Jieshi's cabinet, is a prime example. Chen's uncle, Chen Qimei (陳其美) (1878–1916), had been an early mentor and friend of the generalissimo. Connections between Chen Lifu and other later engineer-politicians can be drawn at an early stage, predating the start of their professional careers: When setting sail to study in the United States, Chen's former classmate in China, the later influential hydraulic engineer Li Shutian (李書田) (1900–1988), was onboard too. So was Chen's brother-in-law Shen Baixian (沈百先) (1896–1990), who also ranks high on the list of accumulated years in political offices (Table 7). Another engineer on the list, Zeng Yangfu (曾養甫) (1898–1969), was Chen's classmate at Pittsburgh.⁶² These biographical insights do not mitigate the results of the network analysis, but they indicate the network components may at times have roots predating professional life and, in the case of family relations, sometimes even predating the college years.

The influence of engineers within the higher ranks of state institutions, already analyzed to have been limited to a minority of the professional field, shrinks even further when looking at only those engineers that made it all the way to the Nationalist executive level (Table 7).⁶³ Only 36 engineers are documented to have held an office inside these institutions. Just six of them account for 50% of the total documented accumulated years that engineers spent in these offices. Two of the six barely qualify as engineers: Kong Xiangxi (孔祥熙) (1880–1967) had studied mining but, although later accepted into the Chinese Institute of Mining Engineers, had already changed his profession to banking before joining politics. Weng Wenhao was a geologist by degree and profession, not a mining engineer. Nonetheless, he later received an honorary degree as Doctor of Engineering from Berlin and was accepted into several professional engineering societies.⁶⁴ Being a commuter between the two disciplines may have presented him with additional qualifications to lead the NRC – but his and Kong's cases also show that one has to stretch the definition of engineering to find engineers in higher political positions at all. What is mostly left is the unique success story of Chen Lifu, the Pittsburgh “technocrat” whose name is well established in connection with the fascist history of the party.⁶⁵ In conclusion, the political involvement of engineers, outside the techni-

⁶² Ch'en, *The Storm Clouds Clear over China*, 16.

⁶³ As described earlier, the state executive here is defined as positions inside the Executive Yuan, the Military Affairs Commission, the Presidential Office, and the State Council.

⁶⁴ Pelzer et al., CERD, 70626.

⁶⁵ Maggie Clinton, *Revolutionary Nativism: Fascism and Culture in China, 1925–1937* (Durham: Duke University Press, 2017), 29–35.

cal commissions and ministries, was far from anything resembling the “red engineers” cluster that later defined “technocracy” in the sense of the post-reform PRC cabinets.

Conclusion

This chapter explored the involvement of professional engineers inside the Nationalist technostructure through the lens of network and sequence analysis. For engineers, the state institutions, including the ministries, commissions, and attached enterprises, were of utmost importance as the largest employers of the Nanjing decade. Given the high level of penetration that the statist technostructure reached through the Nationalist era, it is not surprising that many engineers at some point worked for and received their salaries from these institutions.

Apart from the much-discussed NRC and the other newly formed commissions, this chapter has demonstrated that the classical ministries – especially Communications and Railways – remained the gravitational center of the profession, the majority of which were civil engineers, while the NRC primarily drafted mining engineers, a sub-profession that formed a small minority inside the wider engineering scene. The largest chunk of the profession continued to be employed as active engineers with limited autonomy. Although, as a professional collective, engineers may have qualified as “technocrats” in a wider sense, their collective influence on industry and infrastructure is difficult to put in numbers. A quantitative study can estimate, contextualize, and put things into relation, but the influence of engineers through everyday professional practice remains a case for qualitative and often biographical studies.

By dividing job positions into different categories – among them leading professional and leading political positions – this chapter demonstrated that the number of politically involved engineers remained low. The cluster of engineer-politicians was small and drew from just a few minor communities inside the larger professional network. For most engineers of the largest sub-clusters, political offices were not part of their career paths. Primarily, the powerful technical institutions were “technocratic” in utilizing a set of bureaucratic principles that highly valued efficiency and rationalism. When speaking of “technocracy,” it is therefore important not to mistake the rise of individual engineers for the rise of the profession. The principles valued inside these institutions may have matched the mindset of engineers, but in most cases, these principles were not administered by the engineers themselves.

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Wu Jen-shu and Wei-chun Yeh

Agricultural Technocrats in Modern China: A Network-Based Study of the Ministry of Agriculture and Forestry

Introduction

Since China launched its policy of reform and opening in the 1980s, the image of a strong country has gradually formed. Infrastructure construction has progressed rapidly and continually, with construction and development in transport achieving a great leap forward. The educational background of the Chinese Communist Party leaders constitutes a factor in the increasing focus on economic development, which relates to the greater importance given to engineers. Looking at the composition of the last few Standing Committees of the Political Bureau of the CCP, what stands out is that engineers are in command. Scholars have claimed that in China “engineers rule the country.” In particular, the “rise of red engineers” from universities such as Tsinghua University has become the focus of renewed attention.¹

In fact, this kind of technocratic ideal was laid down by the National Government prior to 1949. The dream of Sun Yat-sen was to build a professional government led by technocrats that could “reconstruct” China with highways, railways, and dams. This idealistic plan was huge in scale and complex to implement. Sun advocated introducing many scientists, economists, and engineers into the core of government.² Following upon this ambition, much attention had already been paid to the nurturing of technical talent in the National Government period. The schools of engineering of Jiaotong University, Central University, Tsinghua University, and others became the sources of China’s first batch of technocrats. After 1949, most of these schools remained in China and were later subject to political rectification,

1 Joel Andreas, *Rise of the Red Engineers: The Cultural Revolution and the Origins of China's New Class* (Stanford, Calif.: Stanford University Press, 2009).

2 Sun Yat-sen's *The International Development of China* 實業計畫 was his proposal for material construction, which he originally published in English. He hoped that scientists and technical bureaucrats would provide guidance and support for China's industrial development, and cooperate with the government and the people to advance the nation together.

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while some of the technocrats trained in these universities went to Taiwan and contributed to creating its economic success.³

From the perspective of historical development and evolution, the rise of technocrats in modern China is indeed a topic worthy of in-depth exploration. Research on this topic, however, has been rather scarce until now. The so-called “technocrats” are usually defined as individuals who have received a higher education in science and technology or related disciplines, who have professional knowledge, experience, and ethos, who hold a position of power, and who tend to promote rational decision-making mechanisms dedicated to the development of the social economy.⁴ However, the concept of technocracy is constantly reinterpreted and applied in different ways, resulting in different interpretations, including in the study of Chinese history.

When exploring the last five centuries of Chinese history, scholars have applied the term “technocrat” to a range of different contexts. Some scholars use this concept to designate the officials who were in charge of public construction in the bureaucracy in the Ming and Qing dynasties, such as river control expert Pan Jixun (潘季訓) (1521–1595) in the Ming dynasty, and directors-general of the Grand Canal Jing Fu (靳輔) (1633–1692) or Zhang Penghe (張鵬翮) (1649–1725) in the Qing dynasty.⁵ Scholars have also used this concept to discuss technocrats in the period after the ROC was established. It centers mostly on specific individuals and discusses technocrats and technological transformation in the early ROC period.⁶

3 Regina M. Abrami, William C. Kirby and F. Warren McFarlan, *Can China Lead? Reaching the Limits of Power and Growth* (Boston, Massachusetts: Harvard Business Review Press, 2014).

4 The most commonly used definition is the explanation proposed by Thomas A. Baylis on East German elites, see Thomas A. Baylis, *The Technical Intelligentsia and the East German Elite: Legitimacy and Social Change in Mature Communism* (Berkeley: University of California Press, 1974), 2.

5 Han Yufen 韓玉芬, “Cong Pan Jixun kan mingdai jishu guanliao de shi wenhua jingshen 從潘季訓看明代技術官僚的仕文化精神”[The Ming Dynasty Technology Bureaucratic Culture of Officials], *Journal of Guangxi Minzu University (Natural Science Edition)* 3 (2008): 22–26; Liu Fengyun 劉鳳云, “Shiba shiji de ‘jishuguanliao’ 十八世紀的「技術官僚」”[The ‘technocratic bureaucrats of the eighteenth century’], *The Qing History Journal* 2 (2010): 17–20; Liu Fengyun 劉鳳云, “Liangjiang zongdu yu Jiangnan hewu – jian lun 18 shiji xingzheng guanliao xiang jishu guanliao de zhuanbian 兩江總督與江南河務 – 兼論18世紀行政官僚向技術官僚的轉變”[Liangjiang Governor and Jiangnan River Conservancy: The Transformation from Bureaucrats to Technocrats during the Eighteenth Century], *The Qing History Journal* 4 (2010): 18–30, 39.

6 Sun Zhijun 孫智君, “Minguo shiqi xuezhe jishu guanliao Gu Yuquan de gongyehua sixiang yanjiu 民國時期學者、技術官僚顧毓琬的工業化思想研究”[Research on the industrialization thought of Gu Yuquan, a scholar and technocratic bureaucrat during the Republic of China period], *Guizhou Social Sciences* 11 (2013): 75–80.

Some research has focused on the technocrats of the Beiyang period (1912–1928), in particular their reforms regarding railway management.⁷

However, the earliest scholar who used the concept of “technocrat” and studied the bureaucracy of the National Government period was Ishikawa Yoshihiro (石川禎浩) in 1991. With the National Resources Commission (資源委員會) at the center, he compiled the characteristics of the experience and thinking of more than 100 members of the Commission. He found that most had studied overseas, reflecting the post-May Fourth Movement popularity of science and the preference for overseas study at the time. The Commission also reflected the popularity of the idea amongst young people that technology could save the nation; in particular, quite a few members of the Commission had joined the Chinese Society of Engineers (中國工程學會), established as early as 1912, and took part in many mining projects, displaying the ideal of resisting Japan and saving the nation.⁸

From the previous research review we can learn that apart from discussing the National Resources Commission, most research was limited to individual cases. Scholarship based on a collective or group has been stalled for a long period of time since the 1990s. A probable explanation for this is that collective information is difficult to obtain. Thorben Pelzer’s chapter in this book is an important contribution to the group analysis of technical bureaucrats. He estimates that there were technical experts serving in government departments, among which agriculturalists numbered 2,883 in 1946, serving in the Ministry of Agriculture and Forestry (農林部) (hereafter MAF). Although this number was lower than the Ministry of Communication, it was higher than the Ministry of Economy, the National Resources Commission, and other institutions.⁹ This shows that the MAF was also an important department where technical bureaucrats concentrated. However, this chapter mainly analyzes the five institutions from 1928 to 1949 and does not discuss the MAF. In this respect, the Archives of the MAF in the Archives of the Institute of Modern History of Academia Sinica have opened a new window for novel historical inquiry.

7 Ma Linghe and Wu Fang 馬陵合 吳方, “Beiyang shiqi jishu guanliao zai chanye xiangzheng zhong de ding wei – yi tielu guanli zhidu biange wei beijing 北洋時期技術官僚在產業行政中的定位 – 以鐵路管理制度變革為背景” [The Positioning of Technocrats in the Administration of Industry during the Beiyang Period – The Reform of Railway Management System as Background], *Social Science Research* 6(2019): 135–144.

8 Yoshihiro Ishikawa 石川禎浩, “Nankin seifu jidai no gijutsu kanryō no keisei to hatten: kindai Chūgoku gijutsusha no keifu 南京政府時期的技術官僚の形成と発展: 近代中国技術者の系譜” [The Formation and development of technocrats during the Nanjing government: Genealogy of modern Chinese engineers], *Shirin* 74:2 (1991): 155–187.

9 See Pelzer’s chapter in this edited volume.

The aim of this chapter is to introduce new tools in digital humanities to study agricultural technocrats in modern China from the perspective of network analysis. With the advent of historical Big Data, new research and analytical tools have become available. The task of a historian is to use different tools to collect, compare, and analyze information from different historical texts and to explore their internal connectivity, then to extract the data from these historical materials and process them through various methodologies. In the field of history, the most widely applied research tools in digital humanities in recent years are Geographic Information Systems (GIS) and Social Network Analysis (SNA). The principle of SNA is to project data as a graph to represent persons, institutions, or locations as nodes. The lines between the nodes represent the relations between people, institutions, locations, etc. SNA visualizes social relations as networks, turning a large volume of interpersonal data into “visible” links between historical actors in the past.

An “affiliation-network” is one of the social networks, with clear hierarchical norms and professional principles.¹⁰ It is particularly suitable for interpreting the operation of bureaucratic organizations. Through cross-analysis of the experiences, education, and origins of its members, we can examine the human flow that sustained the modern Chinese agricultural technical bureaucracy.

I The Ministry of Agriculture and Forestry and Its Archives

The MAF was a technocratic institution that played a fundamental role in the modernization process of agriculture in China, and its impact on modern Chinese history deserves our attention. During the period of the Beiyang Government (1913–1928) in China, institutions such as the MAF, the Ministry of Industry and Commerce (工商部), and the Ministry of Agriculture and Commerce (農商部) were established. During the period of the National Government in 1928, the Ministry of Agriculture and Mining (農礦部) and the Ministry of Industry and Commerce were formed. At the end of 1930, they were merged into the Ministry of Industry (MI) (實業部). After the Sino-Japanese war had broken out, the Ministry of Industry was restructured in 1938 and became the Ministry of Economic Affairs (經濟部); then, in July 1940, the Department of Agriculture and Forestry (農林司) became independent, expanded, and was renamed as the MAF. The history of the MAF can be divided into two periods, the wartime Chongqing period (1940–1945), and the

10 Nan Lin, “Building a Network Theory of Social Capital,” *Connections* 22(1999): 28–51.

postwar Nanking period (1945–1949), when it was responsible for wartime agricultural mobilization and postwar agricultural demobilization respectively.¹¹ The staff of this institution was composed almost entirely of professional agricultural talent, making it an important window to study agricultural technocrats.

The archives of the MAF in the Archives of the Institute of Modern History are quite complete. The MAF's organizational structure was never seriously split, and its documentation was not damaged. As a result, the archives have a high level of concentration. The Second Historical Archives in Nanjing have some archives from the MAF, but they are not as numerous as those held by the Institute of Modern History, and they come mostly from subordinate units. The available archives from the Ministry itself are very limited in the Second Historical Archives, and most are not open for consultation. This confirms that most of the files of the Ministry came along with the Republican Government to Taiwan. The Archives of the Institute of Modern History have completed their cataloging and made their holdings fully available for research.¹²

In recent years, the Archives of the Institute of Modern History have completed the digitization of the documents of the Agricultural Demobilization Commission (農業復員委員會) (hereafter ADC). The source of these documents is linked to the role of the United Nations Relief and Rehabilitation Administration (UNRRA) after World War Two. UNRRA began actively shipping agricultural relief materials to China, and the MAF established the ADC to handle these supplies. The association is an agency for demobilization, design, and supervision. Therefore, it recorded in detail postwar production, agricultural and forestry resumes, as well as official documents of the government and academia. It was vital in creating first-hand historical data on postwar demobilization. In the process of digitizing the archives of the ADC, the Archives of the Institute of Modern History developed a digital humanities project by building the “Modern Agricultural Technical Talents Social Network” (近代農業技術人才社會網絡) platform. This data is derived from the “Chronological Register of National Government Officials” (國民政府職官年表), “Archives of the Ministry of Agriculture and Forestry” (農林部檔案), and the “Agriculture and Forestry Statistical Handbook” (農林統計手冊). The provided information covers the period from 1940 to 1949 and is available for use by researchers and members of the public.¹³

11 Ho Chiahshing 侯嘉星, “Zhongyanyuan Jinshisuo‘Nonglinbu dangan’jieshao jiqi xiangguan yiti taolun 中研院近史所《農林部檔案》介紹及其相關議題討論”[User’s Perspective: A Case Study of the Archives of the Ministry of Agriculture and Forestry], *Archives Semiannual* 18:2 (2019): 44–53.

12 Ho, “User’s Perspective,” 44–53.

13 These data have all been digitized and can be searched on the platforms. <https://archwebs.mh.sinica.edu.tw/network/index.php>

The platform has collected and compiled information on the education and experience of 2,083 officials, technicians, scholars, and foreign advisers found in the archives. The function of the platform is to classify and arrange the data on individual people in the archives, to conduct attribute analysis covering nationality, home province, education, and career, and to use network analysis to visualize the data on the involved agencies and personnel.

This chapter first explores the affiliation-network of the MAF based on its organizational structure. On the one hand, it analyzes the direct relationship between the upper and lower levels of the MAF, e.g., the vertical power involving management and promotion. On the other hand, it takes the horizontal connections within the affiliation-network to examine the career of individuals across units to explain the closeness and distance between departments. With statistical data on education and origin, we also examine the ways in which modern Chinese agricultural technocrats and talent flow developed. Thirdly, we extend our discussion to the network of overseas students and foreign consultants.

II Affiliation-Networks Based on Career, Education, and Native Place

In this chapter, we utilize social network analysis methods to analyze the distribution of careers, education, and native places among the 2,057 members of the MAF. We establish a network of members by linking each individual to their respective education (school) and career (work unit), creating a multimodal network that showcases the distribution of members' occupational and educational backgrounds. Additionally, we color-code members based on their hometowns to observe whether individuals from the same hometown are more closely connected and exhibit similar distributions in terms of education and occupation. Through this analytical approach, we can gain a clearer understanding of the relationships among members and the distribution of their educational and occupational backgrounds.

Affiliation-Networks and Career Patterns

According to data from the MAF, excluding those with unknown units, there are a total of 1,812 work units, 2,057 individuals, and 505 schools. These data include the educational and career backgrounds of 2,057 individuals. Notably, members'

career information is derived from MAF records, which encompass their careers within MAF work units and related organs, like other agricultural organizations or universities, but not necessarily their entire career history.

There are some situations we need to consider. The size of the nodes indicates the number of individuals who have served in them, reflecting three scenarios: (1) The work unit is larger in scale and has more personnel. (2) There is higher personnel turnover within the unit. (3) The unit's registration records are more detailed, with more individuals formally registered. Based on this, we can compile data on the top 10 work units (Table 1) and top 5 schools (Table 2). According to the table, it means that 338 people, or 16%, attended MH, and 242 people, or 12%, attended FIC. Additionally, 118 people, or 16%, graduated from NU, and 3% graduated from SYSU or CU; and so on.

Table 1: Top 10 work units table.

Work unit	Number of persons	Percentage of persons
Ministry Headquarters (MH / 部本部)	338	16%
Food Production Increase Committee (FIC / 糧食增產委員會)	242	12%
Agricultural Demobilization Commission (ADC / 農村復員委員會)	164	8%
General Administration of Relief and Rehabilitation (GARR / 善後救濟總署)	149	7%
Agricultural Promotion Committee (APC / 農業推廣委員會)	103	5%
Central China Promotion and Breeding Station (CCPBS / 華中區推廣繁殖站)	96	5%
Central Agricultural Experiment Institute (CAEI / 中央農業實驗所)	91	4%
Central Livestock Experimental Institute (CLEI / 中央畜牧實驗所)	89	4%
Shanghai Experimental Economic Farm Preparatory Committee (SEFFPC / 上海實驗經濟農場籌備委員會)	78	4%
Yunnan Provincial Promotion and Breeding Station (YPPBS / 雲南省推廣繁殖站)	64	3%

Table 2: Top 5 schools table.

School	Number of persons	Percentage of persons
the University of Nanking (NU, 金陵大學)	118	6%
Sun Yat-sen University (SYSU, 中山大學)	56	3%
Central University (CU, 中央大學)	55	3%
Zhejiang University (ZJU, 浙江大學)	34	2%
Northwestern Agricultural College (NWAC, 西北農學院)	27	1%

Based on data from the “Modern Agricultural Technical Talents Social Network,” we constructed a network (Figure 1). Using this data, we formed a multimodal network to explore interactions between various node types, as follows:

1. **Node Types:** Nodes include individuals (2,057 people, gray), schools (505 nodes, green), and work units (1,812 nodes, blue), totaling 4,374 nodes.
2. **Edge Connections:** Individuals are linked to schools they attended and work units they were part of, establishing a network of educational backgrounds and careers of agricultural talents.
3. **Edge Types and Frequency:** Connections are undirected and unweighted; if an individual leaves and returns to a work unit, it’s counted once.
4. **Node Size (Degree Centrality):** Node size depends on edges. Larger nodes have more connections; school nodes indicate more people from that school, and work unit nodes represent a larger number of individuals.
5. **Visual Network:** We utilized Gephi to visualize the data and created a k-core subgraph, with the value of k set to 2, resulting in 1,666 nodes (38%) and 4,092 edges (60%). The chosen layout, ForceAtlas2, places nodes closer based on common connections.

Note that this multimodal network flattens hierarchical subordination within the organizational structure, presenting units as parallel entities without hierarchy. While not accurately reflecting the actual structure, it doesn’t obstruct our observation of which schools and work units share common talents and reduced node distances. Our focus is explaining common educational backgrounds and career contexts, along with talent resource distribution patterns, rather than power dynamics.

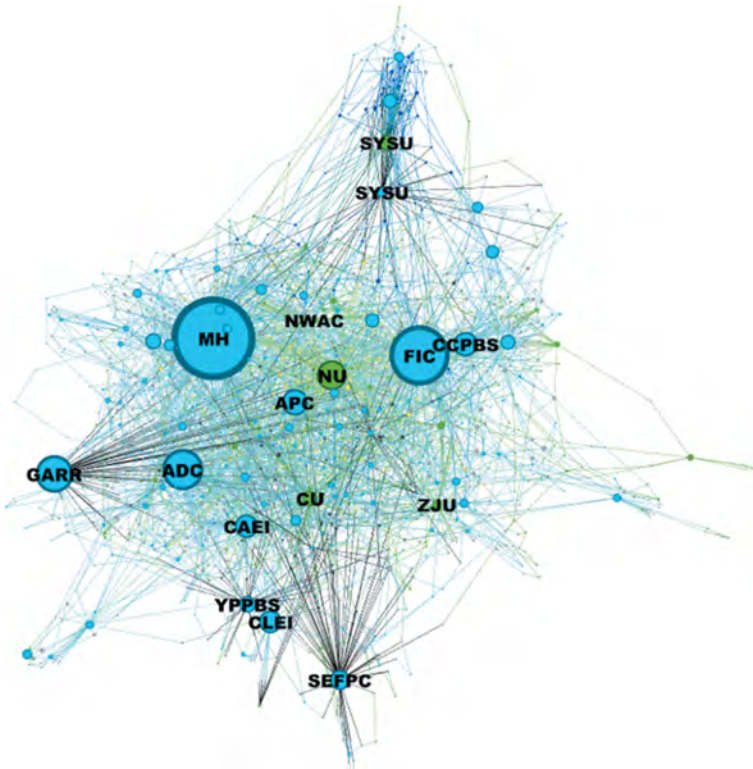


Figure 1: Affiliation-network of the MAF.

We can interpret this multimodal network (Figure 1) based on the size and distribution of the nodes. Judging from node size and their relative positions within the affiliation network, we observe the three largest nodes, representing the Ministry Headquarters (MH), the Food Production Increase Committee (FIC), and the Agricultural Demobilization Commission (ADC). Node size indicates department membership (degree centrality), with larger nodes indicating more members. This suggests extensive involvement in agricultural science, technology, and economics across various departments.

Examining node distribution reveals closer proximity among nodes with common connections. Several smaller units near core nodes attract personnel with similar profiles and experiences. For instance, the CCPB is near the FIC, indicating interaction between ground actors in Central China and the committee. The APC, situated between the MH and FIC, facilitates expert exchange among the three units.

To better see the duplication of personnel between work units, we link the units where personnel move between them, and we can see more clearly how personnel are connected between units (Figure 2).¹⁴ From this graph, we can observe three phenomena:

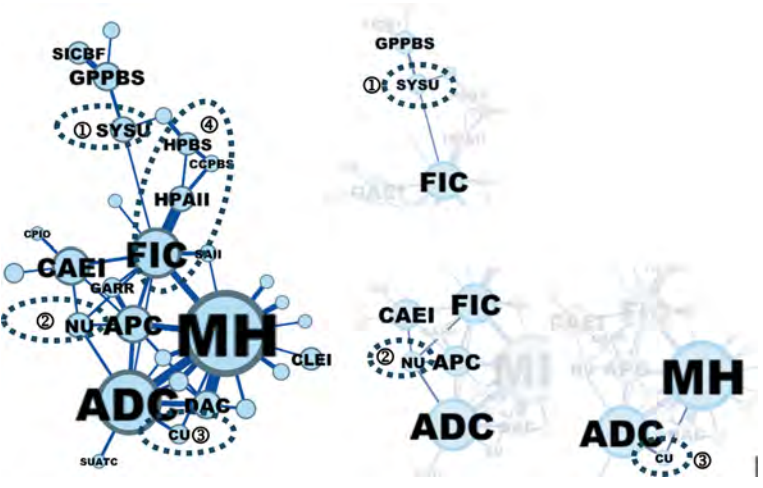


Figure 2: Weighted network of duplicate work units.

1. MH serves as the largest node, with the most people having work experience there. Among the units with the most personnel, such as MH, FIC, APC, ADC, and DAC, interpersonal resource exchange is the most active, indicating close relationships.
2. There is a phenomenon of university staff moving to central units. (i) SYSU primarily moves to FIC, focusing on food production increase, maintaining its geographical connection to Guangdong. (ii) The movement of NU to CAEI, APC, and ADC is significant. (iii) CU, on the other hand, only moves to MH and ADC, which differs from the tendency of its graduates to go to experimental technical units such as CAEI and CLEI.
3. We can observe a promotion pipeline (iv) from HPBS to CCPBS to HPAIL (Hunan Province Agricultural Improvement Institute) to FIC. This is the promotion path for individuals with experience in Hunan.

¹⁴ The network graph comprises 1812 work units. We assigned edge weights to the connections between work units. With 1812 nodes and 8487 edges, we filtered out connections with weights below 5 (indicating at least 5 personnel overlaps), resulting in over 50 nodes. We employed the ForceAtlas2 layout algorithm.

Institutions of Education in the Affiliation-Network

In this section, we will analyze the connections between individuals' educational backgrounds and their work experiences in the MAF. We selected the top three universities and their top nine work units to examine the strength of their connections. From Table 3, it can be observed that 26% of NU graduates have had experience at MH, while 20% have been to FIC, and 19% to FIC, indicating a considerable amount of experience in central agencies. On the other hand, SYSU shows a significant geographical inclination: 63% have been to GPPB, 46% to SICBF, and 20% remained at their original school. Finally, CU has more experience in experimental units, with 22% having been to CAEL.

To better visualize the interpersonal flow between schools and workplaces, Table 3 is visualized here. Three schools, CU, NU, and SYSU, are selected, and their top 9 entry workplaces are connected. The number of entrants is set as the weight, distributed using the ForceAtlas2 layout (Figure 3).

Based on the adjacent positions of career (blue nodes) and educational institutions (green nodes), the affiliation network delineates four relatively obvious communities. The main one, in the central position in Figure 3, is centered on the University of Nanking (NU), with the Ministry Headquarters (MH) and the Food Production Increase Committee (FIC) as the largest related nodes, forming a central ministry community. This shows that the graduates from NU held multiple positions in core organizations, including MH, APC, FIC, and the North China Regional Promotion and Breeding Station. The second community is a technical research-oriented community located at the bottom of Figure 2, comprising Central University, the Central Agricultural Experiment Institute (CAEL, 中央農業實驗所), and the Central Livestock Experiment Institute (CLEI, 中央畜牧實驗所). In the upper position of the network, we can see that a local community formed around Sun Yat-sen University in Guangzhou and the Guangdong Provincial Promotion and Breeding Station (GPPB, 廣東推廣繁殖站).

Table 3: Top 9 Work units of three major schools.

The University of Nanking (NU)	Number of people	%	Sun Yat-sen University (SYSU)	Number of people	%	Central University (CU)	Number of people	%
Ministry Headquarters (MH)	31	26%	Guangdong Provincial Promotion and Breeding Station (GPPB)	35	63%	Central Agricultural Experiment Institute (CAEI)	12	22%
Food Production Increase Committee (FIC)	24	20%	Southwest Improved Crop Breeding Farm (SICBF)	26	46%	Ministry Headquarters(MH)	11	20%
Agricultural Promotion Committee (APC)	22	19%	Sun Yat-sen University (SYSU)	16	29%	Food Production Increase Committee (FIC)	10	18%
NU	18	15%	Guangdong Provincial Government Construction Department (GPGCD/廣東省政府建設廳)	11	20%	Cotton Production Improvement Office (CPIO/棉產改進處)	8	15%
North China Promotion and Breeding Station (NCPBS) 華北區推廣繁殖站	13	11%	Guangdong Provincial Food Production Increase Supervision Group (GPPFI) 廣東省糧食增產總督導團	8	14%	CU	7	13%
Central China Promotion and Breeding Station (CCPBS) 華中區推廣繁殖站	11	9%	Sun Yat-sen University Rice Experiment Field (SYSUREFREF/中山大學稻作試驗場)	7	13%	Central Livestock Experiment Institute (CLEI/中央畜牧實驗所)	6	11%
Central Agricultural Experiment Institute(CAEI)	10	8%	MH	7	13%	Yunnan Provincial Promotion and Breeding Station (YPPBS/雲南省推廣繁殖站)	6	11%

General Administration of Relief and Rehabilitation (GARR) 善後救濟總署	9	8%	South China Promotion and Breeding Station (SCPBS/華南區推廣繁殖站)	7	13%	ADC	6	11%
	8	7%	FIC	7	13%	Shanghai Experimental Economic Farm Preparatory Committee (SEFPC/上海實驗經濟農場籌備委員會)	5	9%
Agricultural Demobilization Commission (ADC/農復會)								

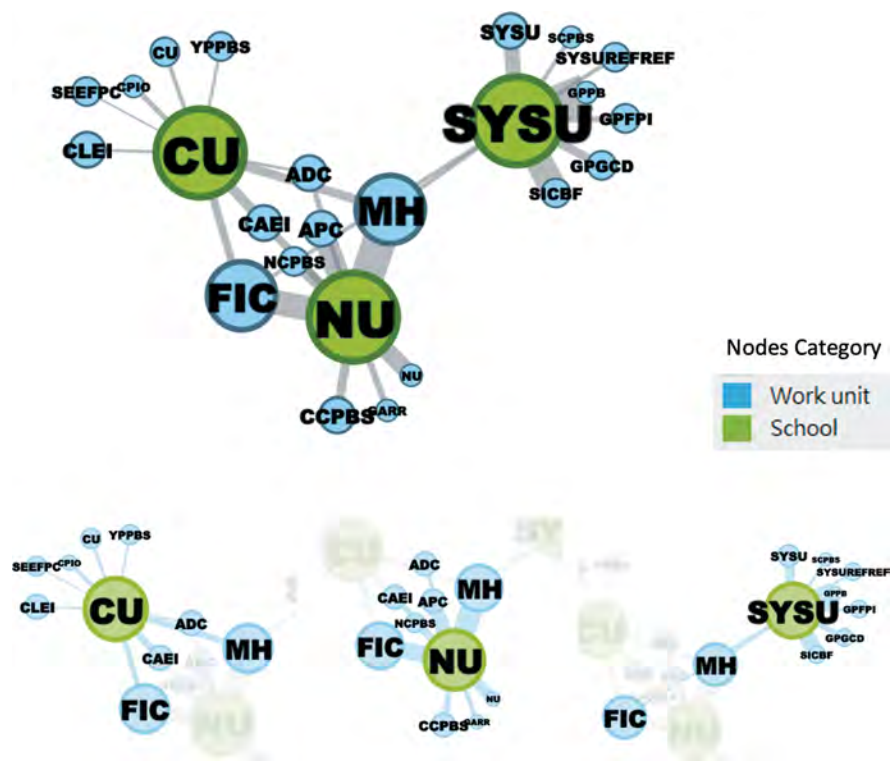


Figure 3: Weighted network of work units and schools.

As mentioned above, if we look at the affiliation-network (Figure 1) and educational statistics (Table 2), the distribution of university training among the members of the MAF placed the University of Nanking, Sun Yat-sen University, Central University, and Zhejiang University at the top with nearly a quarter of all university graduates.¹⁵ The proportion of agricultural science in universities in China at that time was still low. According to statistics from 1931, 49% of the 51 universities in China had law departments, 70% had liberal arts departments, 27% had engineering departments, but only 22% had departments of agriculture. In 1930, the top four disciplines in schools were law, literature, engineering, and science. In 1937,

¹⁵ There are 2,057 Chinese and foreign nationals in the dataset, with 1,087 of whom we have no data on education, and 944 Chinese nationals, who comprise the data in Table 2. Since one person can have multiple academic degrees and job experiences, academic and professional experiences are calculated in person-times, including 153 person-times with unknown academic experience and 15 person-times with unknown professional experience.

they became law, engineering, science, and literature. The growth of science and engineering was more obvious. This imbalance in the disciplines changed after 1937. The four disciplines of science, engineering, agriculture, and medicine experienced significant growth during the seven years of war. The reason for this is not only the government's special emphasis on cultivating such students but also the fundamental reason that, during socio-economic development, there was a significant demand for various types of professional and technical talents. Enrollment in agricultural science increased by 52.6%. Although there was significant growth, the number of students remained small in terms of student population ratio.¹⁶ The University of Nanking (private), Sun Yat-sen University, Central University, and Zhejiang University (public) all had departments of agriculture. These universities had the largest community for agricultural college students during the 1930s to 1940s.

In an affiliation network, individuals with a high similarity of educational background and work experience should have greater proximity. In Table 3, NU produced 31 graduates who worked in MH (26% of graduates), while CU placed 11 people (20%), which is quite significant. NU also had 24 graduates working in ADC (20%) and 22 recruited in APC (18%), which was more than twice the overall average. CU had 6 graduates in CAEI (11%), which also was more than the overall average. This confirms that NU had a close relationship with ADC and APC, as their relative positions show in the network, while CU and CAEI formed a closer relationship.

Sun Yat-sen University ranks second as the source of talents. In the affiliation network, these graduates deviate from the central ministry community, indicating that their work experience in the central organization of the ministry was weak. Of the 56 graduates, only 7 joined MH, 7 became members of the FIC, and none entered the ADC. Also, none was affiliated with the APC. On the contrary, 26 individuals (46%) worked at the SICBF and 36 individuals (63%) in the GPPBS, forming a strong cluster of actors who bridged SYSU and local agricultural units in Guangdong Province. This particularity is related to the policy and ideals of SYSU when it was first established. As a representative model of "party education," the College of Agriculture of SYSU was committed to agricultural practical work such as soil surveys, improvement of rice varieties, and research on agricultural and forestry plants. It strove to pass on new knowledge to farmers to improve their lives. This idealization of serving society was also a concrete manifestation of "People's Livelihood"

¹⁶ Chen Yuan 陳媛, *Zhongguo daxue jiaoshou yanjiu: jindai jiaoshou, daxue yu shehui de hudong shi* 中國大學教授研究: 近代教授、大學與社會的互動史, 1895–1949 [Research on Chinese University Professors: The Interactive History of Modern Professors, Universities and Society, 1895–1949] (Tai Yuan: Shanxi jiaoyu chubanshe, 2012), 145–146.

(民生主義) as laid out in the “Three Principles of the People” (三民主義).¹⁷ SYSU and the NU had therefore different training goals in cultivating technical elites. The agricultural scientists who graduated from SYSU were much better prepared to address local agricultural problems in their own province, rather than scientific problems in metropolises or in the international arena.¹⁸

Affiliation-Networks and Native Place

In this section, based on Figure 1, we visually processed the data to create Figure 4. Node sizes, connections, and layout remain the same; only individuals with known native places are colored accordingly. This helps us identify clusters of individuals by native places and their proximity to specific departments or schools based on node color distribution. The main providers of agricultural technical talents in our period were Jiangsu, Guangdong, Zhejiang, Hunan, and Anhui (Table 4) in order of importance. This concentration of individuals from the first three provinces is similar to the fact that most of the industrialists in Shanghai came from these three provinces in the same period, showing the phenomenon of spatial distribution bias of Chinese talents at that time.¹⁹

In Figure 4, we have built an affiliation network that incorporates the place of birth (province) as one of the node types to examine the distribution pattern of institutions, schools, and individuals by native place.

Table 4: Provincial origins of personnel at the MAF.

Chinese nationality	Number	Chinese nationality	Number
Jiangsu	174	Shandong	36
Guangdong	132	Yunnan	35
Zhejiang	94	Henan	26

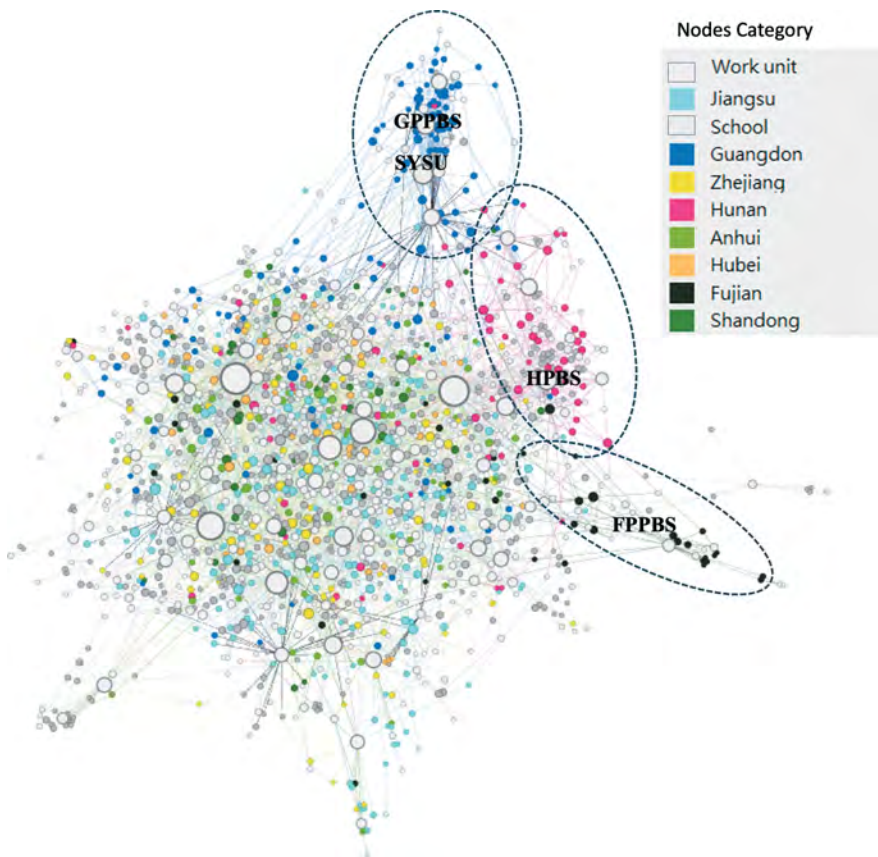
¹⁷ The principle of people's livelihood in the Three Principles of the People is the part of Sun Yat-sen's doctrine that deals with the social and economic problems of China. One of his lectures specifically discussed how to solve the problem of China's food production to meet the people's dietary needs. He believed that in addition to liberating the peasants, there were seven ways to increase agricultural production, including machinery, fertilizer, crop rotation, pest control, manufacturing, transportation, and disaster prevention. The College of Agriculture of Sun Yat-sen University followed this direction, aiming to improve the material welfare of the general public.

¹⁸ Yeh Wenhsin, *The Alienated Academy: Culture and Politics in Republican China, 1919–1937* (Cambridge, Mass.: Harvard University Press, 1990), 116–118.

¹⁹ See Henriot's chapter in this volume.

Table 4 (continued)

Chinese nationality	Number	Chinese nationality	Number
Hunan	78	Jiangxi	20
Anhui	64	Hebei	19
Hubei	55	Liaoning	16
Guangzhou	44	Shanghai	14
Sichuan	41	Nanjing	13
Fujian	39	Others	44

**Figure 4:** Affiliation network by native place at the MAF.

In the affiliation network (Figure 4) which analyzes the network distribution of native places, the node colors in Figure 1 have been adjusted. Work units and

schools are represented in white, while personal nodes are colored based on their native places. By examining the color distribution, we can determine whether there are geographic relationships among these individuals.

First, the most populous group – Jiangsu natives (light blue nodes) – and the third most populous group – Zhejiang natives (yellow nodes) – are widely distributed and scattered throughout the network. There is no distinctive pattern of concentration. Second, Guangdong natives (dark blue), however, are clearly concentrated in the Guangdong Province Promotion and Breeding Station (GPPBS). Hunan natives (red nodes) appear in close proximity to the Hunan Promotion and Breeding Station (HPBS, 湖南省推廣繁殖站), while Fujian natives (black nodes) are related to the Fujian Province Promotion and Breeding Station (FPPBS, 福建省推廣繁殖站). This pattern points to a preference among the natives of Guangdong, Hunan, and Fujian to seek employment in significant numbers in institutions located in their birth province.

In terms of the relationship between educational background and native place, we found that enrollment generally reflected the general pattern of native place distribution in the general student population. According to the research by Liáng Chéng et al., during the period of the Sino-Japanese War (1938–1943), the annual enrollment in universities in China was approximately between 5,000 and 10,000 students.²⁰ Universities in China were divided into different levels, including public national universities, private universities, as well as regional colleges and vocational schools. National universities tended to attract students from all over the country. Yet famous private universities also received a mix of cross-provincial and cross-regional students. Some provincial public and private universities catered more to students from within the province.²¹ The issue of the recruitment pool was far from trivial to gain admission and financial support. For example, in 1928, an attempt to rename Central University to “Jiangsu University” was opposed by teachers and students. One of the reasons was that many students there came from Zhejiang, Anhui, and Jiangxi provinces. If it had been renamed Jiangsu University, students from the other provinces would no longer receive funding from Jiangsu Province.²²

20 Lang Chen, Zhang Hao, Li Lan, Li Zhongqing, *Wusheng de geming: Beijing daxue, suzhou daxue xuesheng she hui lai yuan yanjiu 1949–2002* 無聲的革命: 北京大學、蘇州大學學生社會來源研究 1949–2002 [The Silent Revolution: A Study of Student Social Origins at Peking University and Soochow University 1949–2002] (Beijing: Shenghuo Shidian, 2013), 9.

21 Yeh, *The Alienated Academy*, 3.

22 Ge Mingyu 葛明宇, “Zhongyang daxue nongxueyuan he Jinling daxue nongxueyuan de bijiao yanjiu 中央大學農學院和金陵大學農學院的比較研究” [A Comparative Study of the School of Agriculture of National Central University and the School of Agriculture of University of Nanking] (Master thesis, Nanjing Agricultural University, 2014), 31.

One should bear in mind that entry into university in Republican China was a path opened only to the more privileged classes. To be eligible for admission to any institution of higher education, one had to have reached a certain level of secondary education and be endowed with sufficient financial resources. In addition, many students also had to consider regional factors like transportation costs. Young people in big cities had more opportunities to apply for examinations and benefited from proximity to institutions of higher learning. In the countryside, especially in more remote rural areas, potential candidates had fewer opportunities to attend examinations and faced higher costs of transportation. Because the coastal provinces on the southeastern and southern seaboard (Jiangnan, Fujian, Guangdong) were historically core areas of education, culture, and economic affluence, with a higher degree of urbanization, many universities recruited their students from these areas, especially the Jiangsu and Zhejiang provinces. Even the national universities that recruited students from all over China through nation-wide examinations could not avoid this bias in the admission of students.²³ Taking the most famous example of Peking University, in 1931, there were 11 provinces without a single student admitted, highlighting the uneven geographical distribution.²⁴

There was indeed an overwhelming number of natives from Jiangsu, Zhejiang, and Anhui among the graduates of the University of Nanking, Central University, and Zhejiang University. At Nanking, among the 92 graduates whose birthplace is known, Jiangsu (14), Anhui (14), and Zhejiang (9) accounted for 40% of all graduates. At Central and Zhejiang, the degree of concentration was even higher, with respectively 60% and 70% for these three provinces. This particular pattern can be explained both in terms of geographical proximity and, as mentioned above, by the sheer dominance of Jiangsu and Zhejiang natives in the educated elites. Sun Yat-sen University presented a different profile with a high percentage of exclusively Guangdong natives (81%) among its 52 graduates for whom we know their birthplace. We can conclude that even if Nanking graduates in agriculture came mainly from Jiangsu, Zhejiang, and Anhui, more than half of them came from other provinces. Their presence in the MAF and its dependencies showed that many chose to remain in the Jiangnan area. In the case of Sun Yat-sen University, on the contrary, there was a clear congruence between the place of birth, the place of education, and the place of work in the ministry. Cantonese graduates joined the ministry, but mainly in dependencies located in Guangdong. These patterns reflect the regional characteristics of the student popula-

23 Liang Chen 梁晨, "Cong jiaoyu xuanba dao jiaoyu fenceng: minguo daxue yuanxiao de zhao-sheng yu menkan 從教育選拔到教育分層: 民國大學院校的招生與門檻" [From Educational Selection to Educational Stratification: Admissions and Qualifications of Colleges and Universities in Republican China], *Modern Chinese History Studies* 6 (2018): 24–42.

24 Liang Chen, *The Silent Revolution*, 64.

tion during the Republican period. It was not until the outbreak of the Sino-Japanese War when many universities moved to the Southwest and expanded the scope of their enrollment scale that the sources of students became more diversified.

The Network of Overseas Students

At the beginning of the twentieth century, a massive number of young Chinese with the ambition to save the country went overseas to pursue an advanced education in foreign universities. Among students who majored in agriculture, many went to Japan and France to specialize in sericulture, agronomy, and horticulture. In 1909, the preferred study destination for Chinese students shifted from France and Japan to the United States, especially after the establishment of the Boxer Indemnity Fund by the US government. The outbreak of the Anti-Japanese War reinforced this trend through scholarships and internships.

In our data on the population of ministry personnel, we found that 137 individuals studied abroad. Half of them were natives of Jiangsu, Zhejiang, and Guangdong provinces. Among the overseas students, more than two-thirds pursued their studies in the United States (70.5%), while Japan became the second most important country of education (48.3%), followed by France (11), the United Kingdom (7), and Germany, the Netherlands, and Belgium (1 each). Those who studied in the United States attended mainly Cornell University (CU, USA) – nearly one half – followed by the University of Minnesota (UM), the University of Illinois, the University of Wisconsin (UW), and the University of Iowa (UI).²⁵ Those who studied in Japan attended mainly Tokyo Imperial University (TIU) or Tokyo University of Agriculture (TUA). (Table 5).

Table 5: The top six study schools abroad.

Education	Number	Percentage
Cornell University, USA (CU, USA)	19	14%
Tokyo Imperial University, Japan (TIU)	14	10%
University of Iowa, USA (UI)	8	6%
Tokyo University of Agriculture, Japan (TUA)	6	4%
University of Illinois, USA (UIUC)	5	4%
University of Michigan, USA (UM)	5	4%

²⁵ Zhou Guping and Zhao Shihong 周谷平 趙師紅, “Nongxue liuxuesheng yu jindai zhongguo gaodeng nongxue xueke de fazhan 農學留學生與近代中國高等農學學科的發展” [Overseas Students in Agriculture and the Development of Higher Agricultural Disciplines in Modern China], *Journal of Zhejiang University(Humanities and Social Sciences)* 6(2009): 7–8.

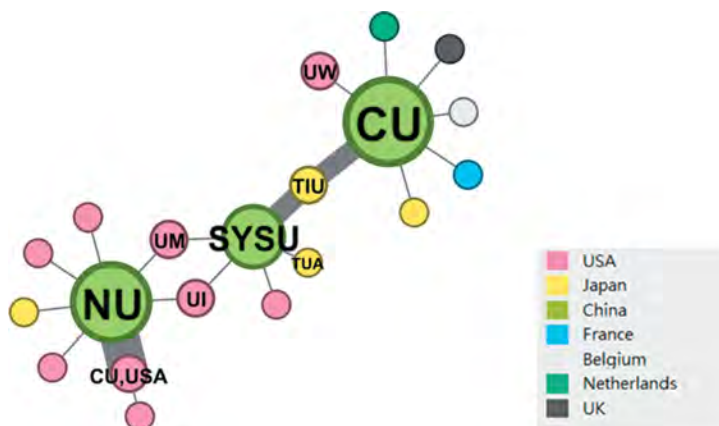


Figure 5: The study abroad network of the main three universities.

The likelihood of students to study abroad was directly related to the university that they attended in China.²⁶ For example, 34.5% of the graduates from the College of Agriculture at the University of Nanking and 31.5% of the graduates from the College of Agriculture at Central University chose to study abroad. Although the nature of the two universities differed significantly (private missionary university vs. public national university), the trend was unmistakable in both institutions.²⁷

The archives of the MAF show that only the students from the University of Nanking, Central University, and Sun Yat-sen University went overseas for study, in the United States and Japan. How did this experience abroad fit into the education and career trajectory of these graduates? Figure 5 represents the returned students' domestic educational background (green nodes) and their place of study abroad, in the United States (red nodes), in Japan (yellow nodes), and in France (blue nodes). We can observe the circulation path from domestic universities to overseas institutions. The University of Nanking is closely linked to American universities (red nodes). The data shows that 80 out of the 119 overseas students graduating from the

²⁶ Armand's chapter of this book also found that professionals in medicine, business, and architecture who received their foundational education at St. John's University in Shanghai, subsequently pursued advanced studies at prestigious institutions such as the University of Pennsylvania and Harvard University. Moreover, some of the technical bureaucrats of the economic sectors studied at the University of Michigan in the United States after graduating from Beiyang University in Tianjin. See Armand's chapter in this volume.

²⁷ Ge, "Zhongyang daxue nongxueyuan," 3. For the history of the Agricultural College of Jinling University, also refer to Zhang Jian 張劍, "Jinling daxue nongxueyuan yu zhongguo nongye jindai-hua 金陵大學農學院與中國農業近代化" [Jinling University's Agricultural College and the Modernization of Chinese Agriculture], *Historical Review* 3(1998): 79–90.

University of Nanking studied in the United States and only one studied in Japan. At Sun Yat-sen University, three graduates studied in the United States and another three studied in Japan. Central University sent three of its graduates to study in Japan and one each in the United States, Britain, France, the Netherlands, and Belgium. The choice of further study abroad was thus very diverse. Cornell University and Tokyo Imperial University received students from a wide range of institutions in China, including Sun Yat-sen, Central, Beijing, and Guangdong University.

The University of Nanking is a missionary institution with a faculty originating from Europe and the United States, with an advantage given to the latter. It is not surprising to see its close ties to Cornell University. The agricultural department of Nanking University was modeled after the College of Agriculture at Cornell. In 1924, the University of Nanking was registered in New York State, and its graduates could be awarded degrees recognized by the state of New York, allowing them to directly gain admission to Cornell or other graduate schools in the United States. As a result, the students who graduated from the University of Nanking had a greater proclivity to further their studies in the United States. In 1948, there were 256 Chinese students studying agriculture in Europe and America, of which 120 were graduates of the University of Nanking's College of Agriculture. These graduates accounted for almost half of the total number of students studying abroad in the field of agriculture.²⁸

As for the College of Agriculture at Central University, its predecessor originated from the Agricultural Science and Natural History Department of Sanjiang Normal School (三江師範學堂) established in 1902. Sanjiang was patterned after Japanese higher agricultural education. During the initial period, many Japanese teachers were recruited to the faculty. After the founding of the Republic of China, the school turned to teachers with an American educational background, but it also retained a small proportion of teachers trained in Japan. Since the faculty was made up of graduates from both the United States and Japan, the students who graduated from the College of Agriculture made more diversified choices to study abroad.²⁹

The native place of overseas students also had an impact on their choice of career after returning to China. Among the 100 returnee students with a known native place, 43 worked in the MH, accounting for the most, followed by 19 in the ADC, 11 in the CAEI, and 10 each in the FIC and the Design and Assessment Committee. Guangdong natives were the largest group among overseas students (19 people), followed by Zhejiang (17 people) and Jiangsu (15 people). Six Guangdong students joined MH, one (MIT) joined the ADC, and one (Cornell University) entered the Central Livestock Experiment Station. Guangdong students returned to their home province to start

28 Ge, "Zhongyang daxue nongxueyuan," 33.

29 Ge, "Zhongyang daxue nongxueyuan," 13, 26–27.

their careers. In contrast, among the 17 Zhejiang overseas students, six enrolled at MH, four joined the CAEI, and four chose the Sino-US Agricultural Technology Cooperation Group, which was more inclined towards technical and professional orientation. Among the 15 Jiangsu overseas students, six entered MH, five took up jobs at the ADC, and two joined the CAEI. There was a clear tendency to accept jobs at the central units of the Ministry among the Zhejiang and Jiangsu overseas graduates. Of the 14 Tokyo Imperial University students with known native places, four were from Guangdong and all returned to their hometowns to serve. All the remaining 10 from other provinces entered MH. This shows that Guangdong natives had a deeper connection with their native province, while overseas students from other provinces in the Jiangnan region had a clear preference for central organization.

III Agricultural Foreign Consultants

During our period, there were a total of 25 foreign consultants, including 18 from Japan, 3 from the USA, 3 from Australia, and 1 from Canada who worked at the MAF. They formed two distinct networks (Figure 6). The Japanese consultants were concentrated at the Gongzhuling Agricultural Experiment Station (GAES) (公主嶺農業試驗場) (13 people, 72%), located in Huaide County (懷德縣) in Jilin province. The 23 Chinese people who worked with them had no experience in other ministries and formed a separate network. There were also three Japanese professionals with a pharmacy background who worked in unknown units, one Japanese who worked in the China Fisheries Company, and one who had experience with the Da Chang Farm (大場農場) and SEFPC (上海實驗經濟農場籌備委員會). The units where Japanese and other nationalities were located were separate from the Chinese units. The Gongzhuling Station was originally an agricultural experimental station in Manchukuo and was once occupied by Soviet troops for the collection of supplies after World War II. In July 1946, the Northeast Special Commissioner's Office of the MAF of the Republic of China sent Wang Jinling to take over and serve as its director. The station was renamed "Northeast Agricultural Experiment Station of the MAF." The Nationalist Government highly valued this experimental station and wanted to rebuild it. Therefore, some Japanese agricultural experts were retained as researchers and given equal treatment as the local staff until they were dismissed in July 1947.³⁰

³⁰ The Ministry of Agriculture and Forestry archives have received relevant files and resumes of Japanese researchers. For the life of the Koshurei Agricultural Experiment Station at that time, also refer to the diaries and oral history materials of the people at that time. See Kanno Tomohiro and Masahiro Koga 菅野智博 甲賀真広, "Menghui Gongzhuling: Tuwu Guangzi nushi fangwen jilu 夢

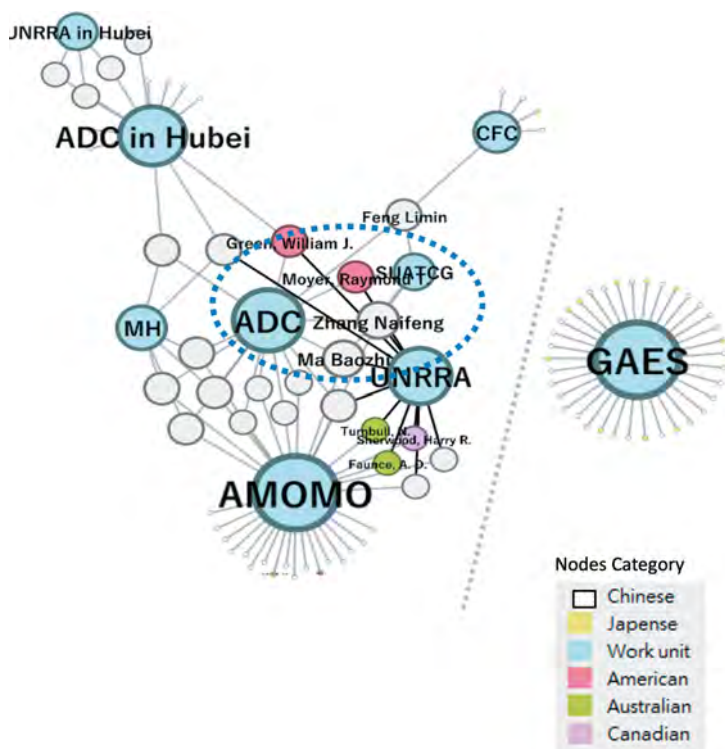


Figure 6: Affiliation-network of foreign consultants.

Since 1945, American, Canadian, and Australian consultants all belonged to the United Nations Relief and Rehabilitation Administration (UNRRA) and the Agricultural Machinery Operation and Management Office (AMOMO). Among them, American consultant William J. Green held multiple positions, serving as the director of the China office, honorary member of the Agricultural Demobilization Commission (ADC), executive member, and member of the ADC in Hubei. Raymond T. Moyer also served as an honorary member and executive member of the ADC, as well as the deputy head and secretary of the Sino-US Agricultural Technology Cooperation Group (SUATCG) (中美農業合作技術團). If we look further into the affiliation-network of American,

回公主嶺: 土屋洸子女士訪問紀錄”[Dreaming Back to Koshurei: A Record of Ms. Tsuchiya Hiroko's Visit], *Oral History* 15(2020): 355–472; Ikeda Minoru and Yukie 池田実 雪江, *Gong zhu ling riji* 公主嶺日記[Koshurei Diary], edited and annotated by Akane Oishi and Masakie Yukawa, included in Hitoshi Fuji et al., eds., *Hokai to Fukko no Jidai: Sengo Manshu Nihonjin Nikkishu* 崩壊と復興の時代 – 戦後満洲日本人日記集[The Age of Collapse and Reconstruction: A Collection of Postwar Manchurian Japanese Diaries] (Tokyo: Toho Shoten, 2022), 355–472.

Canadian, and Australian members, the main institutional nodes were the UNRRA, ADC, the Agricultural Demobilization Commission in Hubei, and the SUATC (Figure 6).

In this network, it is notable that among the 70 individuals, only four graduated from the University of Nanking and three graduated from Cornell University. In the social network of the American consultant group, two Chinese officials stand out, namely Ma Baozhi (馬保之) (1907–2004) and Zhang Naifeng (張乃鳳) (1904–2007), who had stellar careers. Ma Baozhi graduated from the College of Agriculture of NU and later went to Cornell University to study, obtaining a doctorate degree in agriculture. After returning to China, he began a career at the CAEI, and following the outbreak of the Sino-Japanese War, he transferred to Guangxi for administrative work. His work in Guangxi was outstanding, and after the end of the Anti-Japanese War, he was hired by the MAF as the Director of the Agriculture Department. One of his major achievements during his time in the Ministry of Agriculture was the use of agricultural materials donated by the UNRRA. He represented the MAF in Shanghai to collaborate with the China Office of the UNRRA and the China Relief and Rehabilitation Administration.³¹

After Zhang Naifeng had studied at the private St. John's University in Shanghai, he went to the College of Agriculture at Cornell University in the United States for further study. After graduation, he obtained a master's degree from the University of Wisconsin. In 1931, when he had completed his studies, he was hired by the University of Nanking. Later, he resigned from his teaching position and took a job at the CAEI. After the outbreak of the Sino-Japanese War, Zhang Naifeng still insisted on carrying out fertilizer field trials and expanded the scale of promotion. After the war ended, he went to the United States to assist the UNRRA in formulating a plan for postwar relief fertilizer in China. When returning to China in 1946, he worked at the Shanghai office of the ADC, responsible for the receipt and distribution of relief fertilizers.³²

These two careers of agricultural graduates show that the backgrounds of studying in the United States and their experiences in the MAF were the main factors in becoming key intermediaries between the MAF and the consultants from the United States.

We found only one individual who connected with the American and Japanese consultants. It was Feng Limin (馮立民) (1899–1961), a graduate from the Jiangsu Provincial Agricultural School and a former student at the fisheries of the

31 "Mabaozhi boshi yiwang (shang) 馬保之博士憶往 (上)" [Reminiscences of Dr. Ma Baozhi (Part 1)] *Guangxi Literature* 26(1993): 19–30.

32 Zhang nanchēn and Songluxia 張南琛, 宋路霞, *Zhang jingjiang, Zhang shiming jiazu: Yige chuanqi jiazu de lishi jishi* 張靜江、張石銘家族: 一個傳奇家族的歷史紀實 [The Zhang Jingjiang and Zhang Shiming Family: Historical Records of a Legendary Family] (Taipei: Showway Information Technology, 2008), 113–125.

Japanese MAF. He had served as the director and general manager of China Fisheries Company (FRA) and as an honorary consultant of the Fisheries Relief Materials Management Department of the United Nations Relief and Rehabilitation Administration. At the same time, he was also a consultant to the Sino-US Agricultural Cooperation Technology Group. He became the only intermediary among the foreign consultants and played an important role in these international communications.

Conclusion

Network analysis can provide insights into the provincial origin, university source, pathways into the bureaucratic system, and interpersonal relationships among modern Chinese agricultural technocrats. The MAF's core institutions included the Ministry headquarters, Grain Production Increase Committee, and Agricultural Demobilization Commission. However, other committees with a small number of members were also closely connected to the Ministry's power core, such as the Design Evaluation Committee. Furthermore, by examining the horizontal network of personnel mobility, we established that the Grain Production Increase Committee focused on promoting breeding stations in central China.

In terms of educational background, most technocrats in the MAF graduated from one of the four universities: Nanking, Sun Yat-sen, Central, and Zhejiang. These universities had a strong focus on agriculture. The graduates from the University of Nanking were more likely to work at the Ministry Headquarters compared to those from the other three schools. The graduates from Central University were more likely to work at the Central Agricultural Experiment Institute than at other institutions. Sun Yat-sen University graduates, in contrast, mostly elected to work in units located in Guangdong Province. Zhejiang University graduates working at the units of the Ministry were relatively dispersed, without a specific concentration in any unit. Additionally, the source of university students varied substantially, with the University of Nanking presenting a more national profile, while Central and Zhejiang Universities recruited talents mainly from Jiangsu and Zhejiang, whereas Sun Yat-sen University relied mostly on the pool of middle school graduates from Guangdong.

Overall, the MAF's network of professional expertise resulted in a system dominated by individuals from Jiangsu and Zhejiang and graduates of the University of Nanking. Those from Guangdong and Sun Yat-sen University had a distinct local influence in their home province. Even among those who studied abroad, only a small number were able to secure positions in the Ministry's core units. Experts from other provinces such as Yunnan, Fujian, Guangxi, Hunan, and Hubei also formed small local communities.

Looking at the agricultural experts from the perspective of overseas studies, we observed certain characteristics. For instance, the University of Nanking graduates were more likely to pursue their studies in the United States, whereas the graduates of Central University tended to go to more diversified destinations, including the United States, Europe, and Japan.

With regard to foreign consultants among agricultural technocrats, we have established that they formed too small groups to draw general conclusions. The best example of this is the case of Japanese consultants who concentrated at the Gongzhuling Agricultural Experiment Station, forming a separate cluster. Neither Chinese nor Japanese personnel in this institution had other external job connections.

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Cécile Armand

Bonding Minds, Bridging Nations: Sino-American Alumni Networks in the Era of Exclusion (1882–1936)

Signs of the times point to ever closer relations between China and America in the development of trade, culture and other international activities. In the exploration of the great future, American university men are bound to play an increasingly significant role.

H.H. Kung (Kong Xiangxi),
Ministry of finance, Nanking (Nanjing)
July 4th, 1936¹

Between the mid-19th and mid-20th centuries, a significant phenomenon unfolded as over 40,000 ambitious young Chinese men journeyed to the United States for educational pursuits. Upon completing their studies, these individuals returned to China, armed with newfound knowledge, to contribute to their nation's advancement or seek personal career growth. This expansive intellectual migration occurred during a critical juncture in the histories of both countries, profoundly shaping their mutual relations. China grappled with a tumultuous period marked by wars, revolutions, and its coerced entry into the international order through a system of "unequal" treaties, while the United States emerged as a leading industrial and economic power, experiencing accelerated global expansion following World War I. Simultaneously, the untimely termination of the first Chinese Educational Mission (CEM) in 1881 coincided with the advent of the Exclusion Era (1882–1943) in the United States, which severely restricted Chinese immigration on American soil. However, the Open Door Policy (1898) and subsequent remissions of the Boxer Indemnity (1908, 1924) injected renewed vigor into cultural and commercial exchanges between the two nations.²

1 American University Club of Shanghai, *American University Men in China* (Shanghai: Comacrib Press, 1936), xii.

2 Edward J. M. Rhoads, *Stepping Forth into the World: The Chinese Educational Mission to the United States, 1872–81* (Hong Kong: Hong Kong University Press, 2011); Jia Shiheng, Matthew Miller, and Liel Leibovitz, *Xingyun de Haizi: Zhongguo Diyipi Liumei Xuesheng* [Lucky Children: The First Batch of Chinese Students Studying in America] (Taipei: Shibao wenhua chuban qiye gufenyouxiangongsi, 2011). Michael H. Hunt, "The American Remission of the Boxer Indemnity: A Reappraisal," *The Journal of Asian Studies* 31, no. 3 (1972): 539–59.

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This intricate interplay of historical events has engendered a rich body of scholarship on Sino-American relations, offering diverse and sometimes conflicting interpretations. Scholars specializing in Chinese history have diligently explored how the returned students leveraged their American education to reshape China.³ Meanwhile, American scholars have examined how the United States deployed its soft power to extend its influence as an “irresistible empire” globally.⁴ Researchers in the fields of international relations and cultural exchanges have emphasized how foreign policy considerations influenced the development of the “special relationship” between China and the United States.⁵ Certain works have delved into dramatic episodes, such as the plight of the “stranded students” and short-term scientific cooperation programs during the Cold War.⁶ The Open Door Policy and Boxer indemnity remissions have often been perceived as realpolitik endeavors primarily aimed at advancing U.S. interests in China, reducing the Chinese students to mere instruments of foreign policy. While acknowledging the significance of national interests, it is crucial to recognize that frameworks centered solely on nation-building and policy fail to encapsulate the nuanced complexity and profound human interactions characterizing the relations between these two countries. While not subscribing naively to notions of international goodwill and friendship between peoples, an alternative narrative – one that delves deeper into the fabric of their interactions – merits exploration.

Expanding upon previous endeavors to complicate the narrative surrounding Asian exclusion, this chapter aims to deepen our understanding of how high-level

3 Stacey Bieler, *“Patriots” or “Traitors”? A History of American-Educated Chinese Students* (New York: Routledge, 2003); Weili Ye, *Seeking Modernity in China’s Name: Chinese Students in the United States, 1900–1927* (Stanford: Stanford Univ. Press, 2001); Jiang Yongzhen 江勇振, *Chu cai jin yu: Zhongguo liumei xuesheng* 楚材晉育: 中國留美學生 [Chinese students in the United States], 1872–1931 (Xinbei Shi 新北市: Lianjing chuban shiye gufen youxian gongsi, 2022); Y.C. Wang, *Chinese Intellectuals and the West, 1872–1949* (Chapel Hill: University of North Carolina Press, 1966).

4 Victoria DeGrazia, *Irresistible Empire: America’s Advance through Twentieth-Century Europe* (Cambridge, MA: Harvard University Press, 2005).

5 Michael H. Hunt, *The Making of a Special Relationship: The United States and China to 1914* (Columbia University Press, 1983); Liping Bu, *Making the World like Us: Education, Cultural Expansion, and the American Century* (Westport, Conn.: Praeger, 2003); Hongshan Li, *U.S.-China Educational Exchange State, Society, and Intercultural Relations, 1905–1950* (Piscataway: Rutgers University Press, 2007).

6 Zuoyue Wang, “U.S.-China Scientific Exchange: A Case Study of State-Sponsored Scientific Internationalism during the Cold War and Beyond,” *Historical Studies in the Physical and Biological Sciences* 30, no. 1 (January 1, 1999): 249–77; Benjamin C. Zulueta, “‘Brains at a Bargain’: Refugee Chinese Intellectuals, American Science, and the ‘Cold War of the Classrooms’” (Thesis, University of California, 2004); Zuoyue Wang, “Transnational Science during the Cold War,” *ISIS: Journal of the History of Science in Society* 101, no. 2 (June 2010): 367–77.

political decisions manifested in social relations within university campuses, corporate boardrooms, and meeting spaces.⁷ Additionally, it explores how grassroots networks among future leaders from China and the United States might have influenced the long-term trajectory of their countries' relations. Despite constituting a minority within the American student population, Chinese students forged enduring bonds of friendship with their American counterparts, and their remarkable academic achievements drew the attention of notable figures such as T. Roosevelt, J. Rockefeller, and J. Dewey. Over the course of the studied century, thousands of lesser-known American citizens made multiple visits to China, with some even choosing to spend the rest of their lives there. Others who were unable to visit the country maintained regular contact with business partners or friends residing there. Prior studies on Sino-U.S. networks have predominantly focused on specific sectors, particularly education and business, and renowned "bridge builders" such as Paul Chih Meng (Meng Zhi 孟治, 1900–1990) and Paul Monroe (1869–1947). However, these accounts often fall short in capturing the intricate web of relationships within which these individuals were embedded.⁸

Investigating the formation of alumni networks becomes crucial for social historians as it can shed light on patterns of elite career development and collaboration that extend beyond purely biographical factors such as generation and native place. While previous studies have focused on specific student organizations, they have not systematically examined the long-term influence of these organizations on individuals' lives and professional trajectories.⁹ While the concept of networks has gained popularity in historical scholarship in recent years, it has often been used metaphorically, with little attempt to employ formal network analysis to analyze relational data.¹⁰ One reason for this omission is the scarcity of archival materials left by students' clubs, with few records preserved. Historians typically

7 Madeline Y. Hsu, *The Good Immigrants: How the Yellow Peril Became the Model Minority* (Princeton, New Jersey; Oxford [England]: Princeton University Press, 2015).

8 Madeline Y. Hsu, "Chinese and American Collaborations through Educational Exchange during the Era of Exclusion, 1872–1955," *Pacific Historical Review* 83, no. 2 (2014): 314–32, <https://doi.org/10.1525/phr.2014.83.2.314>; Wu Lin-chun 吳翎君, *Meiguoren weijing de Zhongguo meng: Qiye, jishu yu guanxi wang* 美國人未竟的中國夢：企業、技術與關係網 [The Unfulfilled American Dream in China: business, technology and networks] (Taipei: Lianjing chubanshiye gufen youxian gongsi, 2020).

9 Bieler, "Patriots" or "Traitors"?; Ye, *Seeking Modernity in China's Name*. Liu Xiaoqin, "Minguo Liumei Shetuan Yu Liumei Sheng de Shehui Wangluo – Yi Chengzhizhihui Zhang Boling Fenxi Wei Zhongxin (Chinese Students' Clubs and Social Networks in the United States: A Study of Zhang Boling and the 'Cross and Sword' Society)," *Huaqiao Huaren Lishi Yanjiu*, no. 4 (2019): 88–95.

10 There is an abundance of scholarly works in this vein. See, for instance: Nara Dillon and Jean Chun Oi, eds., *At the Crossroads of Empires: Middlemen, Social Networks and State-Building in Republican Shanghai* (Stanford, Calif.; London: Stanford University Press, 2007).

must rely on directories and membership rosters, which may initially appear uninformative. The challenge lies in extracting meaningful insights from these seemingly mundane lists of members.

This paper represents a preliminary effort to examine the formation and impact of Sino-American alumni networks through the application of formal network analysis. The research relies on a distinctive resource, namely the 1936 directory of the American University Club (AUC), which comprises a list of over 400 graduates from American universities who were active in China, along with details of their academic backgrounds.¹¹ In addition, the directory features vivid narratives outlining their accomplishments categorized by occupational groups. The AUC and its directory present an ideal case for systematically analyzing alumni networks, aiming to overcome the limitations of previous approaches that relied solely on biographical and political perspectives. Founded circa 1902, the AUC stood as the earliest, largest, and most inclusive organization of American university graduates in China. Distinguished by its multinational composition, it offered a unique lens through which to understand how the relations between the two countries were built on “the Chinese and Americans who have received their education and ideals from the same fountainhead.”¹² Utilizing the AUC directory of 1936 as its starting point and core source, this research employs a combination of multivariate and network analyses to address two main sets of questions. First, what educational patterns emerged among the American educated active in modern China? What institutional, social, and personal factors shaped these patterns? How did they evolve from the late Qing dynasty to the outbreak of World War II? Second, how and to what extent did their educational experience influence the individuals’ subsequent careers and shape their networks?

This chapter is organized into four main sections. The first section provides an overview of the dataset utilized in this research, emphasizing its statistical characteristics and key features. This section aims to present collective curriculum vitae of the population of American university men of China in 1936. The second section introduces the concept of place and highlights the significance of a place-based approach in identifying common educational patterns among the alumni population. The third section employs contemporary Who’s Who publications to reconstruct the subsequent careers of the alumni and analyze their networks of collaboration. The final section presents two case studies focused on engineers and lawyers, two occupational groups that demonstrate a significant degree of flexi-

¹¹ American University Club of Shanghai, *American University Men in China*. I am immensely grateful to Prof. Jiang Jie for providing me with a digitized copy of the book from the East China Normal University Library in Shanghai.

¹² Kong Xiangxi, *American University Club of Shanghai*, ix.

bility in terms of career and organizational choices, and compares the network structures and career development trajectories of these two groups.

Note. The data and complete code for conducting this research are available on GitHub: <https://github.com/carmand03/american-university-men-china>

A Collective Curriculum Vitae

The dataset includes a total of 682 curricula distributed among 418 individuals, including 234 Chinese (56% of individuals, 59% of curricula), 180 Americans (43% of individuals, 40% of curricula), and 4 Japanese. On average, each student earned two degrees, with Chinese students obtaining a maximum of four degrees and American theologian Carleton Lacy achieving six degrees, the highest among the American cohort.

Period of Study

The period prior to the First Remission of the Boxer Indemnity in 1909 saw a limited number of students, mostly consisting of Americans. However, a significant shift occurred with the launch of the Boxer Indemnity Scholarship Program (Gengzi peikuan jiangxuejin 庚子賠款獎學金), resulting in a dramatic increase in Chinese students.¹³ From World War I onward, Chinese students became the majority. There were two brief interruptions in this trend, one during the outbreak of the war in 1915 and another following the adoption of the Immigration Act of 1924 by the U.S. government. Despite the latter, the impact on Chinese intellectual migration was limited, as Chinese students were still allowed entry into U.S. territory under certain conditions outlined by the first Chinese Exclusion Act of 1882.¹⁴ Coinciding with the year 1924, the Second Remission of the Boxer Indemnity was initiated, along with the establishment of the China Foundation for the Promotion

¹³ In 1908, under the Roosevelt administration, the U.S. Congress agreed to return the excess of the Boxer Indemnity (17 million dollars) in the form of scholarships for Chinese students in the United States. Hunt, “The American Remission of the Boxer Indemnity.”

¹⁴ The Immigration Act of 1924, also known as the “Johnson-Reed Act” and the “National Origins Act,” established new quotas and requirements pertaining to national origin. It established the 1890 census as the basis for determining how many immigrants would be admitted – the limit for each nationality was 2% of that nationality already living in the United States and recorded by the census takers. On the Chinese Exclusion Acts, see: <https://www.archives.gov/milestone-documents/chinese-exclusion-act> (last consulted 8 July 2023).

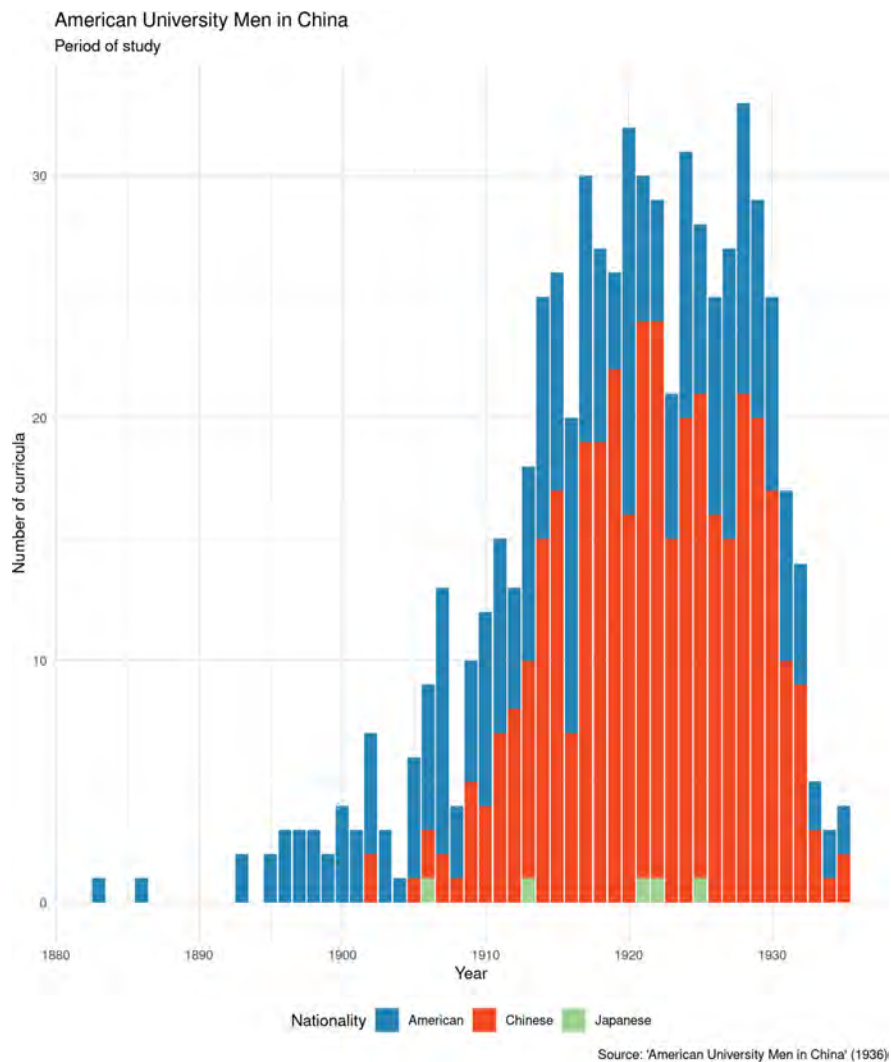


Figure 1: Period of study of *American University Men in China* (year of graduation), by national group (1882–1935).

of Education and Culture (Zhonghua jiaoyu wenhua jijinhui 中華教育文化基金會) to oversee the fund.¹⁵ Subsequently, the number of Chinese graduates experienced another increase, reaching a peak in 1927. On the other hand, American students

¹⁵ Yang Tsui-hua, *Patronage of Science: The China Foundation for the Promotion of Education and Culture* (Taipei: Institute of Modern History, Academia Sinica, 1991).

followed a different chronology. In the nineteenth century, the initial American graduates in China consisted primarily of missionaries and educators who aimed to spread the social gospel among the Chinese population while establishing schools and hospitals throughout the country. The implementation of the Open Door Policy, led by U.S. Secretary of State John Hay in 1898, and the increased involvement of American companies and the U.S. federal government in China, particularly after World War I, marked a new phase.¹⁶ Businessmen and government officials dominated the second wave of Americans in China during the Republic period (Figure 1).

Geography of Education

The geographic distribution of curricula among different national groups underwent significant changes over time. While American students were spread across the entire country, Chinese students exhibited a clear concentration in the Northeast and on the West Coast (Figure 2a). New England, with its early colonial colleges, played a significant role as the birthplace of the pioneering Chinese Educational Mission (1872–1881), led by Rong Hong (容闳) (Yung Wing, 1828–1912). Additionally, the Northeastern states were perceived to be less affected by anti-Chinese racism during the era of Exclusion (1882–1943). Chinese students studying in California were predominantly American-born Chinese, often of Cantonese origin. However, after World War I, there was a shift in students' flow away from the East Coast as they sought more affordable living costs. State universities in the Midwest and the South had gained reputations for excellence and were more economically viable compared to prestigious private institutions in the East. The second series of maps (Figure 2b) reveals a paradoxical trend of westward expansion, while the concentration of Chinese students on the East Coast strengthened after the war. Within this select population of elite students, who were supported by affluent families or sponsored by their governments, the prestige associated with academic degrees from eastern institutions often outweighed financial considerations.

The 418 students collectively attended 147 different institutions of higher education, spanning across 43 states, primarily New York (132 curricula), Massachusetts (66), Illinois (60), Pennsylvania (59), and California (55). Notably, Columbia University ranked first with 61 degrees, followed by Harvard University with 43 degrees and the University of Pennsylvania with 42 degrees. The top ten institutions accounted for over half of all degrees earned by the students. Furthermore, it

16 Lin-chun Wu, "China and the United States: Business, Technology, and Networks, 1914–1941," *Journal of American-East Asian Relations* 27, no. 2 (July 15, 2020): 119–41.

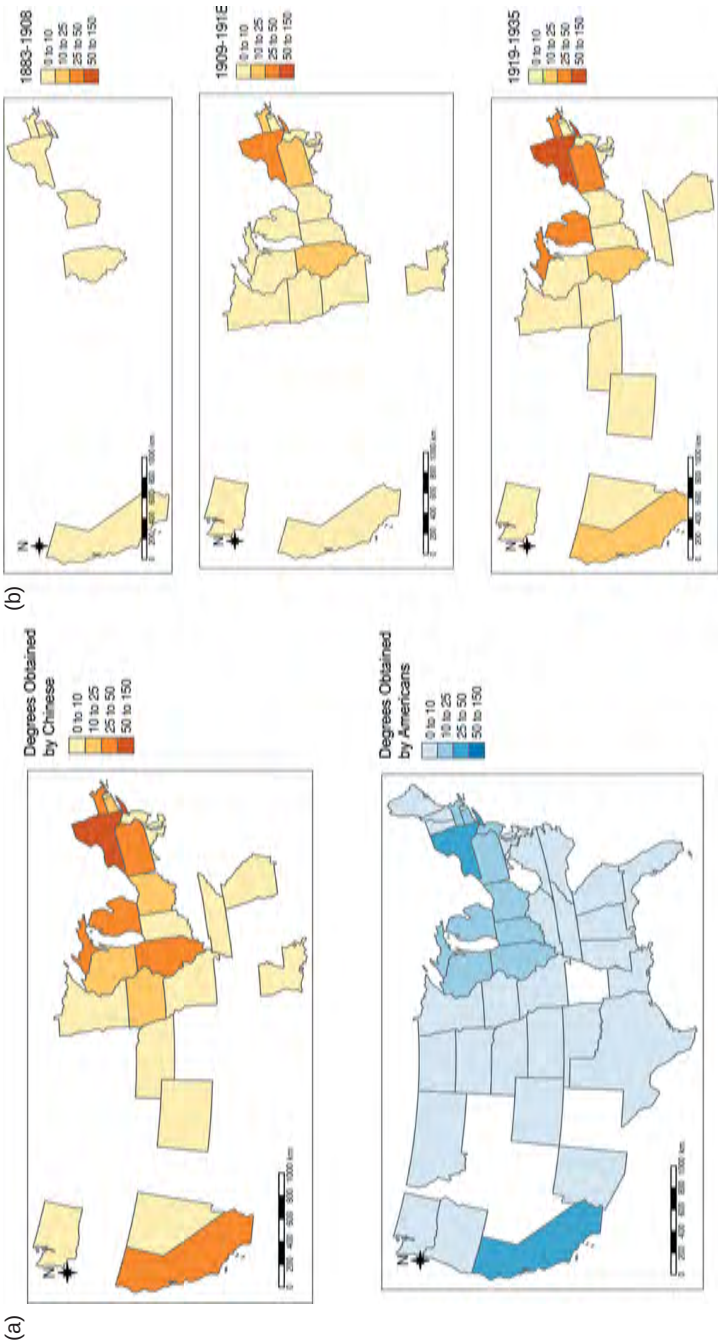


Figure 2: (a) Distribution of American and Chinese students, 1882-1935 (left) (b) Distribution of Chinese students by period (right).

is worth noting that some students also attended universities in Japan, the Philippines, Australia, Canada, and various countries in Europe, demonstrating the international scope of their educational experiences.

Degrees and Courses of Study

Chinese graduates, overall, attained a higher level of qualification compared to their American counterparts. They accounted for 68% of all doctorates, 81% of master’s degrees, and 49% of bachelor’s degrees (Table 1). This discrepancy can be attributed, in part, to differences in the chosen fields of study. Chinese students placed greater emphasis on scientific and technical disciplines, particularly engineering and medicine (each comprising 26 degrees or 10% of the total), as well as business and commercial sciences (35 degrees or 13%). These courses often led to at least a master’s degree and frequently a doctorate. In contrast, the American pioneers who were trained in the traditional collegiate system typically pursued a classical education in the liberal arts. Bachelor of Arts (B.A.) degrees represented 33% of all degrees obtained by American graduates, compared to 17% of all degrees obtained by Chinese students. Conversely, engineering and medicine accounted for only 6% of American curricula, with business representing a mere 2%. However, subsequent generations of Americans increasingly embraced the new professional courses offered by modern universities. Furthermore, over time, the level of education among Chinese graduates tended to increase in response to growing competition in the job market and higher expectations from employers in China and society at large.

Table 1: Degrees by nationality.

	Bachelor	Master	Doctorate	Certificate	Unknown
Chinese	61	104	55	5	9
American	90	30	22	9	29
Japanese	1	0	1	1	1

Despite the higher level of study achieved by Chinese students, their average length of study was generally shorter, around 3 years, compared to their American counterparts and to the regular four-year period of college study. Moreover, the time spent by the Chinese students in the United States tended to decrease over time, which reflects changing attitudes towards education in China. Following World War I, there was a trend to send more advanced students for postgraduate work,

facilitated by the development of Chinese universities during the Republican era.¹⁷ Among the entire population of American university men studied, the average length of study was 3.9 years, with significant variations depending on the field of study and the degree pursued. Students specializing in law, theology, and medicine often had longer study periods compared to those in business and engineering. Exceptions to the average study duration included cases of discontinuous periods of study or the conferral of honorary degrees long after the students had completed their studies. For example, Zhu Xiacun (朱霞邨) (Fred M.C. Chu), who obtained a degree in physical education at the Young Men's Christian Association (YMCA) College and the University of Chicago in 1918, returned to the United States ten years later to further his training at Pratt Institute in New York.

A total of 19 honorary degrees were granted to 15 individuals, encompassing 9 LL.D. (Doctor of Law), 9 D.D. (Doctor in Divinity), and 1 S.T.D. (Doctor in Sacred Theology). The degrees in theology were exclusively awarded to American missionaries, including Francis Hawk Pott, Carleton Lacy, and Emory Luccock. On the other hand, law degrees were conferred upon notable educators and officials of various nationalities. The first LL.D. awarded to a Chinese graduate by an American university, specifically Haverford, was granted to Li Zhaojiao (黎照铰) (J. Usang Ly), who served as the president of Jiaotong University (Jiaotong daxue 交通大學), in 1917. Initially, the recipients of honorary law degrees were predominantly professional educators and lawyers. However, in 1935, Oberlin College became the first American institution to honor a Chinese official, Kong Xiangxi (孔祥熙). Following World War I, Chinese universities also began bestowing honorary degrees upon prominent Chinese and American officials. St. John's University in Shanghai, as a private institution, heavily relied on tuition fees and private donations from its alumni. St. John's University granted law degrees to notable individuals such as U.S. Commercial Attaché Julean Arnold (1919), Chinese banker Chen Guangfu (陳光甫) (1929), and government official and financier Song Ziwen (宋子文) (1933). Support from Shanghai business elites and government officials became crucial after its separation from Kwang Hua University (Guanghua daxue 光華大學) in 1925 and its failure to register with the Ministry of Education in the early 1930s.¹⁸

¹⁷ Paul Meng Zhi, "The American Returned Students of China," *Pacific Affairs* 4, no. 1 (1931): 7.

¹⁸ Wen-Hsin Yeh, *The Alienated Academy: Culture and Politics in Republican China, 1919–1937* (Cambridge, Mass.; London: Council on East Asian studies, Harvard University, 1990), 65–77.

Employment Situation in 1936

The employment data available in the directory is partial. It only indicates the main current affiliation at the time of publication, which does not capture the full range of positions held by individuals throughout their lives. Information for 95 individuals is missing. However, even with this limited data, we can provide a snapshot of the occupations held by American university men in Nationalist China prior to the outbreak of the Sino-Japanese War (1937–1945). Most individuals were employed in the private sector, with 187 individuals (58%) working in various banks such as the National City Bank of New York, Bank of China, and Shanghai Commercial and Savings Bank. Many also held positions in the central government (37 individuals), universities (34 individuals), and voluntary organizations including the Young Men's Christian Association (YMCA), Red Cross Society, and China International Relief Society (28 individuals). Additionally, 17 Americans were employed by the U.S. government, serving in the Shanghai consulate, Department of Commerce, and Department of Agriculture. Ten individuals were affiliated with local institutions such as the Shanghai Municipal Council and the Chinese Municipality of Greater Shanghai. A few individuals were associated with health, military, and judicial institutions.

Chinese graduates tended to be more likely to work with American institutions compared to the opposite trend. Large multinational companies such as Standard Oil and Andersen Meyer showed a strong interest in hiring Chinese individuals who had received their education in the United States. However, the banking sector in China remained nationally compartmentalized. The National City Bank of New York primarily hired Americans, while the Shanghai Commercial and Savings Banks, established by Chinese banker Chen Guangfu, exclusively employed Chinese returnees. In the academic field, institutions like St. John's University and the University of Shanghai had a diverse faculty comprising both Chinese and American educators. These missionary institutions were undergoing a process of secularization during the Republican era and gradually replaced American pioneers with newly returned Chinese graduates. On the other hand, Jiaotong University, a national public university established in the late imperial years, did not hire any Americans from the studied population of American university men. Despite its emphasis on Western science and technology, Jiaotong University maintained a strong Chinese program, and nationalist sentiments grew among the student body under the Nanjing regime. Notably, politically radical institutions such as Shanghai University did not employ any American-educated individuals based on the available sample.¹⁹

¹⁹ Established in 1906 by American Baptist missionaries, the University of Shanghai, or Hujiang University (Hujiang daxue 滬江大學), formerly Shanghai Baptist College, shall not be confused

Government institutions experienced a similar process of replacement, with Chinese returnees gradually taking over roles previously held by foreign advisors. Since the late Qing dynasty, the Chinese government had relied on American advisors in various departments, such as the Salt Administration (Wendell Armour, Esson Gale, Oliver Lockhart), the Maritime Customs (Carl Neprud), and the Central Bank (Jo Fisher Freeman). However, during the Republican era, there was a shift towards employing Chinese returnees, particularly in strategically important ministries like finance, industry, and communications. Among the institutions in our dataset, the Shanghai Municipal Council stands out as the most multinational, employing Chinese (He Dekui 何德奎, Chen Heqin 陳鶴琴), American (Robert Bryan, S. Fessenden, R.P. Roberts), and Japanese (Idehiko Ibusuki) graduates of American universities. By contrast, the Chinese Municipality of Greater Shanghai and Japanese institutions relied exclusively on their respective foreign-educated nationals.

Matching Education with Employment: A Correspondence Analysis

Previous literature has highlighted the challenges faced by returned students in securing suitable employment upon their return to China. Many authors attribute these difficulties to the perceived inadequacy of foreign education in meeting the needs of the Republican era.²⁰ This study aims to contribute to this discussion by assessing the adequacy of American education using empirical data from the American university men of 1936. To achieve this, the study employs correspondence analysis, a statistical method that examines the relationships between categories within two variables, in this case, employment and education. By analyzing the data presented in a contingency table, correspondence analysis generates insights into the associations between these variables. The findings are typically visualized in a two-dimensional graphical form known as a biplot, as depicted in Figure 3.

The occupations of the American university men generally aligned with their academic training, as depicted in Figure 3a. This was particularly evident for graduates in medicine, who predominantly worked in health institutions, and graduates in business and commerce, who were primarily employed by private companies. Students in science and the humanities had a broader range of job opportunities,

with the short-lived (1922–1927) politically radical Shanghai University (Shanghai daxue 上海大學). On Shanghai University, see: Yeh, 129–66.

20 F.L. Hawks Pott, “Education of Chinese in the U.S.A.,” in *American University Men in China* (Shanghai: Comacrib Press, 1936), 8–10; Wang, *Chinese Intellectuals and the West, 1872–1949*, 170–71; Ye, *Seeking Modernity in China's Name*, 50–80.

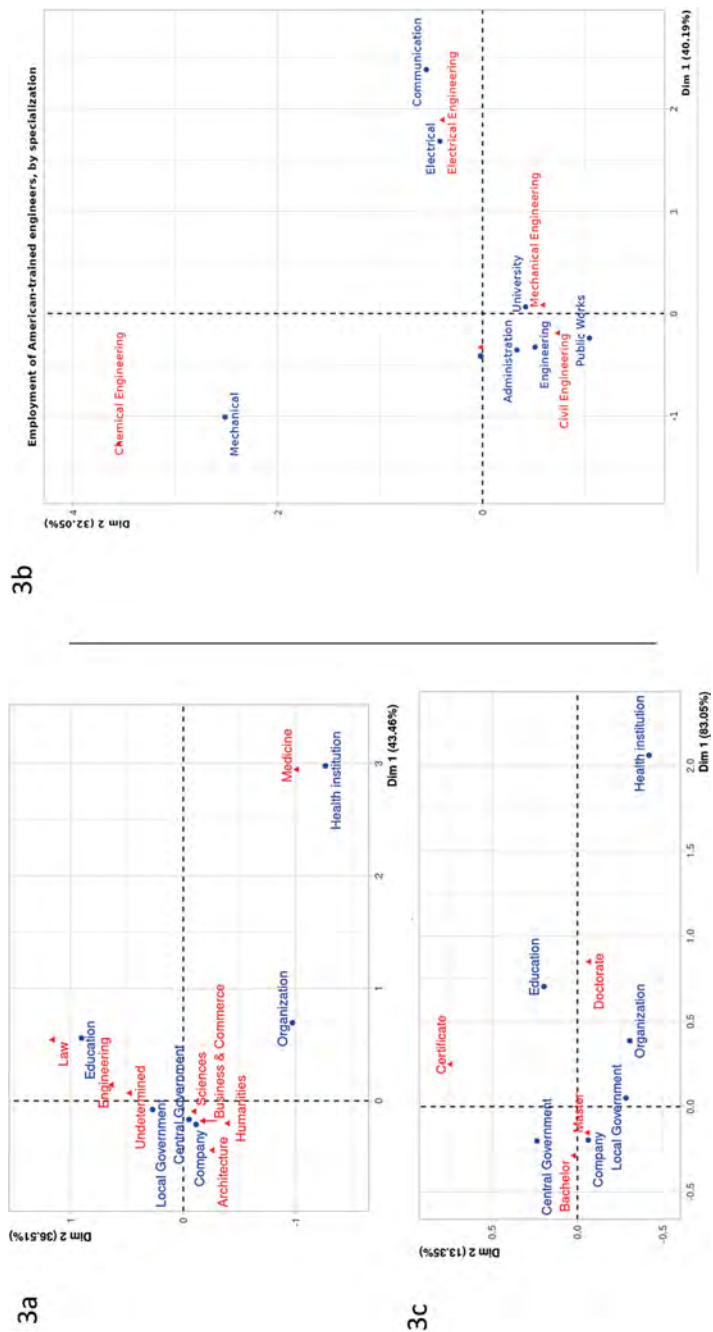


Figure 3: (a) Biplot showing the correspondence between sector of employment (blue) and discipline of graduation (red). When a particular sector is close to a particular discipline, it means that this sector recruits largely among graduates in this discipline. (b) Biplot showing the correspondence between the type of employment (blue) and the level of qualification (red). (c) Biplot showing the correspondence between sector of employment (blue) and subfield of graduation (red) among engineers. The code for the correspondence analyses is accessible at: https://bookdown.enpchina.eu/AUC/02_AUC_CA.html.

with options in both government service and the private sector. Graduates in law and engineering were more likely to find jobs in educational institutions, which may refer to distinct employment situations. For lawyers, teaching could serve as a pathway to a political career or be pursued alongside their private practice or consulting roles. Many lawyers held positions on university boards rather than actively teaching. The employment prospects for engineers varied depending on their area of specialization, as shown in Figure 3b. Electrical and civil engineers generally found suitable jobs in their respective fields, while mechanical and chemical engineers often sought employment in the private sector or temporarily took teaching positions until better opportunities arose.²¹ The situation began to shift in the 1930s with the establishment of the National Resources Commission (Quanguo ziyuan weiyuanhui 全國資源委員會), which offered new avenues for American-trained engineers in the high-level economic bureaucracy (see Section 4).

The final correspondence analysis (Figure 3c) explores the relationship between the level of qualification and the sector of employment. The biplot demonstrates that individuals with lower degrees (bachelor's and master's) were more likely to find employment in government and the private sector. In contrast, educational and health institutions tended to hire individuals with higher degrees (doctorates). The horizontal axis of the biplot highlights a subtle distinction between master's degree holders, who were often employed in local and foreign governments, and bachelor's degree holders, who found positions in ministries, as well as various industrial and financial enterprises (such as automobile, insurance, and tobacco).

When analyzing the employment situation, it is crucial to consider the age of individuals and the generational group to which they belong. Freshly returned graduates may not have immediately found employment matching their training, while pioneering graduates may have retired or changed occupations multiple times throughout their lives. In the third section of this chapter, a more nuanced approach will be adopted to consider the full range of positions individuals held over their lifetimes. This will provide a more comprehensive understanding of their career trajectories.

2 Educational Places

The objective of this section is to identify common educational patterns and uncover hidden relationships among students who studied at the same institutions. Instead

21 S.M. Lee, "In Engineering and Architecture," in *American University Men in China* (Shanghai: Comacrib Press, 1936), 90–106.

of focusing on individual records, we aim to process the academic records of all graduates systematically. To tackle the challenge of analyzing the multiple academic records of graduates who studied at different institutions, I adopted a novel approach based on the concept of *place* derived from network analysis. It is important to note that the term *place* here does not refer to physical locations. Instead, the concept of place draws inspiration from the notion of *structural equivalence* in network analysis, which was originally introduced by Harvard sociologists in the 1950s. In the 1990s, sociologist Narciso Pizarro further developed this concept, applying it specifically to two-mode networks.²² In this context, the notion of *place* refers to a group of individuals who share the exact same set of institutions where they pursued their studies. In other words, individuals belong to the same place if they attended the same university or combination of universities. Conversely, universities belong to the same place if they were attended by the same student or group of students.²³ The concept of places becomes particularly relevant under the following conditions: (1) when the data consists of two-mode relational data, such as club membership, interlocking boards, or co-participation in events; (2) when there is multiple membership, meaning individuals are connected to more than one institution; (3) when the range of membership per individual is not excessively wide; and (4) when the distribution of members across institutions is not heavily skewed. While the last two conditions are not strictly necessary, they facilitate the initial interpretation of places.

The use of places offers a powerful alternative to the two main approaches commonly used for analyzing affiliation or two-mode data. The first approach, which applies algorithms developed for one-mode networks, disregards the unique characteristics of two-mode data and introduces biases that have been discussed in previous literature.²⁴ The second approach involves projecting the original two-mode network into two separate one-mode networks.²⁵ Researchers typically focus on one projection (e.g., the network of students) while discarding the other (the

22 Narciso Pizarro, "Structural Identity and Equivalence of Individuals in Social Networks," *International Sociology* 22, no. 6 (2007): 767–92.

23 A more flexible approach to defining places introduces a tolerance threshold, denoted as k . This approach allows for "regular equivalence" rather than strict "structural equivalence." By setting a value for k , we allow for a certain degree of variation or difference between two academic trajectories. For example, if we set $k = 1$, we accept that two students may differ by one university in their academic trajectories (or two universities differ by one student).

24 Stephen P. Borgatti, "Two-Mode Concepts in Social Network Analysis," *Encyclopedia of Complexity and System Science* 6 (2009): 8279–91; Stephen Borgatti and Daniel Halgin, "Analyzing Affiliation Networks," *The Sage Handbook of Social Network Analysis* 1 (January 1, 2011).

25 M.G. Everett and S.P. Borgatti, "The Dual-Projection Approach for Two-Mode Networks," *Social Networks* 35, no. 2 (May 2013): 204–10.

network of universities) based on their research questions. However, this method has been shown to result in a loss of information and the creation of artificial clustering, which can introduce biases in the interpretation of the data.²⁶ In contrast, the place-based methodology, illustrated in Figure 4, offers two significant advantages. First, it allows for a reduction of the network without sacrificing information. Second, it maintains the inherent duality property found in two-mode networks.²⁷ As illustrated in Figure 4, this paper adopts an approach that consists of projecting the two-mode networks of places and universities into two one-mode networks: one connecting places through universities and the other connecting universities through places. Subsequently, these two projections are jointly analyzed. Given that popular software tools like Gephi and Cytoscape do not provide built-in functions for place-based analysis, we rely on the “Places” R package developed by Delio de Lucena.²⁸ To the best of our knowledge, this package is the only available library that enables advanced analysis using the place-based approach.²⁹

Among the 418 students and 147 universities in our population, we identified a total of 223 unique places, as listed in Table 2. These places represent distinct combinations of students and the colleges they attended. Single-student places, which perfectly correspond to individual students, dominate the dataset, accounting for 80% (179 places) of all places. Within these singular trajectories, 26% (48 places) consist of just one university, 59% (106 places) involve two universities, and 13% (25 places) include more than two universities. This prevalence of idiosyncratic places reflects the widespread adoption of the elective system in American higher education institutions during the late nineteenth century.³⁰ The elective system, which emphasized free choice among a diverse array of courses and universities, may have appealed to Chinese students for several reasons. Firstly, there had been increasing criticism of the examination system and its narrow curriculum focused on the Confucian

26 M E Newman, S H Strogatz, and D J Watts, “Random Graphs with Arbitrary Degree Distributions and Their Applications,” *Physical Review. E, Statistical, Nonlinear, and Soft Matter Physics* 64 (July 2001): 026118; Tao Zhou et al., “Bipartite Network Projection and Personal Recommendation,” *Physical Review. E, Statistical, Nonlinear, and Soft Matter Physics* 76 (n.d.): 046115; B. Uzzi and J. Spiro, “Collaboration and Creativity: The Small World Problem,” *American Journal of Sociology* 111 (2005): 447.

27 Sam Field et al., “Identifying Positions from Affiliation Networks: Preserving the Duality of People and Events,” *Social Networks* 28, no. 2 (May 2006): 97–123.

28 <https://lreps.sciencespo-toulouse.fr/new-r-package-places-structural-equivalence-analysis-for-two-mode-networks> (last consulted March 21, 2024).

29 The code for preparing the data and extracting the places can be consulted at: <https://bookdown.enpchina.eu/AUC/Places1.html>

30 John S. Brubacher and Willis Rudy, *Higher Education in Transition: A History of American Colleges and Universities*, 4th ed. (Routledge, 2017), 100–119.

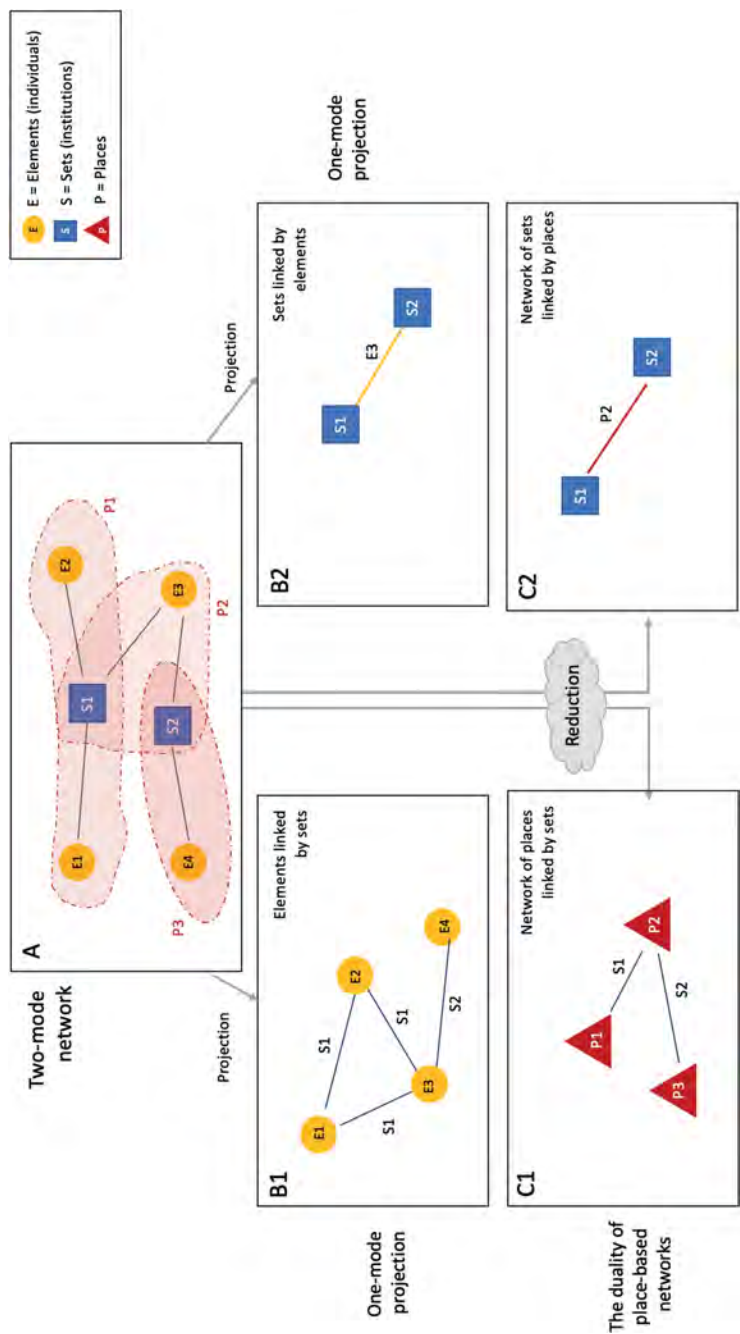


Figure 4: The place-based approach to bipartite networks.

classics since the late Qing dynasty. This criticism reached its peak during the New Culture and May Fourth Movements (1915–1919).³¹ Secondly, the ideal of individual freedom gained popularity during the early years of the Republic. Lastly, the elective system aligned with the broadening of the curriculum, which was necessary to meet the expanding needs of China's rapidly industrializing society.

Table 2: List of places, with the number of students (elements) and universities (sets) they include.

Place Number	Place Label	Nb Elements	Nb Sets	Place Detail
26	P026(4-2)	4	2	{Chu_Percy;Lee_Alfred S.;Liang_Louis K.L.;Sun_J.H.} - {Columbia;New York University}
27	P027(3-2)	3	2	{Au_Silwing P.C.;Yee_S.K.;Zee_Andrew} - {Chicago;Michigan}
28	P028(3-2)	3	2	{Chang_Ting-Chin;Hsueh_Wei Fan;Wong_Tse-Kong} - {Ohio State;Pennsylvania}
29	P029(3-2)	3	2	{Ho_Teh-Kuei;Sze_F.C.;Tsai_Thomas Wen-hsi} - {Harvard;Wisconsin}
30	P030(3-2)	3	2	{Huang_H.L.;Wang_K.P.;Welles_Henry H.} - {Columbia;Princeton}
31	P031(2-2)	2	2	{Chen_Kwan-Pu;Wong_I.K.} - {Pennsylvania;St. John's University}
32	P032(2-2)	2	2	{Jen_Lemuel C.C.;West_Eric Ralph} - {California;George Washington}
33	P033(2-2)	2	2	{Lee_Shee-Mou;Parker_Frederick A.} - {Harvard;Massachusetts Institute of Technology}
34	P034(2-2)	2	2	{Lin_Peter Wei;Ma_Y.C.} - {Columbia;Yale}
35	P035(2-2)	2	2	{Lum_Joe W.;Wu_Jack Foy} - {Columbia;Stanford}
36	P036(2-2)	2	2	{Ngao_Sz-Chow;Speery_Henry M.} - {Columbia;Michigan}
37	P037(2-2)	2	2	{Sze_Ying Tse-yu;Zhen_M.S.} - {Columbia;Massachusetts Institute of Technology}
38	P038(2-2)	2	2	{Tsao_Y.S.;Yen_Fu-ching} - {Harvard;Yale}

The names of the students and universities are specified in the “PlaceDetails” column. Only the 13 most important places (involving at least two students and two colleges) are displayed. The complete table is accessible on GitHub: <https://github.com/carmand03/american-university-men-china>

³¹ Benjamin A Elman, *Civil Examinations and Meritocracy in Late Imperial China* (Harvard University Press, 2013).

The choices made by the students, however, were not purely random, but rather influenced by a range of factors that shaped their decision-making process. These factors include personal aspirations, the educational offerings provided by institutions, financial limitations, family strategies, and even government policies. While these factors may not be explicitly evident from the data alone, a place-based approach helps uncover underlying patterns and connections that would otherwise go unnoticed.

Among the 44 places involving two or more students (20%), 23 places (52%) consisted of both Chinese and American students, indicating a significant level of cross-cultural interaction and collaboration. This highlights that Chinese students had greater opportunities to engage with their American counterparts, irrespective of their race and national origins, unlike other minority groups or individuals from lower social classes. Four of these binational curricula included multiple universities. For instance, Henry Welles, Huang Hanye (黃漢頁), and Wang Boheng (王伯衡) studied at both Princeton and Columbia (P030). Zhen Youlian (甄友廉) and Eric Ralph West attended the University of California and George Washington University (P032). Frederick Parker and Li Ximou (李熙謀) pursued their studies at Harvard and the Massachusetts Institute of Technology (P033). Finally, Ao Shizhou (敖士洲) and Henry M. Speery both attended Columbia and Michigan (P036).

Additionally, there were 12 places that involved only American students (27%), representing educational paths specific to American students, and 9 places that involved only Chinese students (20%), reflecting specifically Chinese academic trajectories. Among the places involving only American students, the majority revolved around a single university, indicating a focused academic trajectory. While some universities like Brown, Colorado, Georgetown, Nebraska, Reed, Washington, and Wisconsin also received Chinese students, these Chinese students combined their education at these institutions with one or more additional universities. Only five institutions – Dartmouth, Naval Academy (Annapolis), North Carolina, Trinity, Wesleyan – were exclusively attended by American students in our sample. It should be noted that Chinese students were not entirely prohibited from military and naval academies, but their admission was subject to stringent conditions due to political factors.³² Other institutions, culturally more conservative, displayed less openness to non-American citizens. The places involving only Chinese students will be examined more extensively in the subsequent sections.

32 John Wands Sacca, "Like Strangers in a Foreign Land: Chinese Officers Prepared at American Military Colleges, 1904–37," *Journal of Military History* 70, no. 3 (July 2006): 703–42.

Typology of Places

Being affiliated with the same place does not necessarily guarantee that students had direct physical interactions or encounters on campus during their academic studies. The concept of “place” can encompass various types of relations and exhibit different degrees of proximity. To assess the relative strength of places, it is beneficial to classify them into four distinct categories based on the field of study and the period of enrollment (as outlined in Table 3).

Table 3: Typology of places.

	Same field	Different field
Same period	Type A – Strong potential for classroom interaction (4 places, 9%)	Type B – Potential for extracurricular encounters (8 places, 18%)
Different period	Type C – Potential for later collaboration (7 places, 16%)	Type D – Shared past experience (25 places, 32%)

Type A places represent the strongest potential for direct interaction, as they involve students who enrolled in the same programs at the same time, likely attending the same classes. In our population, there are four places of this type, all featuring students in sciences or engineering who graduated during or after World War I. One notable place (P037) includes Chinese railway engineers Shi Ying (施瑩) (Tse-yu Ying Sze) and Chen Mingshou (陳明壽) (M.S. Zhen), who were contemporaneous students at the Massachusetts Institute of Technology (MIT) and Columbia University from 1914 to 1916. They both went on to work for the National Southern Railway Locomotive Department in 1936, showcasing the strong connection formed during their shared academic journey. Another strong place (P173) involves two American students, U.S. Harkson and H.P. Miller, who earned their Bachelor of Science degrees at the University of Nebraska in 1916. Furthermore, two of the aforementioned binational places, namely Li Shimou and Frederick Parker, and Ao Shizhou and Henry Speery, also fall under this category.

Type B places were characterized by potential interactions outside the classroom setting. While students in these places may not have enrolled in the same courses, their paths could have crossed on campus through various extracurricular activities. Modern universities placed a strong emphasis on these activities, such as athletics, music, drama, literary societies, and fraternities, and many Chinese

students actively participated in these endeavors.³³ An illustrative example of a Type B place is represented by physician Yan Fuqing (顏福慶) (Yen Fu-ching) and businessman Cao Maoxiang (曹蜚祥) (Y.S. Tsao), who attended Yale and Harvard between 1909 and 1914 (P038). Although they pursued different academic paths, their shared presence at these prestigious institutions provided opportunities for extracurricular interactions and engagements.

Type C places refer to students who attended the same universities and graduated in the same disciplines but at different periods of time. Although these students did not have the opportunity to physically interact on campus, their shared educational background created a potential for future collaborations and intergenerational connections. For instance, economist Ma Yinchu (馬寅初) graduated from Yale and Columbia in 1910–1914, a decade before banker Lin Zhang (林障) completed his studies at the same institutions in 1920–1922 (P34). Another example of a Type C place involves Chinese physician Lin Zaoyuan (林藻垣) (Joe W. Lum) and dental surgeon Wu Zhihui (伍直誨) (Wu Jack Foy). Both individuals initially attended Stanford University before transitioning to Columbia University (P035). Type C places can also center on a single university, such as American graduates of the Annapolis Naval Academy (P163), Chinese and American engineers trained at Purdue University (P168), and American businessmen educated at Reed (P165) and Trinity (P170).

Type D places represent the weakest form of association, bringing together students from different generations who pursued diverse academic disciplines at the same *alma mater*. For instance, place P161 exemplifies a Type D place where three graduates from Stanford University, spanning a period between 1905 and 1922, pursued distinct fields of study ranging from engineering to the humanities. These multigenerational and multidisciplinary places encompass a significant number of students, often exceeding ten individuals, who share a common educational institution.

Students' Flows

The elective system in American universities facilitated a high degree of geographical mobility among students. Within the dataset of 144 places involving multiple universities, 40% of them consisted of students who transferred within the same region (East, Midwest, West), accounting for 26% of all places. The remaining 60%

33 Brubacher and Rudy, *Higher Education in Transition*, 39–56, 120–39; Ye, *Seeking Modernity in China's Name*, 191–212.

of places involved students who crossed different regions, representing 39% of all places. While the macro-level analysis in the first section suggested a general trend of Chinese students shifting away from the East, a closer examination at the micro-level of places and individuals reveals more intricate patterns of mobility.

Table 4 highlights the strongest connections between universities and the students who traversed them, shedding light on the most frequently taken paths. Notably, the most common route links Columbia and New York Universities, a connection likely facilitated by their proximity. In total, seven Chinese students across four places (P003, P016, P018, P026) attended both universities, sometimes in conjunction with other institutions like Cornell (P016), Hawaii (P018), Pennsylvania, and Haverford (P003). These individuals represent the post-Boxer generation, graduating between 1909 and 1935. Among these students, Li Zhaojiao and Sun Ruihuang (孫瑞璜) began their studies at New York University (NYU) and later transferred to Columbia. In contrast, the remaining five individuals initially enrolled at Columbia and subsequently moved to NYU. All of them pursued majors in the fields of science or business administration. After completing their studies at NYU, Li Zhaojiao furthered his education in law at Pennsylvania and Haverford. When examining their occupations in 1936, two distinct groups emerged among these individuals. Four of them pursued careers in banking or business, namely Zhu Boquan (朱博泉), Li Shiheng (李士衡), Liang Guanliu (梁官榴), and Sun Ruihuang. The other three individuals, Li Zhaojiao, Liu Chenglin (劉承霖), and Lin Qing (林馨), pursued careers in education. Notably, all three were employed by Jiaotong University in Shanghai.

Another notable path involves two places that bridge the East and West coasts, representing long-distance connections. Both Kuang Fuzhuo (鄺富灼) and Sun Ke (孫科), the son of Sun Yat-sen, attended the Universities of California and Columbia. Similarly, Kuang Fuzhuo and Kuang Yaowang (鄺耀望) studied at Pomona and Columbia. Despite the generational gap between them and their different fields of study, all three students followed the same trajectory from the West Coast to the East Coast. Their paths diverged after their return to China. Kuang Fuzhuo, who obtained a Bachelor of Literature from the University of California and a Master of Arts from Columbia, went on to become the English editor of the Commercial Press and a prominent leader in the Young Men's Christian Association (YMCA). Sun Ke pursued a career in politics, serving as the Mayor of Guangzhou and holding a seat in the Legislative Yuan in 1936. Kuang Yaowang, with a degree in Business Administration, worked for various government agencies such as the Bureau of Trade-marks in Nanjing and the Nanjing City Planning Bureau of Health. Additionally, he

Table 4: Most frequent academic paths (strongest ties between places and colleges).

Path	Weight	Place	Student's names	Period of study
Columbia-NYU	4	P003(1-4)	Li Zhaojiao	黎照皎 1912-1917
Columbia-NYU	4	P016(1-3)	Liu Chenglin	劉承霖 1918-1932
Columbia-NYU	4	P018(1-3)	Lin Qing	林馨 1922-1927
Columbia-NYU	4	P026(4-2)	Zhu Boquan	朱博泉 1919-1929
Columbia-NYU	4	P026(4-2)	Percy Chu	李士衡 1921-1923
Columbia-NYU	4	P026(4-2)	Lee Alfred S.	梁宜榴 1922-1924
Columbia-NYU	4	P026(4-2)	Liang Louis K.L.	孫瑞璜 1923-1924
Columbia-NYU	4	P026(4-2)	Sun J.H.	鄭富灼 1902-1906
Columbia-California-Pomona	2	P007(1-3)	Fong F. Sec.	孫科 1915-1917
Columbia-California	2	P019(1-3)	Sun Fo	鄭耀望 1925-1928
Columbia-Pomona	2	P085(1-2)	Edward Y. Kwong	金德明 1922-1932
Pennsylvania-St. John's-Hawaii	2	P015(1-3)	Kam Edwin	程莘焜 1930-1932
Pennsylvania-St. John's	2	P031(2-2)	Ching Chi Kwan	王以敬 1924-1930
Pennsylvania-Hawaii	2	P052(1-2)	Wong I.K.	劉湛恩 1920-1929
Columbia-Chicago	2	P017(1-3)	Liu H.C.E.	夏少平 1925-1928
Columbia-Chicago	2	P072(1-2)	Hsia Jui-Ching	黎照皎 1912-1917
Pennsylvania-NYU	2	P003(1-4)	Ly J. Usang	唐寶璜 1909-1912
Pennsylvania-NYU	2	P121(1-2)	Tang Paul	

served as an English instructor at the Central Military Academy.³⁴ Considering the similarities in their surnames, it is highly likely that Kuang Yaowang was a family member of Kuang Fuzhuo, potentially his son or nephew. This finding supports previous observations regarding the intergenerational influence and the impact of studying abroad within the same family.³⁵

An intriguing triangular trajectory emerges, connecting Hawaii, St. John's University in Shanghai, and the University of Pennsylvania. This trajectory involves three individuals: Jin Deming (金德明), Cheng Pinkun (程莘焜), and Wang Yijing (王以敬). Jin and Cheng attended both St. John's University and the University of Pennsylvania, while Wang studied in Hawaii and later also attended the University of Pennsylvania, like Jin. Notably, the University of Pennsylvania served as the destination for all three individuals. Jin and Wang specialized in medicine, whereas Cheng pursued studies in banking. It is likely that both Jin and Cheng were born in Hawaii, as they began their studies on the island before transferring to the University of Pennsylvania, with Jin also spending some time at St. John's University. Their periods of study overlapped significantly. In 1936, Cheng was employed at the Shanghai Commercial & Savings Bank, indicating a career in the banking sector. Wang and Jin were likely running their own medical practices at the time.

The direction of flows matters as well. Figure 5 illustrates the most significant flows between the first two universities attended by the students. While a considerable number of students (21) remained at the same university for both degrees, a larger group (26) chose to transfer to a different university. The most prominent flow was observed from Columbia University to New York University, as previously discussed, indicating a strong connection between these two institutions. Another notable flow was from Ohio State University to the University of Pennsylvania, involving three graduates specializing in business (Xue Weifan 薛維藩) or engineering (Zhang Tingjin 張廷金, Wang Zhigang 王志剛). In most cases, Columbia University emerged as the primary destination for students seeking a second degree. With its extensive range of academic programs and prestigious graduate schools, Columbia attracted students from seven different institutions, including the University of Chicago (lawyer Liu Zhanen 劉湛恩, entrepreneur Xia Shaoping 夏少平), New York University (businessmen Sun Ruihuang and educator Li Zhaojiao), Massachusetts Institute of Technology (railway engineers Shi Ying and Chen Mingshou), the University of Michigan (bankers Ao Shizhou and Henry Speery), Princeton University (lawyer Huang Hanye 黃漢頁 and educator Henry Welles), Stanford University

³⁴ John Benjamin Powell, *Who's Who in China* (Shanghai: China Weekly Review, 1936), 126–27.

³⁵ Wang, *Chinese Intellectuals and the West, 1872–1949*, 507–9. Cécile Armand, “Reshaping the Chinese Ladder of Success in the Era of Globalization: Family Strategies and Social Mobility of Early American-educated Chinese (1850–1917)”, *Twentieth-Century China* (forthcoming).

(physicians Wu Zhihui and Lin Zaoyuan), and Yale University (economist Ma Yinchu and banker Lin Zhang). Furthermore, there were bilateral flows between specific universities. Harvard University and the University of Chicago emerged as significant destinations. Harvard attracted two students from the University of Wisconsin (banker Shi Boqun 施博羣 and municipal officer He Dekui) and two from Yale University (physician Yan Fuqing and philanthropist Cao Maoxiang). The University of Chicago drew two law graduates from the University of Michigan (Ou Zhaorong 區兆榮, Yu Zhaoqi 余兆麒) and one science graduate (Xu An 徐安).

When students pursued further studies beyond their second degree, the pattern shifted. While Columbia University remained a common destination for students with two degrees, it often served as a temporary stop for postgraduate students who were seeking a PhD degree or wanted to diversify their academic experiences. Among the students, six chose to stay at the same university for their third degree (either Columbia or the University of Chicago), while the majority transferred to a different institution. The University of Chicago was particularly attractive during this period, emerging as a leading research university that produced a significant number of PhDs. Many students chose to continue their studies at Chicago, drawn by its strong academic reputation and research opportunities.³⁶ Additionally, the University of Pennsylvania and Stanford University were popular choices for advanced training in professional fields such as business and medicine, which were not widely offered at other institutions at the time. Harvard University had an equal exchange of students, receiving two and sending out two for further studies. On the other hand, the University of California experienced a net loss of students, with more students leaving the institution for their advanced degrees than those coming in.

From Students' Flows to Academic Communities

At a broader level, the itineraries of students form clusters or communities of more densely connected universities. These clusters are influenced by various factors, including the relative prestige of the institutions, their geographical proximity, and their areas of specialization. From the network of institutions, we can identify eight major communities or groups that share common characteristics

³⁶ Arthur M. Cohen and Carrie B. Kisker, *The Shaping of American Higher Education: Emergence and Growth of the Contemporary System*, 2nd ed, Jossey-Bass Higher and Adult Education Series (San Francisco, CA: Jossey-Bass, 2010), 115; Frederic Xiong, "The Untold Stories: The University of Chicago-Educated Chinese PhDs of 1915–1960," 2019, 1–61.

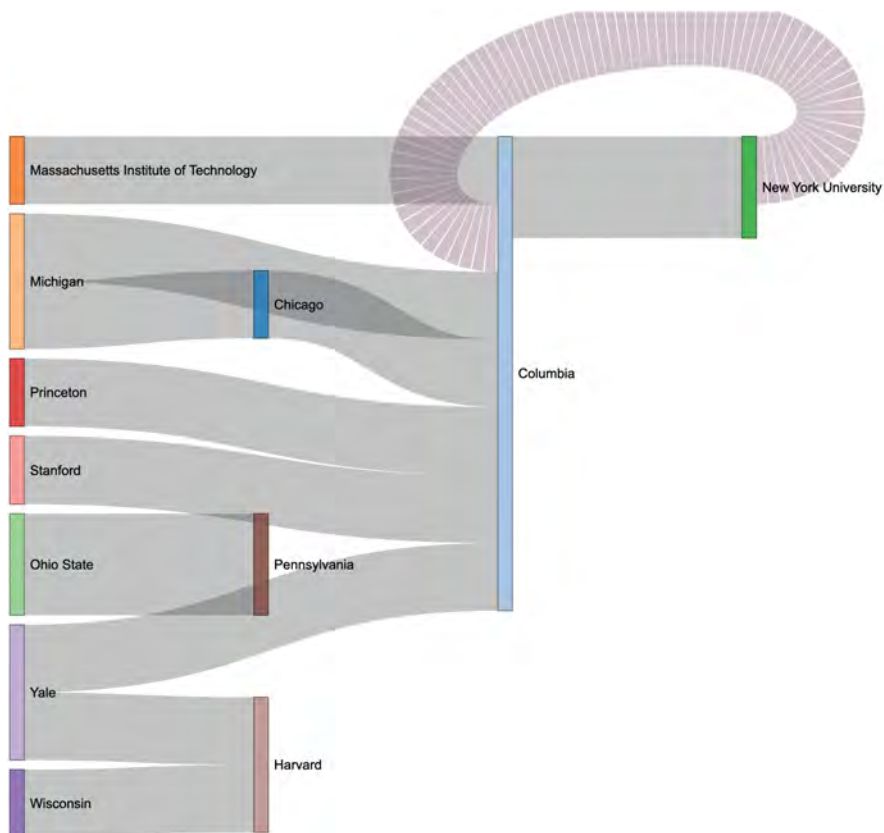


Figure 5: Flow chart showing the first and second university attended. The code for making the flow charts is accessible: https://bookdown.enpchina.eu/AUC/Places5_Flows.html.

and patterns of student mobility.³⁷ These communities can be grouped into three main categories based on their topological structure and connectivity within the network.

³⁷ In this study, the Louvain algorithm is utilized to detect communities within the network of institutions. The choice of the Louvain algorithm is based on several iterations and comparisons with other algorithms. Through this process, the Louvain algorithm consistently produced the highest modularity score indicating the presence of meaningful and distinct communities within the network. Furthermore, from a hermeneutic perspective, the communities identified by the Louvain algorithm align with our research objectives and provide valuable insights into the underlying structure of student mobility patterns. The code for extracting the communities is accessible at: <https://bookdown.enpchina.eu/AUC/Places3.html>

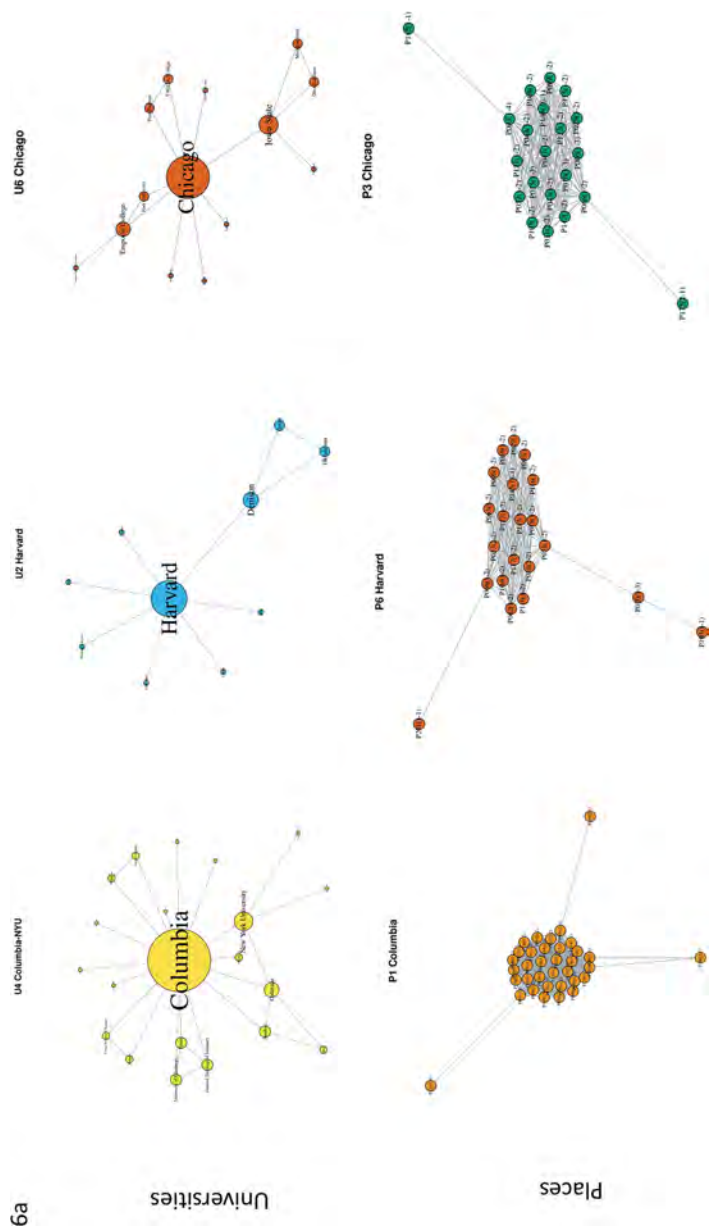


Figure 6: Clusters of universities and corresponding clusters of places. 6a – Star clusters of universities and hairball of places: Columbia, Harvard, Chicago. 6b – Chain-type clusters of universities and places: MIT-Purdue (engineers), Princeton-Wooster-Northwestern (Americans). 6c – Hybrid clusters of universities and places: California-Cornell, Yale-Penn, Michigan-Illinois. The code for extracting the communities and their metrics is accessible at: <https://bookdown.enpchina.eu/AUC/Places3.html>.

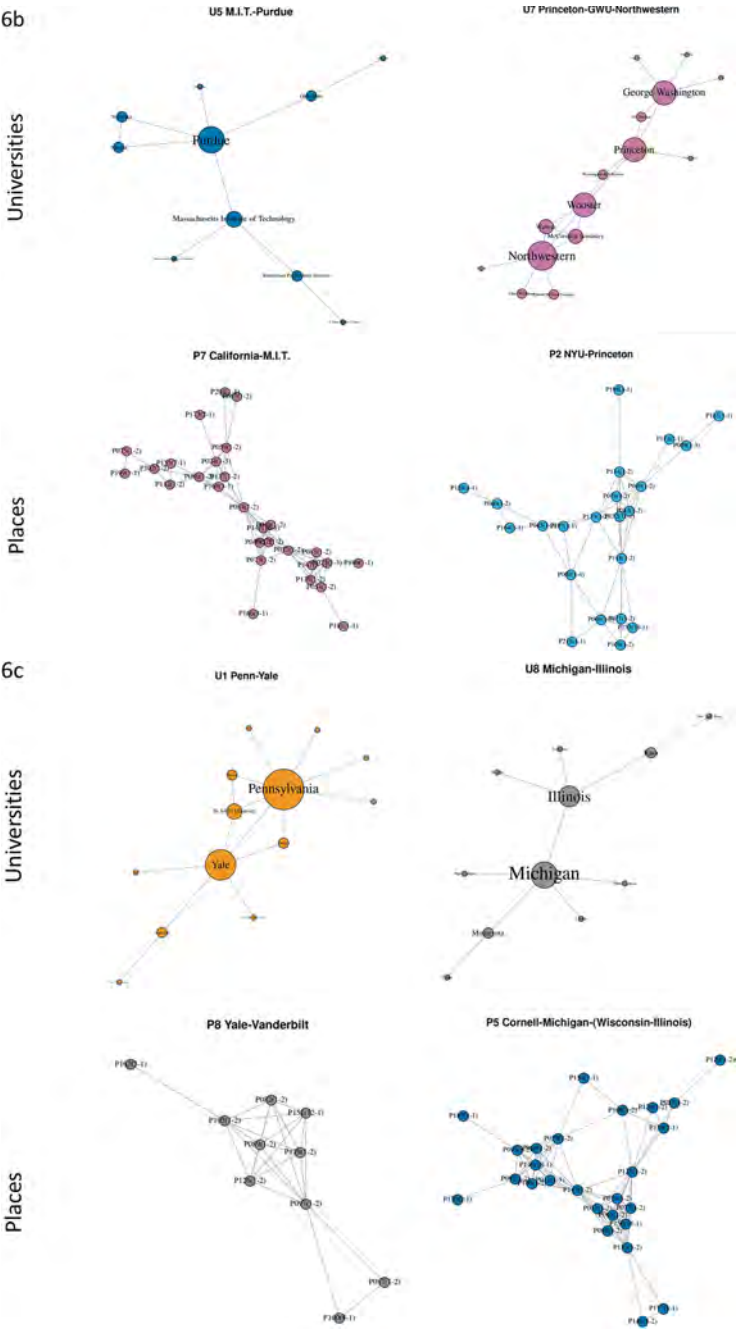


Figure 6 (continued)

a. The star networks observed in this study are characterized by a prominent and highly influential university that attracts students from a wide range of smaller institutions. Columbia University serves as a prime example of such a network, but Harvard and Chicago also exhibit similar characteristics. These universities share a common feature of having developed into comprehensive institutions with diverse academic offerings and exceptional resources for postgraduate research. Their reputation and extensive curriculum make them attractive destinations for students seeking a broad educational experience.

b. Chain networks can be observed in two distinct scenarios. First, in specialized curricula such as engineering and technical studies, institutions like MIT and Purdue University create chains where student mobility is limited due to the specialized nature of their programs. Second, in cases where American students are scattered across numerous peripheral institutions with little coherence in their curricula, chain networks also emerge.

c. Hybrid structures comprise two equally central institutions that have established their own networks of feeder colleges. These institutions not only exchange students but also complement or compete in terms of program offerings. For example, Cornell and the University of California attracted students who navigated between the two institutions due to their strong programs in science, engineering, and agriculture. Similarly, Yale students often transferred to the University of Pennsylvania after obtaining their undergraduate degrees to pursue further studies in law, medicine, or business. It is noteworthy that, except for Yale and Penn, which have transformed from colonial colleges to modern universities over the years, hybrid communities typically involve recently established public or semi-public institutions like the University of California, Michigan, and Cornell, which offer more accessible alternatives to private elite universities such as Harvard and Columbia.³⁸

Network Formation and University Ranking Over Time

The emergence of the dual network comprising places and universities was not an immediate occurrence but rather a gradual process that unfolded over the four decades under examination. This process can be divided into three distinct phases, each influenced by significant political, institutional, and social changes in

³⁸ The two state universities of Michigan and California were founded in 1837 and 1868, respectively. Cornell University was established in 1868 with both private and public funds. Brubacher and Rudy, *Higher Education in Transition*, 143–73.

both China and the United States (as illustrated in Figure 7). The inaugural phase (1883–1908) predates the initiation of the Boxer Indemnity Program and is characterized by the presence of primarily idiosyncratic and “weak” places that did not involve significant student interaction (Type D). During this phase, four major universities or groups of universities emerged as distinct components: Columbia, Harvard, Chicago, and Michigan. These institutions held central positions in the incipient network, although the network itself had not fully developed. The second phase (1909–1919) witnessed the formation of a more structured network. New poles of influence emerged, particularly in the Northern and Midwestern regions of the United States, with universities like Wisconsin and Northwestern gaining prominence. Additionally, connections were established between the early centers, with Columbia University assuming a dominant role in a core cluster of prestigious institutions. These connections were characterized by strong places involving classmates and extracurricular encounters (Type A or B). In the final phase (after World War I), the network continued to expand and densify. While the pool of central universities remained relatively stable, the average path length between institutions increased, indicating greater complexity in academic trajectories. Centrality among the top institutions became more evenly distributed, with Harvard and Pennsylvania challenging Columbia’s previous dominance. Additionally, some institutions, such as Northwestern University, diminished in prominence within the main component of the network.

From the graph visualizations, it becomes apparent that certain universities hold a more central position within the network compared to others. The ranking process of universities can be assessed by calculating their centrality scores, which measure their level of connectivity and influence in the network of universities linked by curricula (Table 5). Four common metrics are used in this research:

- **Degree centrality** measures the number of connections or ties each university has with other universities in the network. It can be interpreted as a measure of university popularity or the extent to which a university is actively connected to other institutions.
- **Eigenvector centrality** considers not only the number of connections but also the importance of those connections. It quantifies the extent to which a university is connected to other influential universities in the network. Universities with high eigenvector centrality are connected to other highly influential institutions, indicating their own influence and prestige.
- **Betweenness centrality** measures the extent to which a university acts as a bridge or intermediary between other universities in the network. It quantifies the university’s brokering power or the frequency with which it falls on the shortest path between other universities. Universities with high betweenness

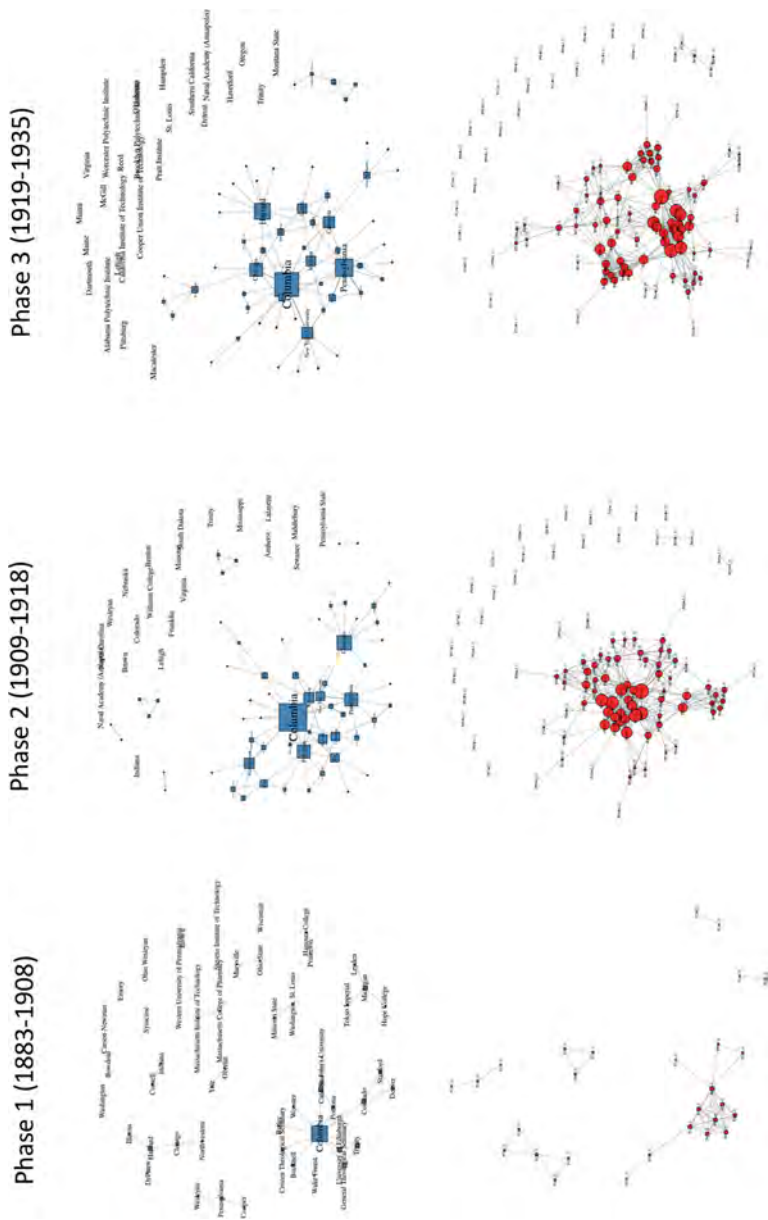


Figure 7: Evolution of academic networks over time (1) Phase 1 (1882–1908): From the aborted Chinese Educational Mission (CEM) to the First Remission of the Boxer Indemnity (2) Phase 2 (1909–1918): From the First Boxer Remission to WWI (3) Phase 3 (1919–1935): post-WWI cohorts. The code for preparing the data and building the temporal networks is accessible at <https://bookdown.enpchina.eu/AUC/Places4.html>.

centrality play a crucial role in connecting different parts of the network and facilitating communication and collaboration between institutions.

- **Closeness centrality** assesses the proximity or accessibility of a university to all other universities in the network. It measures how quickly information or influence can spread from one university to another through direct or indirect connections. Universities with high closeness centrality are considered central in terms of being well-connected and easily reachable within the network.

These scores are computed for each period individually as well as for the entire period under study. In a second step, principal component analysis (PCA) and hierarchical clustering are applied to identify distinct positional profiles of universities.³⁹ Four main groups of universities emerge from this analysis, as depicted in Figure 8. Among them, Columbia University stands out as consistently central throughout all periods. The Universities of Chicago and Pennsylvania experienced a steady growth in their centrality scores and emerged as prominent universities, particularly in the last phase (cluster 8). On the other hand, Harvard, California, and Michigan initially experienced a decline in their centrality scores during the second phase, but they regained their prominence after World War I (clusters 6 and 7). In contrast, Princeton, Yale, and Cornell witnessed a rise in their centrality scores during the second phase but subsequently declined after the war (clusters 4 and 5). This indicates a fluctuation in their position and influence within the network. The remaining universities in clusters 1, 2, and 3 generally remained marginal within the network, either due to their focus on specific courses or their predominantly American student population. Trinity College and Colorado School of Mines, for example, were more specialized institutions, while universities like Brown, Oberlin, and Washington had a higher proportion of American students. Finally, MIT formed a small, endogenous community characterized by its high closeness centrality throughout the entire period. This indicates that MIT was highly connected within its own network, likely due to its strong specialization in engineering.

The varying centrality of universities can be attributed to several factors. The three most central universities, Columbia, Pennsylvania, and Chicago, shared certain characteristics that contributed to their prominence in the network. These universities offered comprehensive curricula and had excellent research facilities, making them attractive options for many students pursuing PhD degrees.

³⁹ PCA is a statistical technique for reducing the dimensionality of a multivariate dataset. The data is reduced in two or more principal components, which can be visualized graphically with minimal loss of information. Hierarchical clustering is applied in the second step to identify groups of universities that share similar characteristics.

Table 5: Most central universities, ranked according to the four most common metrics in network analysis: degree (a measure of university popularity), eigenvector (a measure of its influence), betweenness (a measure of its brokering power), and closeness centrality (a measure of its accessibility).

University	Degree	Degree normalized	Eigenvector	Betweenness	Closeness	Region	Rank
Columbia	39	0.3786407767	1	2176.7154650905	0.0050761421	EAST_COAST	1
Chicago	20	0.1941747573	0.4721428323	1324.8046620047	0.0042016807	MIDWEST	2
Pennsylvania	20	0.1941747573	0.5088465965	669.3177849928	0.0041841004	EAST_COAST	2
Harvard	18	0.1747572816	0.3652536189	977.8054501055	0.0046728972	EAST_COAST	3
California	14	0.1359223301	0.4282759599	469.4157869908	0.004048583	OTHER_US	4
New York University	12	0.1165048544	0.6514768131	341.1486874237	0.0037593985	EAST_COAST	5
Cornell	11	0.1067961165	0.3049698595	381.8674963925	0.0040983607	EAST_COAST	6
Michigan	10	0.0970873786	0.2651988566	452.1047119547	0.0042735043	MIDWEST	7
Northwestern	10	0.0970873786	0.2701145425	256.3597735598	0.0040160643	MIDWEST	7
Princeton	10	0.0970873786	0.2572236301	503.9079087579	0.0041152263	EAST_COAST	7
Yale	10	0.0970873786	0.2798545083	516.8193528694	0.0043103448	EAST_COAST	7
Illinois	8	0.0776699029	0.2251968178	364.4182539683	0.003968254	MIDWEST	8
Wisconsin	7	0.067961165	0.2451503199	215.2418470418	0.0042735043	MIDWEST	9
George Washington	6	0.0582524272	0.0662202907	318.8964646465	0.003257329	EAST_COAST	10
Purdue	6	0.0582524272	0.0876531015	225.0357142857	0.0033898305	MIDWEST	10
Wooster	6	0.0582524272	0.1488834804	98.1406593407	0.0037313433	MIDWEST	10

Only the 16 most central universities are displayed. The complete table with the centralities by period is accessible on GitHub: <https://github.com/carmand03/american-university-men-china/tree/main/Tables/Places>

Additionally, they had renowned graduate schools in law, business, medicine, and architecture, which appealed to the Shanghai business and professional elites who constituted a significant portion of the American university men population. Furthermore, the strategic location of these universities in major cities such as New York, Chicago, and Philadelphia provided graduates with abundant opportunities to establish business contacts and gain practical work experience with leading firms. Columbia students, in particular, benefited from the proximity of other esteemed learning centers such as Rochester and New York Universities, which offered supplementary programs in fields like business administration and social sciences. Finally, being situated in New York City, Columbia was a hub for influential organizations and think tanks focused on China, such as the Chinese Christian Students' Association, the Chinese Students' Alliance, and the China Institute of America. The University of Chicago's prominence can be attributed in part to a substantial donation from the Rockefeller Foundation, which provided scholarships to Chinese students and demonstrated a strong interest in China.⁴⁰ Chicago's emphasis on applying knowledge for human service and its openness to the global community also resonated with the emerging generation of Chinese students who were eager to contribute to the new Republic. Additionally, all three universities had established partnerships with various Chinese institutions. For example, Columbia Teachers' College had collaborations with Tsinghua (Qinghua daxue 清華大學) and Nankai Universities, while the University of Pennsylvania had affiliations with St. John's University (Figure 6c – U1).

During the early phase, Harvard, California, and Michigan held high centrality primarily due to their large numbers of American students, as Chinese students had not yet replaced them to a significant extent. In the second phase, these universities either experienced a decline in the number of students or the students they did attract tended to complete their entire curriculum at the same institution. However, after World War I, California and Michigan saw a resurgence in their centrality, thanks to their strong connections with other universities, although not necessarily the most central ones such as George Washington, Georgetown, or Stanford. Moreo-

40 Ma Qiusha 马秋莎, *Gaibian Zhongguo Luokeyeifei jijinhui zai Hua bainian* 改变中国: 洛克菲勒基金会在华百年 [Changing China: 100 Years of the Rockefeller Foundation in China] (Guilin: Guangxi shifan daxue chubanshe, 2013); Mary Brown Bullock, *An American Transplant: The Rockefeller Foundation and Peking Union Medical College* (Berkeley: Univ. of California Press, 1980); Yung-chen Chiang, *Social Engineering and the Social Sciences in China, 1919–1949* (Cambridge University Press, 2001); Yi-Tang Lin, "Navigating between Political Authorities: Chinese Rockefeller Fellows in Biology and Chemistry and Their Career Trajectories from 1949 to 1966," in *Knowledge, Power, and Networks: Elites in Transition in Modern China*, ed. Cécile Armand, Christian Henriot, and Huei-min Sun (Leiden: Brill, 2022), 289–321.

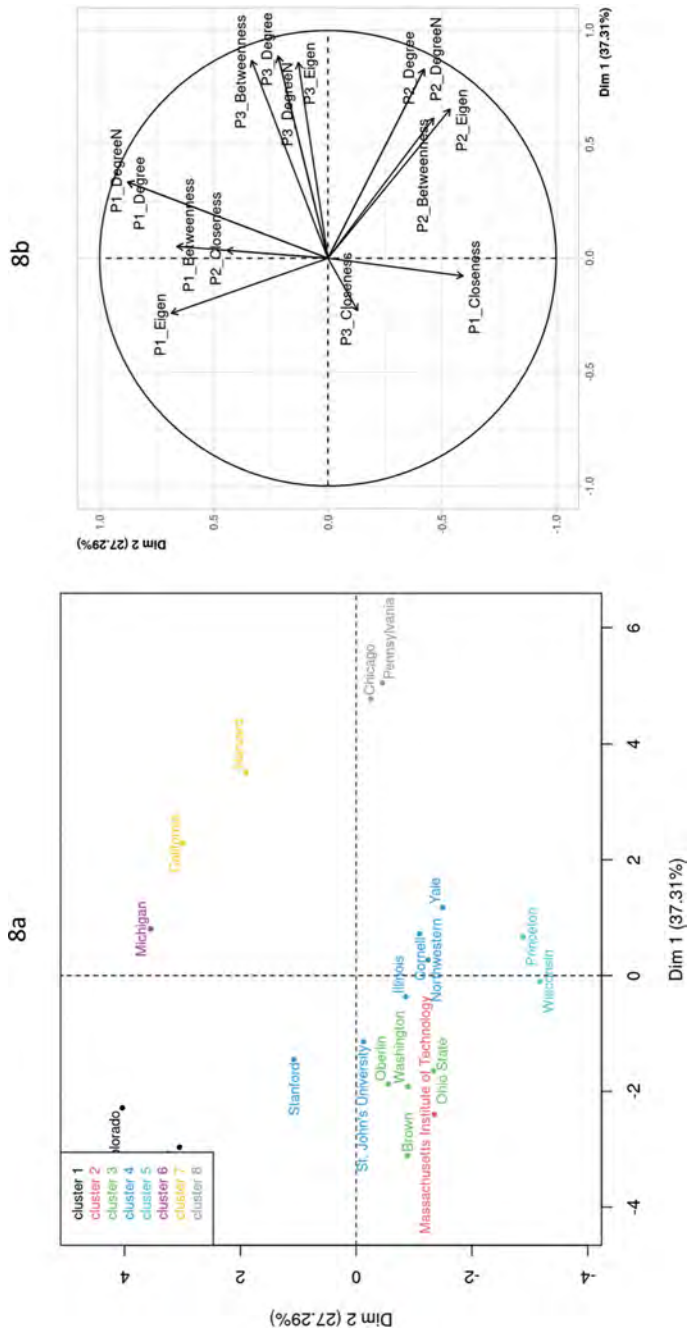


Figure 8: Principal Component Analysis (PCA) on the network centrality scores of the universities (degree, eigenvector, betweenness, and closeness centralities). Note: Columbia is excluded. (a) Hierarchical clusters of universities. (b) Graph of variables (centrality metrics). The data and the code are accessible on GitHub.

ver, being state universities, California and Michigan offered more affordable education compared to Harvard and the three private universities in the first group. At the University of California, many students specialized in science, business, and medicine, particularly dentistry. On the other hand, Michigan attracted students in fields such as law, science, and engineering. Harvard's rise in centrality in the later phase can be attributed to the popularity of its Master of Business Administration (MBA) program among Chinese students from Shanghai's business circles. In contrast to the previous group of urban-based universities, the second group was situated in a semi-urban environment.

In contrast to the earlier phase, Yale, Cornell, and Princeton experienced progress during the second phase but subsequently encountered a decline. This shared pattern of evolution can be attributed to different factors. Cornell's relative decline can largely be attributed to its specialization in science and engineering, as well as its focus on postgraduate research. After the war, a significant number of Cornell students completed their entire academic journey at the institution or came from institutions that held a marginal or moderately central position in the network, such as Brown and Georgetown. Yale, on the other hand, relied on its past prestige until the war but subsequently experienced a loss of most bachelor graduates who transitioned to other universities for specialized studies. Princeton, similarly, mainly relied on American students during the early phase and was unable to attract as many Chinese students as needed to fill the gap. Both Yale and Princeton were slower in developing graduate and postgraduate programs that aligned with the new aspirations of Chinese students for advanced research and professional training. Additionally, the geographical locations of these three universities, situated in rural or semi-rural environments, played a role in their relative decline. Compared to urban-based institutions, these institutions offered fewer residential facilities and fewer opportunities for building professional networks, which may have impacted their attractiveness to Chinese students.

In conclusion, the choices made by Chinese returned students not only reflected the existing hierarchical system of American universities but also played a role in shaping it. The development of academic rankings in the nineteenth century stemmed from a desire to understand the factors that contributed to the success of eminent individuals. It questioned whether their achievements were predetermined by their heredity or if their education and environment played a crucial role.⁴¹ As time went on, the reputation of universities and the achievements of their

⁴¹ Luke Myers and Jonathan Robe, "College Rankings: History, Criticism and Reform," *Center for College Affordability and Productivity (NJ1)* (Center for College Affordability and Productivity, March 2009), 5–21, <https://eric.ed.gov/?id=ED536277>; William C. Kirby, *Empires of Ideas: Creating*

alumni reinforced each other, leading to the establishment of ranking systems. The rise of ranking systems in both China and the United States coincided with the popularity of Who's Who publications during the Republic era.⁴² In 1917, the publication of *Who's Who of American Returned Students* included a list of American universities ordered by the number of Chinese graduates in each discipline. While not a strict ranking, this literature influenced prospective Chinese students to seek enrollment in institutions where successful predecessors had been educated, in hopes of achieving similar accomplishments.⁴³ Historian Sun Huei-min estimated that more than one-third of the 60 eminent individuals featured in the first edition of *Who's Who in China* (1919) had received education abroad, with the majority (12) having studied in the United States.⁴⁴ In less than ten years, the number of Chinese celebrities who had studied abroad, including 70 in the United States, had exceeded 200.⁴⁵ The subsequent section will utilize some of these Who's Who publications to trace the paths of the most prominent alumni and assess the potential influence of their American education on their careers.

3 Postgraduate Careers

In order to examine the subsequent professional careers of returnees and the extent to which their educational backgrounds influenced their trajectories and collaborations with other alumni, I conducted a search in two contemporary Who's Who directories: *Who's Who in China* (WIWC) published in 1936, which includes only Chinese personalities, and *Men of Shanghai and North China* (MSNC) published in 1935, which features both Chinese and non-Chinese figures.⁴⁶ Since the WIWC

the Modern University from Germany to America to China (Cambridge, Massachusetts: The Belknap Press of Harvard University Press, 2022), 8–11.

⁴² In the United States, Jaques Cattell, *American Men of Science: A Biographical Directory* (New York: Bowker, 1906).

⁴³ Peking Tsing Hua College, *Who's Who of American Returned Students* [Youmei Tongxuelu 遊美同學錄] (Peking: Tsing Hua College, 1917).

⁴⁴ Huei-min Sun, "Who Are Elites? Elite Distinction and Who's Who Publications in Early Twentieth-Century China," in *Knowledge, Power, and Networks: Elites in Transition in Modern China*, ed. Cécile Armand, Christian Henriot, and Huei-min Sun (Leiden: Brill, 2022), 30.

⁴⁵ A. N. Holcombe, "Harvard Men in the Chinese Revolution," *Harvard Alumni Bulletin*, 1930, 983–88.

⁴⁶ Powell, *Who's Who in China*; George F.M. Nellist, *Men of Shanghai and North China. A Standard Biographical Reference Work* (Shanghai: The Oriental Press, 1935). These directories have been digitized by the Institute of Modern History of the Academia Sinica, Taipei (<https://mhdb.mh.sinica.edu.tw/mhpeople/index.php>), and are full-text searchable with the HistText R library (<https://>

includes only Chinese personalities, the inclusion of MSNC was necessary to enable a comparative perspective and allow for the study of Sino-American connections. By analyzing these directories, I aim to gather additional data on the educational background of the 418 club members, including their education in China before studying in the United States, their career paths after graduation, and their involvement in other clubs or associations. Initially, the focus will be on Chinese returnees based on the information provided in *Who's Who in China*. The subsequent section will utilize the *Men of Shanghai and North China* directory to include American alumni and explore potential collaborations between Chinese and American graduates.

Chinese Careers and Networks (*Who's Who in China*, 1936)

Based on the initial list of 418 members, I was able to identify 48 individuals in the 1936 edition of *Who's Who in China*. While this sample represents only 11.5% of all AUC members and 20.5% of Chinese members, it provides a substantial dataset for conducting a systematic analysis and identifying meaningful patterns. Leveraging named entity recognition techniques, I extracted information on the organizations to which these individuals were affiliated throughout their lives from their biographies.⁴⁷ From the retrieved list of 453 organizations, I applied the same place-based approach as before to identify potential connections between education and career trajectories and to uncover shared affiliations among the alumni. Using this method, I discovered 48 unique places that perfectly matched the individuals, which was expected given the diverse range of positions and affiliations found in

bookdown.enpchina.eu/rpackage/HistTextRManual.html) developed by the “Elites, Networks, and Power in Modern China” (ENP-China) project.

⁴⁷ Named entity recognition is a well-established method in natural language processing that aims to identify and classify named entities such as persons, organizations, places, and other entities mentioned in a text. Organizations in this context refers to all collective entities mentioned in the biographies, including educational and government institutions, business enterprises, professional organizations, clubs, and other associations. The model used for extracting entities follows the OntoNotes guidelines. For more information on these guidelines, please refer to <https://catalog.ldc.upenn.edu/LDC2013T19> (last consulted March 21, 2024). By applying this method to the 48 biographies, I successfully retrieved 453 organizations that were associated with these individuals. On average, each biography contained approximately 44 affiliations, with a minimum of 3 affiliations (as seen in the case of Huo Baoshu) and a maximum of 55 affiliations (as seen in the case of Mei Huaquan). The variations in the number of affiliations can be attributed, in part, to the age of the individuals. For instance, Huo Baoshu, born in 1900, was only 36 years old at the time, whereas Mei Huaquan was 48 years old.

their biographies. Apart from textile industrialist Cai Xiong (蔡雄), who formed his own isolated component, the other 47 individuals were interconnected. By applying community detection techniques to the network of these 47 returnees linked by their organizational affiliations, I identified four main communities. Community P1 is centered around their educational institutions, Community P2 around their employers after returning to China, and Communities P3 and P4 represent a combination of both educational and professional affiliations. Detailed information on these communities can be found in Table 6 and the accompanying figure (Figure 9).

Table 6: Communities of persons and organizations from *Who's Who in China*, 1936.

NoCluster	Label	Nodes	Ties	Corresponding clusters
P1	Columbia-YMCA	10	43	O1, O7
P2	St. John's-Pennsylvania-Harvard professionals	11	49	O3, O5
P3	Michigan-Beiyang-NEC	15	81	O4, O8, O9
P4	Yale-Qinghua-Foreign Affairs	11	46	O4, O8
O1	Freemasonry	54	1247	P1
O2	Foreign Affairs	45	259	P4
O3	Pennsylvania	56	335	P2
O4	Cornell-Beiyang-Reconstruction	58	352	P3, P3
O5	St John-Harvard-Medical	53	880	P2
O6	Mei Qiju	10	45	P2
O7	Columbia-YMCA	33	272	P1
O8	Michigan-Law	92	1098	P3, P4
O9	Christian-California-NEC	44	411	P1, P3

Community P1. Christian Educationists and Philanthropists Educated at Columbia

The Christian community encompasses educators, businessmen, and philanthropists who were educated at Columbia University. Most of this community, comprising six out of ten members, was actively involved in the Young Men's Christian Association (YMCA) at the local, national, and international levels.⁴⁸ Against the

⁴⁸ The YMCA is a Protestant organization aimed at spreading the social gospel and at promoting education and social work around the world. In 1885, American missionaries introduced the YMCA to China. By the 1920s, it reached 176 associations spread across 16 provinces, representing approximately 50,000 members. Chün Hsing and Jun Xing, *Baptized in the Fire of Revolution: The American Social Gospel and the YMCA in China, 1919–1937* (Lehigh University Press, 1996), 20.

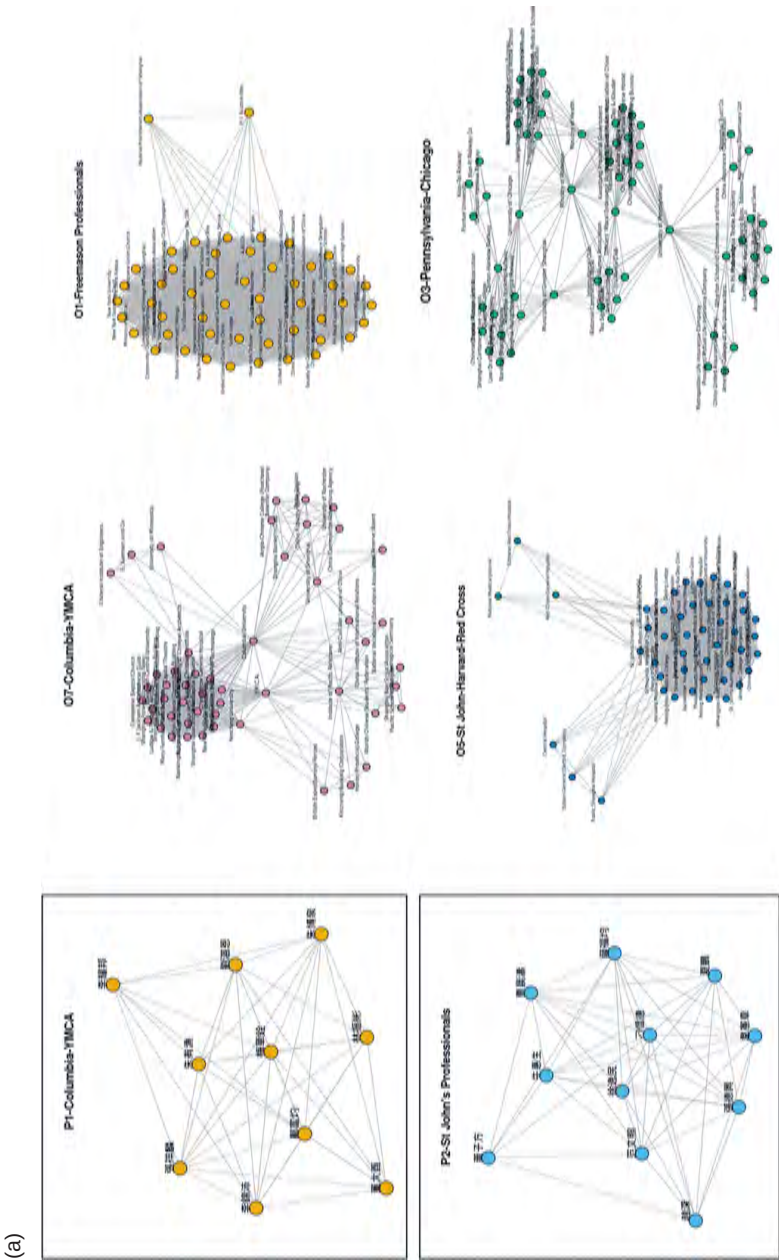


Figure 9: Communities of persons and organizations from *Who's Who in China*, 1936. (a) Christian-Columbia community (P1) and Saint-John's professionals (P2). (b) Economic bureaucracy (P3) and foreign affairs communities (P4).

(b)

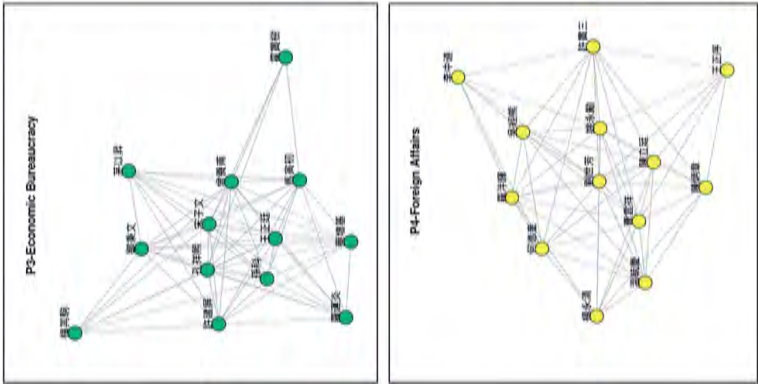


Figure 9 (continued)

backdrop of growing nationalism since World War I, leadership within the YMCA gradually transitioned to Chinese individuals. Notably, four members assumed leadership positions in the National Committee, namely Kuang Fuzhuo, Mei Huaquan (梅華銓), Li Yaobang (李耀邦), and Zhu Youyu (朱有漁). Additionally, Kuang Fuzhuo and Mei Huaquan also served in the Shanghai association. Zhu Youyu had previously held responsibility for student work in the International Committee in the United States during the war. While the YMCA was open to laymen and focused on social service, two activists within the Christian community were engaged in overtly religious organizations associated with the YMCA, particularly the National Christian Council (NCC).⁴⁹ Zhu Youyu further contributed to the Christian community as the editor of the *Chinese Recorder*, the primary English-language missionary outlet in China until 1941. The inclusion of banker Zhu Boquan and advertising professional Lin Zhenbin (林振彬), who were not directly affiliated with the YMCA, highlights the influence of Protestantism among urban business elites, as emphasized in previous scholarship.⁵⁰ As a voluntary organization, the YMCA relied significantly on financial support from affluent entrepreneurs. Architect Li Jinpei (李錦沛) also made significant contributions to the YMCA by designing various buildings across the country.

The YMCA's commitment to international peace is evident in this community as well. In 1924, it sponsored the establishment of the Institute of Pacific Relations (IPR) and its series of Pacific peace conferences.⁵¹ Two representatives from the YMCA, namely Zhu Youyu and Liu Zhanen, attended the 1933 conference in Banff, Canada. Additionally, Kuang Fuzhuo and Lin Zhenbin served on the board of the Pan-Pacific Association of China, an organization affiliated with the IPR. Furthermore, two YMCA officers concurrently held membership in the Shanghai Rotary Club (Mei Huaquan, Kuang Fuzhuo). The Rotary Club, a transnational organization

⁴⁹ The NCC was established in 1922 as a liaison and coordination organization among Protestants of varying denominations and nationalities in China. Previous scholarship has emphasized the close ties between the YMCA and the NCC. Thomas H. Reilly, *Saving the Nation: Chinese Protestant Elites and the Quest to Build a New China, 1922–1952* (New York, NY: Oxford University Press, 2021), 6, 26.

⁵⁰ Reilly, *Saving the Nation*, chapter 3. Lin Zhenbin was active in the Chinese Students' Christian Association. Through his marriage, he was tied to a Christianized family of wealthy Shanghai merchants. See Cécile Armand, *Madmen in Shanghai: A Social History of Advertising in Modern China* (Berlin: De Gruyter, 2024), chapter 3.

⁵¹ The Institute of Pacific Relations was established in 1924 as a platform for people-to-people diplomacy in response to the perceived failures of traditional diplomatic channels. Hsing and Xing, *Baptized in the Fire of Revolution*, 125–51. Zhang Jing 張靜, *Zhongguo Taiping Yang Guoji Xuehui Yanjiu* 中國太平洋國際學會研究, 1925–1945 [Research on the China Institute of Pacific Relations, 1925–1945] (Beijing: Shehui kexue wenxian chubanshe, 2012).

catering to urban business and professional elites, played an active role in promoting international peace during the interwar years. The Rotary Club and the YMCA shared a similar ethos of public service and experienced a parallel process of indigenization in the 1930s.⁵²

Community P2. Professionals Trained at St. John's, Harvard, and Pennsylvania Universities

The second community comprises professionals in medicine, business, and architecture who received their foundational education at St. John's University in Shanghai.⁵³ Subsequently, they pursued advanced studies at prestigious institutions such as the University of Pennsylvania and Harvard University. By the 1930s, St. John's had established strong institutional and informal ties with these two universities, particularly with their medical and business schools. In 1914, the University of Pennsylvania established a medical school affiliated with St. John's, in collaboration with Penn's Christian Association and St. Luke's Hospital in Shanghai.⁵⁴ Alongside its renowned medical school (founded in 1765), the University of Pennsylvania also housed two other prestigious graduate schools that attracted a substantial number of Chinese students: The Wharton School of Finance and Commerce (established in 1881) and the School of Architecture (established in 1920), which trained an entire generation of modern architects.⁵⁵ For Chinese students seeking high-quality training in Western medicine and business, the Harvard Medical School (established in 1782) and its business school (founded in 1908) served as major alternatives.⁵⁶

52 Cécile Armand, "Foreign Clubs with Chinese Flavor: The Rotary Club of Shanghai and the Politics of Language," in *Knowledge, Power, and Networks: Elites in Transition in Modern China*, ed. Cécile Armand, Christian Henriot, and Huei-min Sun (Leiden: Brill, 2022), 233–59.

53 Initially established as a missionary college by American Episcopalians in 1879, St. John's University evolved into a prominent private university during the early years of the Republic. Its student body primarily consisted of affluent families based in Shanghai, aspiring to careers in business and the liberal professions (Yeh, *The Alienated Academy*, 65–76). Compared to other communities, the community of Saint John's professionals is more dominated by natives from Jiangsu, particularly Shanghai.

54 F.C. Yen, "Modern Medicine," in *American University Men in China* (Shanghai: Comacrib Press, 1936), 107–15.

55 Jeffrey W. Cody, ed., *Chinese Architecture and the Beaux-Arts* (Honolulu: University of Hawaii Press, 2010).

56 Some Harvard graduates, concerned about the state of medical education in China, attempted to establish a medical school in Shanghai during the early Republic. However, the endeavor

Among the medical professionals, Niu Huisheng (牛惠生) and Cao Chentao (曹晨濤), both born in Shanghai in 1892, shared strong ties and educational backgrounds. Both were students at St. John's University and graduated from Harvard Medical School around the same period (1910–1914). Despite specializing in different fields (Niu in orthopedics and Cao in surgery), they collaborated in various medical institutions upon their return, notably the Peking Union Medical College (PUMC) in Beijing, St. Luke's Hospital, and the Orthopedic Hospital in Shanghai. Similar trajectories can be observed with Diao Xinde (刁信德) and Xu Yimin (徐逸民). Despite a generational gap, both graduated from St. John's University and the University of Pennsylvania. After returning to China, they served in affiliated institutions such as St. Luke's Hospital and the Orthopedic Hospital. Niu, Cao, and Diao played crucial roles as brokers, reconciling the missionary approach to medical education embodied by St. John's and St. Luke's with the scientific approach exemplified by Harvard. They also mediated between the two major American initiatives in introducing Western medicine to China: the PUMC in Beijing and the Harvard Medical School in Shanghai. Diao and Xu's involvement in the Red Cross Society of China underscores the historical connections between medicine and philanthropy rooted in early missionary social work.⁵⁷ It also reflects the brief affiliation of the Harvard Medical School with the Red Cross Hospital in Shanghai, which once shared its clinical and teaching facilities with the school. Furthermore, Niu, Diao, and Xu actively participated in national and local professional associations such as the Chinese National Medical Association, Shanghai Medical Society, and Shanghai Medical Practitioners Association. This placed them in a privileged position for brokering relationships with vernacular physicians who had not received education in the United States. In the clustered network of organizations, the first cluster (O1) reveals the influence of Freemasonry among American-trained medical professionals, a connection they shared with business and legal professionals across the other three communities.

The three graduates of the Wharton School of Finance specialized in textile engineering (Wei Xianzhang 韋憲章), banking (Xia Peng 夏鵬), and insurance (Zhang Deyu 張德興). The two architects Fan Wenzhao (范文照) and Zhao Shen

encountered difficulties due to insufficient funding and tensions with the staff of St. John's and St. Luke's, leading to its failure. In 1916, after several months of tedious negotiations, the Rockefeller Foundation eventually renounced to fund the Shanghai project and decided to concentrate its efforts on the Peking Union Medical College (PUMC). Peter Kong-Ming New and Yuet-Wah Cheung, "Harvard Medical School of China, 1911–1916: An Expanded Footnote in the History of Western Medical Education in China," *Social Science & Medicine* 16, no. 12 (January 1982): 1207–15.

57 C.E. Patton, "The Missionary and Philanthropic Sphere," in *American University Men in China* (Shanghai: Comacrib Press, 1936), 43–62.

(趙深) received their training at the University of Pennsylvania School of Architecture, albeit four years apart. While they established competing firms, namely Robert Fan and Allied Architects, they were both members of the Society of Chinese Architects and collaborated on projects such as the design of the Nanking Theater in Shanghai. Both architects and businessmen took advantage of their time in the United States to gain practical experience and establish business contacts. They worked with prominent American firms in New York, such as the Metropolitan Life Insurance Company, and in Philadelphia, such as the Chester Manufacturing Company. Zhang Deyu, the first Chinese to obtain the qualification of “chartered life underwriter,” played a significant role in standardizing professional examinations in life insurance and fostering institutional ties between St. John’s University and the American College of Life Underwriters.⁵⁸ The clustered network of organizations (cluster O3) reveals a remote connection between Pennsylvania graduates and Chicago graduates in railway engineering and public health. This connection is facilitated through the two architects who designed various buildings for the Ministries of Railway, Health, and the Municipality of Greater Shanghai.

Community P3. Economic Experts Educated at Beiyang and Michigan Universities

The economic bureaucracy consists of graduates in law, economics, and engineering from the University of Michigan, Yale, Columbia, and Cornell.⁵⁹ Some individuals also studied at Beiyang University in Tianjin before pursuing their education in the United States or taught at this institution upon their return.⁶⁰

This cluster revolves around two major institutions: the National Economic Council (NEC) and the National Construction Commission (NCC), which came to

⁵⁸ Powell, *Who’s Who in China*, 15.

⁵⁹ The notion of “economic bureaucracy” is borrowed from William C. Kirby, “Continuity and Change in Modern China: Economic Planning on the Mainland and on Taiwan, 1943–1958,” *The Australian Journal of Chinese Affairs*, no. 24 (1990): 121–41.

⁶⁰ Founded in 1895 as the Imperial Tientsin University, Beiyang University played a pioneering role in introducing Western subjects to China and is recognized as the first modern polytechnic school in China. Initially focusing on engineering and mining education, Beiyang expanded its curriculum over time to encompass a wide range of disciplines, including science, business, law, humanities, and more. The university’s teaching staff comprised a significant number of American instructors, among them notable figures like Charles Tenney, who was instrumental in facilitating the enrollment of the first cohorts of Chinese students following the previously interrupted Chinese Educational Mission. Wang, *Chinese Intellectuals and the West, 1872–1949*, 55, 82; Ye, *Seeking Modernity in China’s Name*, 20, 54, 63, 237.

symbolize the civilian approach to nation-building through economic development, as opposed to Jiang Jieshi's military perspective. The distinction between the NEC (cluster O9) and the NCC (cluster O4) in the clustered network of organizations highlights the competition between their respective founders, Song Ziwen and Hu Hanmin, as emphasized by historian Margherita Zanasi.⁶¹ The NEC, as a coordinating agency overseeing ministries concerned with economic development, includes the three major ministries of finance, industry, and railways within its community. The clustered network of organizations further divides into three main subgroups that align with the NEC's key sectors of intervention: engineers specializing in agriculture, railways, and communications (cluster O4 centered on Cornell and Beiyang); economists and financial experts (cluster O9 centered on the NEC); and legal experts (cluster O8 centered on Michigan and the Comparative Law School of China).⁶² The financial sector within this community highlights the alliance between banks and the government, as well as the historical connections between the Central Bank and the Bank of China.⁶³ Although these two banks belong to different clusters of organizations (O9 and O4, respectively), they are linked through Song Ziwen in the network of individuals.

Beyond Beiyang University, the economic bureaucracy forged significant connections with the National Southern University in Nanjing, facilitated by its proximity to the Nationalist government. During the early 1920s, the National Southern University established specialized colleges in agriculture, commerce, and communications, directly aligning with the interests of the National Economic Council (NEC). Notably, individuals like Ma Yinchu, Zou Bingwen (鄒秉文), and Mao Yisheng (茅以昇) served as college deans and technical advisors, playing instrumental roles in channeling academic resources and technical talents to support the NEC's developmentalist programs. Other experts, such as Xu Jianping (許建屏) and Mei Qiju (梅其駒), contributed to promoting pro-Chinese interests among American elites in China and the United States. They held influential positions as editors of the *China*

61 Margherita Zanasi, *Saving the Nation: Economic Modernity in Republican China* (Chicago: University of Chicago Press, 2006), 81–100.

62 On the agricultural technocrats, see Wu and Ye's chapter in this volume. On other engineers and technocrats, see Pelzer's chapter.

63 Established in 1912 from the reorganized DaQing Bank, the Bank of China had played the role of a central bank until the creation of the Central Bank of China in 1928. In 1928, the Bank of China was chartered a special bank for international exchange and maintained a strong position on world financial markets. Zhaojin Ji, *A History of Modern Shanghai Banking: The Rise and Decline of China's Finance Capitalism*, 2016, 303–16, 472–88. The close ties between the government, the banks and the Jiangnan elites have been emphasized by Zanasi and Linsun Cheng, *Banking in Modern China: Entrepreneurs, Enterprises, and the Development of Chinese Banks, 1897–1937* (Cambridge: Cambridge University Press, 2002).

Press, a leading English-language publication in China, and contributed to various influential American newspapers, including the *Detroit Tribune*, *Michigan Daily*, *Baltimore Sun*, and *New York Herald*. Using a formal network analysis, this research complements previous scholarship on the National Economic Council and the developmental state. It supports Zanasi's assumption regarding the formation of informal networks and complicates the narrative centered solely on Song Ziwen's exceptional role in harnessing American resources for China's economic development.⁶⁴ The findings highlight that the connection between the United States and the Nationalist government relied on a broader cluster of closely connected graduates from elite American universities.

The presence of two members of the economic bureaucracy, Kong Xiangxi and Xu Jianping, establishes a connection with the Christian Cantonese community represented by Kuang Fuzhuo (O9). This connection is facilitated through their involvement in organizations such as the National Child Welfare Association and the Pan-Pacific Association. Additionally, the group of lawyers from Michigan within the economic bureaucracy forms a bridge with the community of legal experts in foreign affairs (P4). This connection is established through the Comparative Law School of China and the Legislative Yuan (O4). Moreover, these two communities share family ties, most notably through the Wang brothers. Both graduates of Yale University and active members of the YMCA, the eldest brother Wang Zhengting (王正廷) (P3) held significant positions within the government under the Nationalist regime, particularly in the Ministry of Foreign Affairs. Meanwhile, his younger brother Wang Zhengxu (王正序) (P4) worked for various banks in Singapore before being appointed as the manager of the Shanghai branch of the Overseas Banking Corporation. The ties between the two brothers likely aided the Nationalist government in channeling economic resources from wealthy overseas Chinese in South China.

Community P4. Legal Experts in Foreign Affairs Educated at Yale, Harvard, and Chicago

The foreign affairs community consists of legal experts in foreign affairs who received training at Yale, Harvard, Chicago, and Wisconsin.⁶⁵ Additionally, several

⁶⁴ Zanasi, *Saving the Nation*, 81–102.

⁶⁵ Harvard and Yale were among the first American institutions of higher education to establish law schools (in 1817 and 1824, respectively). The University of Wisconsin was renowned for its strong programs in political science and public administration. Brubacher and Rudy, *Higher Education in Transition*, 164–68, 182.

individuals gained experience in third or even fourth countries, particularly France (Sorbonne, Grenoble) and Germany (Berlin, Göttingen), which served as important references for legal professionals worldwide. Following their graduation, most individuals in this community served in the Ministry of Foreign Affairs and academia, primarily at Peking National University, Tsinghua University, and the Comparative Law School of China in Shanghai.⁶⁶ Many were initially students at these institutions before pursuing their education in the United States. The close ties between these elite universities and the central government, particularly in the case of Beida, highlight the potential influence American-trained experts exerted on policymaking during the Republican era. However, these ties also suggest potential tensions between scholarly independence and government service.⁶⁷ Individuals engaged in foreign affairs held positions both domestically (such as He Dekui) and abroad in legations and consulates (such as Yang Yongqing 楊永清 in London, Cao Yunxiang 曹雲祥 in London and Copenhagen). In addition to foreign affairs and universities, some legal experts served in the central economic bureaucracy, primarily in the Ministry of Finance, Salt Administration, and Bank of China. Others held roles in local administration, such as the Shanghai Municipal Council. A few individuals also worked as consultants for private companies, including British American Tobacco, and in think tanks such as the Chinese Institute of Management.⁶⁸

Despite their differences, both the economic bureaucracy and the foreign affairs communities exemplify the significant flexibility that training in law or economics provided to young graduates from American universities. These individuals possessed highly esteemed foreign credentials that allowed them to navigate various spheres, including the central and local governments, academia, and the

⁶⁶ Peking University, also known as Beijing University or Beida (北大), traces its origins back to 1898 when it was established as the Imperial University. Initially, its primary mission was to provide training for high-ranking officials of the Qing government. However, during the Republican era, Peking University transformed into a leading comprehensive university dedicated to academic research, placing a strong emphasis on the humanities and social sciences. Established in 1911 as a preparatory school for Boxer Indemnity Students, Tsinghua College became a national university in 1928. Founded in 1915 by the Southern Methodist Mission School, the Comparative Law School of China at Soochow University (Dongwu daxue 東吳大學) quickly gained recognition as one of the top law schools in China, particularly esteemed among legal professionals in the United States. Robert T. Bryan, "The Legal Profession," in *American University Men in China* (Shanghai: Comacrib Press, 1936), 82–89; Alison W. Conner, "Legal Education During the Republican Period: Soochow University Law School," *Republican China* 19, no. 1 (January 1, 1994): 84–112.

⁶⁷ Xiaoqing Diana Lin, *Peking University: Chinese Scholarship and Intellectuals, 1898–1937* (Albany: State University of New York Press, 2005), 25–46; Fabio Lanza, *Behind the Gate: Inventing Students in Beijing* (New York: Columbia University Press, 2010), 12–15; 75–92.

⁶⁸ On this institute, see Stephen L. Morgan, "China's Encounter with Scientific Management in the 1920s–1930s," *Business History Conference* 1 (2003): 408–24.

private sector. Within both communities, two distinct profiles emerged. On one hand, there were career officials affiliated with the Guomindang, such as Wang Zhengting, Song Ziwen, and Kong Xiangxi. These individuals maintained long-term connections with the Nationalist Party and held positions of influence within the government. On the other hand, there were external advisors and academics, such as Ma Yinchu, Mao Yisheng, and Cao Yunxiang. Although they may not have been formal members of the Nationalist Party, their exceptional academic qualifications and expertise brought them to influential positions under the Nanjing regime.

Strong Ties Within and Between Communities

Within the communities discussed, there are indeed varying levels of strong ties. Some connections demonstrate clear and robust relationships, such as the strong ties between Chinese and American universities, which reflect scientific cooperation and student exchange programs. An example of this is seen in the connection between St. John's University and the University of Pennsylvania Medical School (community P2). Other connections require further investigation, such as those between the University of Michigan, Beiyang University, and the Comparative Law School of China (community P3, P4). Similarly, connections between Yale, Harvard, and Tsinghua (Qinghua) Universities (community P4) warrant further exploration. Moreover, the presence of self-loops centered on Chinese universities, such as St. John's, Qinghua, and the Comparative Law School of China, indicates a pattern of former students returning to their *alma mater* to take up teaching or administrative positions. This demonstrates a strong sense of loyalty and solidarity between universities and their graduates, fostering the creation of alumni communities that are united around their respective institutions of education. In some instances, these universities would send their faculty to the United States to receive up-to-date training in their respective fields, which they would then incorporate into their teaching upon their return. This highlights the dynamic exchange of knowledge and expertise between Chinese universities and their American counterparts.

The strong ties observed between universities and employers suggest the presence of deliberate recruiting strategies or implicit practices of cooptation. In the case of the Nanjing government, a significant number of officials and advisors were recruited primarily among Columbia graduates, followed by Yale, Harvard, and Michigan graduates. Notably, this pattern of selecting government officials among Columbia graduates persisted across successive regimes, including the Beiyang, Guangdong, and Nanjing regimes. Similarly, at the local level, the Shanghai Municipal Council predominantly employed Harvard graduates, while Columbia graduates played a more prominent role in the Chinese municipality of Greater Shang-

hai. These patterns highlight the existence of specific university affiliations in the recruitment of officials, suggesting the importance of certain qualifications that may be obtainable only at particular universities. Further research is required to fully understand the underlying mechanisms behind these patterns. It is crucial to determine whether these patterns scale up beyond the observed cases and whether they stem from practices of personal recommendation and cooptation among alumni, the reputation of specific universities, or a combination of various factors.

The YMCA plays a significant role across all communities, not just within the Columbia cluster centered on its prominent officers. This widespread representation within the communities illustrates the YMCA's influential presence among returned students, highlighting the potential impact of the American-educated group in promoting the Protestant gospel within Chinese society. This aspect has often been overlooked in previous works, which primarily focus on the biographies of YMCA celebrities like Yu Rizhang, Wang Zhengting, and the Soong family. The previous binary framework that emphasizes the opposition between nationalism and imperialism also contributes to this oversight. By utilizing a formal network analysis based on empirical data, this research substantiates previous assumptions regarding the connections between the YMCA, business and professional elites (clusters P1 and P2), the government, and the Nationalist Party (clusters P3 and P4).⁶⁹

Previous works have often examined national groups separately, which obscures the potential connections between them. The next step in this paper involves analyzing the transnational connections among Chinese and American alumni, providing further insights into the dynamics and influence of these networks.

Sino-American Careers and Networks (*Men of Shanghai and North China*, 1935)

Based on the initial list of 418 members, 33 individuals were found in the 1935 edition of *Men of Shanghai and North China*. Using the same method, 33 unique places were identified based on the biographies of these individuals, drawing from a pool of 375 organizations. This population consisted of 19 Chinese and 14 Americans, forming two predominantly separate communities that overlapped with the two distinct national groups. However, the network of organizations revealed deeper cross-cultural connections. Table 7 outlines the eight clusters of organizations identified using the Louvain algorithm, along with their qualitative attributes (national outlook) and basic global metrics (size and order). Figure 10 visualizes the

⁶⁹ Reilly, *Saving the Nation*, chapter 3.

Table 7: Communities of persons and organizations from *Men of Shanghai and North China*, 1935.

NoCluster	Label	Nationality	Nodes	Ties	Corresponding clusters
O1	YMCA-Columbia	Sino-American	50	617	P1, P2
O2	Parochials	American	87	756	P1
O3	Architect Murphy	American	35	595	P1
O4	St. John's University	Sino-American	63	593	P1, P2
O5	Bankers' Club	Chinese	35	595	P2
O6	Civil Engineer S.T. Lee	Chinese	15	105	P2
O7	Dentist Benjamin Wong	Chinese	65	374	P2
O8	Banker Fred Sze	Chinese	25	300	P2
P1	Americans	American	11	55	O1, O2, O3, O4
P2	Chinese	Sino-American	22	194	O1, O4, O5, O6, O7, O8

four most important communities of organizations alongside the two corresponding clusters of individuals, which are described in detail below.

Among the eight organizational communities identified, two of them (1, 4) involve both Chinese and Americans, two (2, 3) are exclusively composed of Americans, and four (5, 6, 7, 8) are predominantly Chinese. Clusters O1 and O2 reflect the distinction between the “cosmopolitans” (including Chinese individuals) and the “parochials,” a conceptualization by historian J. Huskey that highlights a major dividing line within the American community in Shanghai.⁷⁰ Clusters 4 and 5 revolve around two competing universities, namely St. John's University (O4) and the University of Shanghai (O5), both catering to similar social groups in Shanghai. The remaining four clusters (3, 6, 7, 8) are ego-networks centered on a single individual. Cluster 3 is centered on American architect Henry Murphy, known for his efforts to adapt modern architectural principles to a renaissance of ancient Chinese architecture.⁷¹ Cluster 6 revolves around civil engineer Li Shitian (李世田), specializing in river conservancy projects primarily in northern China. Cluster 7 focuses on Canadian-born dental surgeon Huang Yanji (黄烟基) (Benjamin Wong), who maintains strong connections with American dentists. Cluster 8 centers around Harvard-trained northern banker Shi Boqun (Fred C. Sze).⁷² These four individuals have distinctive trajectories and are

⁷⁰ James Layton Huskey, “Americans in Shanghai: Community Formation and Response to Revolution, 1919–1928” (PhD in History, Chapel Hill, University of North Carolina, 1985).

⁷¹ Jeffrey W Cody, *Building in China Henry K. Murphy's “Adaptive Architecture,” 1914–1935* (Sha Tin, N.T., Hong Kong; Seattle: Chinese University Press; University of Washington Press, 2001).

⁷² The term “northern bank” refers to the four banks founded north of the Yangzi River, in contrast to the three “southern banks” located south of the river and mostly based in Shanghai. Fred C. Sze was manager of the China & South Sea Bank, which had fewer connections with the prominent bankers based in Shanghai. Ji, *A History of Modern Shanghai Banking*, 340–74.

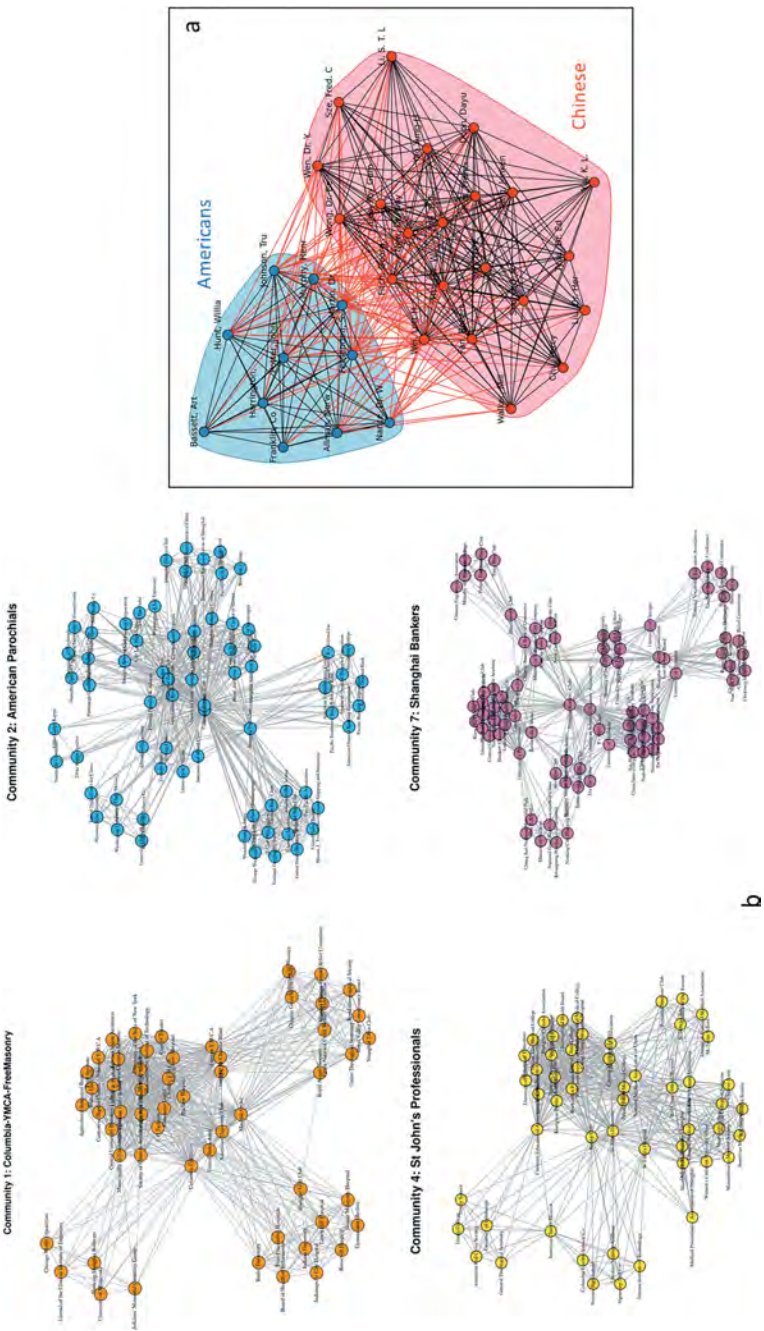


Figure 10: Communities of persons and organizations from *Men of Shanghai and North China*, 1935.

primarily embedded in webs of relations based in the United States, setting them apart from the rest of the network. However, they are still connected to the main component through shared employers (such as the Nanjing government), professional organizations (like the Chinese Institute of Engineers), inter-professional elite clubs (such as Rotary), and secret societies (like Freemasonry).

Community O1. Christian Educators and Philanthropists Educated at Columbia. The first Sino-American community is centered on the Young Men's Christian Association (YMCA), Columbia University, and Freemasonry. It largely overlaps with the first cluster identified in the previous study based on *Who's Who in China* (P1). The members of this community include graduates of Columbia University in various fields such as education, business, and medicine. Interestingly, four individuals had served in the US Army during World War I, including architect Li Jinpei, an American-born Chinese who was enrolled in the Students Army Training Corps. All individuals in this community have connections with the YMCA movement, either as students (for example, Shi Boqun studied at the YMCA High School in Shanghai), officers (such as George Fitch and Liu Zhan'en), or architects (like Li Jinpei). Additionally, five individuals were both Freemasons and members of the Rotary Club. These individuals include architect Fan Wenzhao, banker Xu Zhen-dong (徐振東), dentist Huang Yanji, physician Xu Yimin, and American missionary George Fitch. The ties between the Rotary and Freemasonry are particularly strong, especially among Chinese alumni. It is noteworthy that unlike many foreign expatriates' clubs in Shanghai, both the Rotary and Freemasonry did not select their members based on nationality, making them unique organizations in China.⁷³

Community O2. American "Parochials" in Shanghai. The second cluster consists exclusively of Americans in Shanghai, forming what can be referred to as the American "parochials." These individuals were members of elite clubs that were restricted to foreign expatriates. Occupationally, they were primarily lawyers (such as Fessenden, Franklin, and Harrington) and representatives of American multinational companies in China, such as Andersen Meyer.⁷⁴ The connections between these individuals were particularly strong due to their multiple memberships across various

⁷³ The Rotary Club is an American-born organization that aims to foster fellowship and networking among business and professional elites in cities worldwide. Established in 1919, the Rotary Club of Shanghai asserted its international perspective right from its inception. Armand, "Foreign Clubs with Chinese Flavor: The Rotary Club of Shanghai and the Politics of Language."

⁷⁴ In 1906, Andersen Meyer became one of the pioneering American companies to open an office in Shanghai, initially focusing on importing various types of machinery, primarily for textile manufacturing. Reorganized in 1915 as Andersen Meyer Ltd., the company started to act as an agent for General Electric and established an affiliated company, the Chinese General Edison Company. Christopher Bo Bramsen, *Open Doors: Vilhelm Meyer and the Establishment of General Electric in China* (London: Routledge, 2015).

clubs. The most common combination of clubs included the American Club, the Columbia Country Club, the Shanghai Club, the Shanghai Race Club, and the Shanghai Polo Club. These clubs mainly focused on British-inspired leisure activities, which were not as popular among the American-educated Chinese population. These exclusive clubs were primarily aimed at foreign expatriates, creating a distinct contrast with the international ambitions of organizations like the Rotary Club, as described earlier.

Community O4. St. John's Professionals and Philanthropists. The cluster centered on St. John's University aligns closely with the second community identified in the previous study based on *Who's Who in China* (P2). This community comprises both Chinese and American professionals in the fields of medicine, business, and architecture. After completing their studies at St. John's, Chinese graduates furthered their education in the United States at institutions such as the University of Pennsylvania (architect Robert Fan, urologist Xu Yimin, physician Diao Xinde, textile engineer Wei Xianzhang) or Harvard University (orthopedist Niu Huisheng, physician Yan Fuqing, government official Song Ziwen in Business Administration, banker Yu Kailing 俞開齡). Upon their return, many of these individuals became professors at St. John's University, teaching in their respective fields. The university also employed foreign instructors and administrators, such as W. Nance (lecturer in urology), M. Walker (professor of mathematics and treasurer), and Francis Pott (university president).

In addition to their professional engagements, many members of this community were actively involved in various social and philanthropic organizations. Chinese graduates participated in students' clubs (such as the St. John's Alumni Association), fraternities (Flip Flap), and professional associations related to their respective occupations (National Medical Association, Shanghai Medical Society, and Chinese Medical Association). They were also engaged in philanthropic endeavors through organizations like the Christian Educational Association of China, Chinese Mission to Lepers, and the Red Cross Society of China. While students' clubs and professional associations primarily involved Chinese graduates, interprofessional clubs and philanthropic organizations fostered connections between both Chinese and American members. The Rotary Club, as an international and interprofessional club, played a significant role in bridging this community with the YMCA-Columbia community (O1). Additionally, almost all Chinese graduates maintained their memberships in the St. John's Alumni Association, reflecting their loyalty to their *alma mater* and their desire to maintain strong ties with their fellow graduates. As historian Yeh Wen-Hsin has noted, St. John's University's distinctive feature of providing its graduates with valuable networks and connections greatly contributed to their professional careers and was highly valued by students and their families.⁷⁵

⁷⁵ Yeh, *The Alienated Academy*, 49–88.

Community O5. Shanghai Business Elites Connected with the University of Shanghai. The community of Shanghai business elites is centered on the Shanghai Bankers' Club and the University of Shanghai. Although the Shanghai Bankers' Club is named as such, it is more inclusive than its name suggests. It encompasses not only professional bankers like Zhu Boquan and Xu Zhendong, both of whom were educated at the University of Shanghai, but also individuals from various other occupational groups. This includes architects such as Dong Dayou (董大酉) and Yang Runjun (楊潤鈞), physicians like Diao Xinde, and educationists such as Liu Zhan'en. Additionally, graduates from competing universities, including Saint John's, are also part of this community. Liu Zhan'en, although not a graduate of the University of Shanghai, became one of its youngest presidents after completing his PhD at Columbia University in the United States. In contrast to St. John's graduates who tended to favor Harvard and the University of Pennsylvania for further studies, students from the University of Shanghai preferred institutions such as the University of Michigan (architect Yang Runjun, banker Xu Zhendong), the University of Chicago (educator Liu Zhan'en, banker Yao Yongli 姚永勵, architect Dong Dayou), and Columbia University (Zhu Boquan, Dong Dayou, Liu Zhan'en). Despite their diverse educational and professional backgrounds, many individuals in this community were concurrently members of the American Returned Students' Club, the Y's Men Club, and other elite clubs such as the Huxi Country Club, which was the Chinese equivalent of the American Columbia Country Club. These memberships provided them with numerous opportunities for trans-professional interactions and further expanded their networks.

Strong Ties and Brokers

The four organizational clusters identified in the network largely align with the two nation-based communities of individuals. The smaller group consists exclusively of Americans, while the larger group is primarily composed of Chinese individuals, except for three American missionaries: George Fitch, Francis Hawk Pott, and Millidge Walker. These three individuals play significant brokerage roles between the Chinese and American communities, as indicated by their high betweenness centrality scores (Table 8). The three brokers share certain commonalities: they bear Chinese names, are actively involved in Christian organizations, and have spent a significant portion of their lives in China. George Fitch, one of the two Chinese-born Americans in the sample, was born in Suzhou in 1883 to American missionary parents. After studying in the United States at the University of Wooster and the Union Theological Seminary, he returned to China in 1909 and became the secretary of the International Committee of the YMCA. He held

memberships in various philanthropic organizations, clubs, associations, and secret societies, including the Freemasonry. Francis Hawk Pott, a veteran missionary, was the oldest individual in the sample, reaching the age of 71 in 1936. Born in New York in 1864, he dedicated almost half a century to educational work in China. As a clergyman, educator, and philanthropist, he served as the president of St. John's University from 1888 to 1941, the president of the Christian Educational Association of China, and the chairman of the American Red Cross Society. Proficient in Chinese, he translated numerous English-language works into the vernacular. Millidge Walker, born in Connecticut in 1877, was trained as a mechanical engineer. However, due to a series of circumstances, he assumed a leadership role in the finance department of one of the most significant missionary organizations in China, the American Church Mission, overseeing its extensive educational and medical operations. These three brokers, with their unique backgrounds and involvement in Christian organizations, play crucial bridging roles between the Chinese and American communities.

Table 8: Most central individuals in the Sino-American network of persons (from *Men of Shanghai and North China*, 1935).

Name	Nationality	degree	degree normalized	eigenvector	betweeness	closeness
Wei, Lott H.	Chinese	30	0.9375	0.9079516466	15.6242254478	0.0188679245
Hsu, Dr. W.	Chinese	29	0.90625	0.8298684816	13.211976912	0.0192307692
Fessenden, S	American	28	0.875	0.9701999393	7.8515294346	0.0192307692
Martin, Dr.	American	28	0.875	1	3.7065147271	0.0178571429
Murphy, Henr	American	27	0.84375	0.9006038055	3.7217823843	0.0188679245
New, Dr. Way	Chinese	27	0.84375	0.8417789145	6.6095238095	0.0172413793
Zee, T. T.	Chinese	27	0.84375	0.8009710478	4.8023809524	0.0172413793
Lee, Poy Gum	Chinese	27	0.84375	0.7552472791	39.1535150307	0.02
Yen, Dr. F.	Chinese	27	0.84375	0.6155693703	30.1044289044	0.0204081633
Pott, Franci	American	27	0.84375	0.5419065661	20.9815147271	0.0208333333
Fitch, Georg	American	26	0.8125	0.7592711609	5.6238816739	0.0181818182
Fan, Robert	Chinese	26	0.8125	0.6203579906	14.830988456	0.0192307692
Johnson, Tru	American	25	0.78125	0.8564455235	3.5315720227	0.0178571429
Wong, Dr. Be	Chinese	25	0.78125	0.5793699098	15.6397297147	0.0208333333
Doon, Dayu	Chinese	24	0.75	0.5874876121	13.1519300144	0.02

The complete table is accessible on GitHub: https://github.com/carmand03/american-university-men-china/tree/main/Tables/Careers/msnc_1935

The strongest ties among the members of the network tended to form within the same clubs or associations and among individuals with similar professions. There were especially strong connections among legal and medical professionals. Chinese alumni primarily formed educational and professional ties, while connections among American alumni were often more leisure oriented. Among the Chinese alumni, a notable example of strong ties is seen among the physicians Niu Huisheng, Xu Yimin, and Yan Fuqing. As noted earlier, these three physicians all received their education at St. John's University during the same period (1916–1919). After returning to China, Niu, and Xu became professors at their *alma mater* and later worked together at the Orthopedic Hospital in Shanghai in 1928. They were actively involved in professional organizations such as the Chinese Medical Association and the Shanghai Medical Society. Additionally, Niu and Yan both studied at Harvard and subsequently worked at the Peking Union Medical College (PUMC). They were affiliated with the National Medical Association of China and were members of the Flip Flap Fraternity.⁷⁶

The interactions among American expatriates in Shanghai were largely facilitated through business partnerships and shared membership in local elite clubs. The ties between Franklin, Harrington, and Allman were notably strong. These three individuals were not only associates in the same legal practice, but they were also members of the American Bar Association, the American Club, Columbia Country Club, International Recreation Club, Shanghai Club, and Shanghai Race Club. Additionally, Franklin, Harrington, and Allman joined the Shanghai Volunteer Corps, which further strengthened their ties. This suggests that they not only interacted professionally and socially but also shared a commitment to community service and defense efforts.

The connections between American and Chinese individuals were often based on shared experiences, such as membership in the same clubs, previous education, or employment at the same institutions. In the case of architect Henry Murphy and lawyer Yao Yongli, their ties were strengthened by their shared educational background at Yale University and their membership in Yale Club of China. Despite their different generations and fields of expertise, both individuals had worked for the

76 The Flip Flap (F.F.) Fraternity, also known as Lanji (蘭集) in Chinese, was established in 1909 in Hanford, Connecticut. As one of the oldest and largest Chinese fraternities, it boasted a membership of 70 individuals in the United States and around 400 members in China, organized into three chapters located in the United States, Shanghai, and Canton. Unlike some other Chinese fraternities of the time, the Flip Flap Fraternity focused more on fostering congenial fellowship among its members rather than placing strong emphasis on academic qualifications or achievement. P.T. Chen, "Chinese Fraternities in America," in *American University Men in China* (Shanghai: Comacrib Press, 1936), 159–60.

Nanjing government. Murphy served as the architectural advisor in the planning of the new capital, Nanjing, in 1929, while Tao was appointed as the legal advisor to the Ministry of Finance in 1932. Similarly, the ties between Li Jinpei and Paul Martin were forged through their shared educational experience at Columbia University and their service in the U.S. Army during World War I. Although they served on different fronts and had different roles, with Martin being the director of surgery services in Trier, Germany, and Li being enrolled in the U.S. Army Student Training Corps, their common background at Columbia University and military service provided a basis for potential connections and shared experiences.

Textile engineer Wei Xianzhang (Wei Lott) and lawyer Cornell Franklin serve as examples of cosmopolitan individuals who were positioned to bridge the Chinese and American communities in the network. Despite belonging to their respective national communities, their shared memberships in four elite clubs allowed them to mediate between the two groups. Wei Xianzhang held a unique position as a Chinese member of the American Club, which was predominantly composed of American expatriates. He received his education at St. John's University, the Philadelphia Textile Academy, and the University of Pennsylvania, and gained practical experience through his work with the U.S. Department of Agriculture. After returning to China, he worked for various American companies, including Andersen Meyer and Butterfield & Swire, before joining the Ministry of Finance of the Nanjing government. His membership in select foreign clubs, such as the International Recreation Club and the American Club, as well as his affiliation with the Phi Psi Fraternity, likely facilitated his integration into the American parochial circles. On the other hand, Cornell Franklin, a lawyer, achieved a noteworthy position as a foreigner admitted to the Chinese Jockey Club. He held the third most influential position in the network, as measured by eigenvector centrality (Table 8). Franklin's connections and influence extended across various elite clubs, including the American Club, Chinese Jockey Club, Paper Hunt Club, and International Recreation Club. His legal background and involvement in these elite circles likely contributed to his ability to navigate between the Chinese and American communities.

4 Case Studies: American-Educated Lawyers and Engineers

Focusing on American-educated lawyers and engineers for the final case studies serves several purposes. First, these two occupational groups experienced significant flexibility under the Republican era, as their education often did not align

directly with their sectors of employment (see Section 1). By examining these “gray areas” of employment, we can gain insights into the mechanisms of adaptation and the limitations to professional mobility within these fields. Additionally, analyzing the networks of lawyers and engineers allows us to identify commonalities and differences between the two groups. Lawyers quickly established themselves as a recognized profession in the early Republic, while engineers faced more challenges in finding suitable employment and asserting their professional status until the organization of the economic bureaucracy under the Nationalist regime.⁷⁷ Understanding the political context and its influence on the trajectories of these two groups is crucial. Moreover, the focus on lawyers and engineers is supported by the availability of detailed investigations in the source book that is the focus of this chapter. The contributions by American lawyer Robert Bryan and Chinese engineer Li Ximou provide valuable information that can be systematically analyzed to gain insights into the careers and networks of lawyers and engineers.⁷⁸ Furthermore, these two groups have been extensively studied in existing scholarship, providing a rich foundation upon which we can build our network analysis.⁷⁹ By combining this existing knowledge with our data-driven findings, we aim to enrich the scholarship on lawyers and engineers, bringing additional insights into the recruiting strategies of government and non-government institutions, the practices of cooptation and cooperation among alumni, and the different profiles that emerge based on their educational experiences, networks, and subsequent careers.

Networks of Legal Professionals

The first case study focuses on a small group of 16 legal professionals, whose information is sourced from Bryan’s piece. These individuals collectively held 173 positions across 40 different institutions. Applying the Louvain algorithm to the

⁷⁷ Thorben Pelzer, “Engineering Trouble: US–Chinese Experiences of Professional Discontent, 1905–1945,” in *Engineering Trouble: US–Chinese Experiences of Professional Discontent, 1905–1945* (Brill, 2023).

⁷⁸ Robert T. Bryan, “The Legal Profession,” in *American University Men in China* (Shanghai: Comacrib Press, 1936), 82–89; Lee, “In Engineering and Architecture.”

⁷⁹ See, for instance, Hwei-min Sun, *Zhidu Yizhi: Minchu Shanghai de Zhongguo Lüshi (1912–1937) (Institutional Transplantation: The Chinese Lawyers in Republican Shanghai)* (Taipei: Zhongyang yanjiuyuan jindaishi yanjiusuo, 2012); Xiaoqun Xu, *Chinese Professionals and the Republican State: The Rise of Professional Associations in Shanghai, 1912–1937* (Cambridge: Cambridge University Press, 2009); William Kirby, “Engineers and the State in Modern China,” in *Prospects for the Professions in China*, ed. Kenneth Winston, William P Alford, and William Kirby (London: Routledge, 2009), 283–313.

projected network of individuals linked by their organizational affiliations, three distinct communities of individuals were identified (Table 9, Figure 11). These communities are shaped primarily by their workplaces, and they overlap with five clusters of organizations, each centered around a specific university or a combination of universities. This suggests that the legal professionals organized themselves based on their *alma mater(s)* and the institutions they were employed in after returning from their studies.

Table 9: Communities of legal professionals and their organizations, from *American University Men in China*, 1936 (p. 82–89).

NoCluster	Label	Nodes	Ties	Corresponding clusters
O1	From late Qing <i>fazheng</i> to legal profession	7	13	P1
O2	Shanghai-Michigan-Soochow University	9	26	P3
O3	Yale-Yanjing international experts	14	52	P2
O4	Columbia-Illinois experts on reconstruction	5	7	P2
O5	Harvard-Chicago-NYU ministerial advisors	16	40	P1
P1	Northern China-Beiyang government	7	14	O1, O5
P2	South China-Nanjing government	7	15	O3, O4
P3	Shanghai lawyers	2	1	O2

Community O1. From Literati to Legal Professionals. The first cluster (O1) centered on Zhang Yuquan (張煜全) and Xu Weizhen (徐維震) represents a transition from a broader understanding of law associated with politics and economics (*fazheng*) in the late Qing period to a more specialized legal profession during the Republican era.⁸⁰ Zhang Yuquan graduated from Yale (LLB and LLM) while Xu Weizhen graduated from Indiana (LLB). After their return, they both achieved the *jinshi* degree by equivalence, the highest level of academic achievement in the imperial examination system, but their trajectories diverged under the Nationalist regime. While Zhang focused on the academic realm and contributed to political science and legal education, Xu played an active role in the judiciary and government institutions, demonstrating the diverse paths taken by early legal specialists during this transformative period in Chinese history.

⁸⁰ Cheng Liaoyuan, *Qingmo Fazhengren de Shijie [Lawyers and Political Men in the Late Qing]* (Beijing: Falü chubanshe, 2003), 1–3; Huei-min Sun, “From Literati to Legal Professionals: The First-Generation Chinese Law School Graduates and Their Career Patterns,” in *Knowledge Acts in Modern China: Ideas, Institutions, and Identities*, ed. Robert Joseph Culp, Eddy U, and Wen-Hsin Yeh, China Research Monographs 73 (Berkeley, CA: Institute of East Asian Studies, University of California, 2016), 89–113.

Community 02. Shanghai-Based Legal Practitioners. The second group of legal practitioners in Shanghai consists of individuals who graduated from Soochow University's Comparative Law School of China and the University of Michigan. This group shows a strong focus on the professionalization of the legal field, as evidenced by their practice and teaching activities. Several members of this group held positions as professors or principals at the Comparative Law School of China. In addition to their teaching roles, some concurrently opened their private practices (Wu Jingxiong 吳經熊, Chen Tingrui 陳霆銳) and held positions in local judiciary institutions, particularly the Shanghai Provisional Court (Wu Jingxiong, Xiang Zhejun 向哲濬).⁸¹

Community 03. Yale-Yanjin Experts in International Law. The third community consists of legal experts who received their training at Yale University and played important roles in the field of international law during the Nationalist regime. Upon their return, these individuals served in various judiciary institutions, ranging from district courts to supreme and international courts. Notably, members of this community were frequently appointed as legal advisors to national and international commissions that dealt with issues related to extraterritoriality. In addition to their work in the judiciary, some members of this community were actively engaged in teaching. Guo Yunguan (郭雲觀), for example, taught at the Yenching (Yanjin) University Law School in Beijing, contributing to the education and training of future legal professionals.

Community 04. Columbia-Illinois Legal Experts on Reconstruction. The fourth community consists of legal experts who graduated from Columbia University and the Universities of Illinois and Chicago. Unlike the Yale community, which focused on international law, this group of legal professionals was primarily engaged in economic matters. They were involved in institutions such as the National Reconstruction Commission and the National Economic Council. One notable connection within this community is their affiliation with Southeastern University in Nanjing, of which Chen Ruxuan (陳茹玄) was vice president in 1926.

Community 05. Harvard-Chicago-NYU ministerial advisors. The fifth community consists of law graduates from Harvard, Chicago, and New York Universities who served as ministerial advisors within the central government under the Nationalist regime. These legal experts were closely associated with various ministries, including the Ministries of Foreign Affairs, Education, Communications, and the Legislative Yuan. Additionally, some members of this community were involved

⁸¹ The Shanghai Provisional Court was established in 1926 to replace the mixed courts with the aim of replacing the mixed courts that had previously handled cases involving both Chinese and foreign parties.

in teaching positions at Beijing University, specifically in institutions such as the Customs College and the College of Communications.

The three communities of individuals exhibit a distinct geographical basis. The first group (P1) is primarily based in the northern region of China, including Beijing and Tianjin. This geographical concentration is closely connected to the historical significance of the area as the national capital during the late Qing dynasty and the Beiyang government. The first group overlaps with the organizational groups 1 (late Qing literati) and 5 (Harvard graduates). The second group (P2) is associated with the Nationalist Government based in Nanjing and overlaps with the Yale (O3) and Columbia (O4) communities. The third group (P3) perfectly aligns with the cluster of Shanghai professionals educated at the University of Michigan (O2).

The presence of strong ties among individuals within the network is evident, indicating close connections that were established during their studies and further developed throughout their careers. Despite differences in generations and native places, individuals such as Chen Tingrui and Wu Jingxiong, who graduated from Soochow University and the University of Michigan, found themselves working at the Shanghai Municipal Council during the same period, from 1928 to 1934. Similarly, individuals from the same native place, such as Liang Yunli (梁鏊立) and Wu Jingxiong from Zhejiang province, had overlapping roles at the Shanghai Provisional Court and positions in the Comparative Law School of China. The presence of strong ties is also evident among graduates of specific American universities and their subsequent employment in China. Shanghai-based institutions, for example, showed a preference for hiring graduates from the University of Michigan, while the central government relied heavily on legal experts from Yale, Columbia, Harvard, and Chicago.

In conclusion, this study contributes to a better understanding of the “institutional transplantation” process by American-educated lawyers in China.⁸² It highlights the role these lawyers played in disseminating legal knowledge acquired in the United States through teaching, private practice, and service in judiciary and government institutions. Network analysis reveals four main profiles of legal professionals: career officials, external experts, private practitioners, and transitional figures, which adds complexity to previous research on the professionalization of lawyers. The study also emphasizes the remarkable mobility of these lawyers across different spheres and institutions, driven by the expanding boundaries of legal expertise, the prestige associated with American degrees, and cooptation practices among peers. However, there were limitations to the free circulation of foreign-ed-

82 Sun, Zhidu Yizhi: *Minchu Shanghai de Zhongguo Lüshi (1912–1937)* (Institutional Transplantation: The Chinese Lawyers in Republican Shanghai).

ucated lawyers. They tended to interact more intensively with fellow alumni from the same university, and there were fewer connections between the late Qing literati and the emerging legal experts under the Nanjing regime. Furthermore, the distinction between the group of Shanghai practitioners (cluster O2) and government experts based in Nanjing (clusters O3, O4, O5) can be seen as a reflection of the competition that existed between lawyers from these two regions during the Republican era in China, which has been noted in previous scholarship.⁸³ Despite these limitations, the study highlights the interconnectedness of different groups. Hybrid figures like Xu Weizhen played significant roles under successive regimes, and graduates from Columbia, Harvard, and Chicago bridged the economic bureaucracy and the judiciary in the Nanjing government. The Shanghai Provisional Court served as a brokering institution between different clusters based in Beijing (P1), Shanghai (P2), and Nanjing (P3).

Networks of Engineers

The second study focuses on a population of 158 engineers mentioned in Li Ximou's piece. They held a total of 241 positions distributed across 139 organizations, including 26 universities and 113 employing institutions. These engineers were grouped into 15 major sectors, reflecting the diverse areas of specialization within the engineering profession. The largest sector was electrical engineering (34), which was further subdivided into electrical power engineering, electrical communication, and electrical manufacture. Other sectors included engineering research (20), railway engineering (14), highway engineering (14), aeronautical engineering (12), river conservancy (11), municipal work (11), architecture (10), chemical engineering (9), mining engineering (9), mechanical engineering (5), naval construction (4), and textile engineering (4). The 158 engineers represented a wide range of educational backgrounds, with a total of 149 different educational curricula.

The connections between universities and fields of engineering were asymmetrical, reflecting the strengths and specializations of the institutions (Figure 12). The Massachusetts Institute of Technology (MIT) dominated in most fields of engineering, particularly in engineering research, chemical engineering, electrical manufacture, mechanical engineering, naval construction, and municipal works. The University of Michigan competed with MIT in aeronautical engineering. Cornell University stood out in civil engineering, particularly in railway and river conservancy, while Columbia University had a stronger presence in mining engineering.

⁸³ Sun, see esp. Chapter 3.

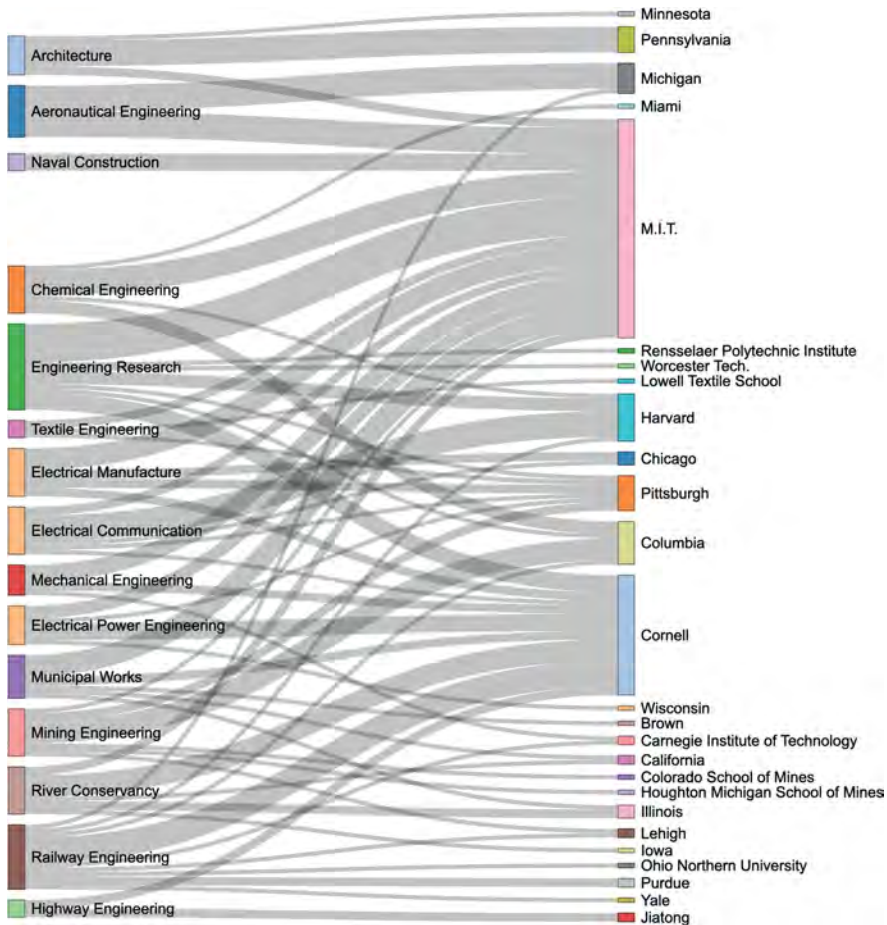


Figure 12: Flow chart linking the different branches of engineering with their specialized training institutions.

Cornell University also excelled in electrical power engineering, while Harvard University was a leader in electrical communication. The University of Pennsylvania was the preferred choice for students interested in architecture, followed by MIT.

From the dual network analysis of affiliations, six main groups of engineers were identified, overlapping with nine clusters of organizations (Table 10, Figure 13). Some clusters were focused on specific branches of engineering, such as railway and mining (O1, O7, O8), river conservancy (O5, O6), and architecture (P5). Other communities revolved around *alma maters*, including MIT (P3) and the University of Pennsylvania (P5). Certain clusters were associated with specific employing institutions, such as the Ministry of Railway (O1), Ministries of Communications

Table 10: Communities of engineers and their organizations, from *American University Men in China*, 1936 (p. 90–106).

NoCluster	Label	Nodes	Ties	Corresponding clusters
O1	Cornell-Railway	17	41	P1
O2	Columbia-Michigan-Industries	18	31	P2
O3	MIT	34	44	P3, P5
O4	NCC-Jiaotong-Pittsburg	17	27	P2
O5	River Conservancy (Jiangsu)	6	7	P1
O6	River Conservancy (outside Jiangsu)	6	5	P6
O7	Railway Commission	6	8	P2
O8	Northern Railway-Mining	13	17	P2
O9	Harvard-Communications	7	9	P4
P1	Cornell	32	331	O1, O5, O7
P2	Columbia-Michigan-NCC	23	64	O2, O4, O8
P3	MIT	39	741	O3
P4	Harvard-Communications	12	27	O9
P5	Penn-Architects	3	3	O3
P6	Illinois-California-Cantonese	6	7	O6

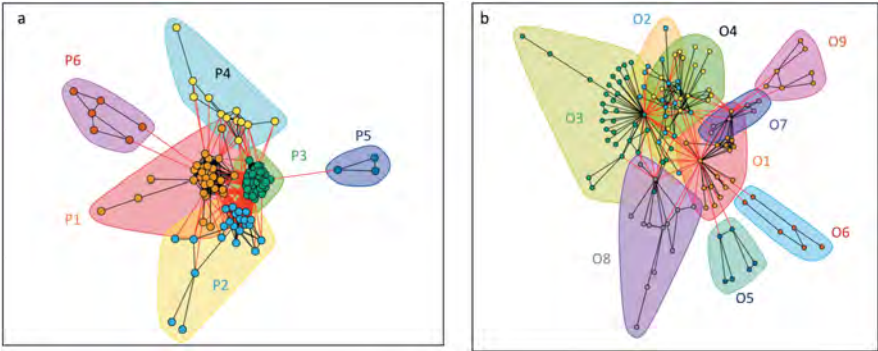


Figure 13: Communities of engineers (a) and their organizations (b), *American University Men in China*, 1936 (p. 90–106).

(O9), Ministry of Industries (O2), National Construction Commission (O4), and New Railway Commission (O7). The National Construction Commission and the Ministry of Industries were more inclusive, recruiting experts from various universities, primarily Columbia, Michigan, and Pittsburgh. They provided opportunities for engineers from different backgrounds to find positions within their multiple bureaus and agencies. Other clusters were more specialized. The Ministry of Railway primarily hired experts from Cornell (first generation) and Jiaotong graduates (second generation). The New Railway Commission mainly consisted of graduates from

Purdue. Engineers working in river conservancy in Jiangsu province were trained at Brown University. Engineers employed in other regions, such as Zhejiang, Guangdong, and Northern China, received their training at the Universities of California and Illinois. Harvard graduates dominated the Ministry of Communications (P4), while MIT graduates were employed in various fields, including architecture, naval construction, and the chemical industry. The strong ties between American universities and employers in China indicate the presence of privileged channels of selection and cooptation practices among alumni. Government institutions at the central level extensively recruited graduates from MIT, Columbia, Michigan, Cornell, and Pittsburgh. At the local level, Harvard graduates dominated administrative positions in Zhejiang.

Collaboration and partnerships were evident among alumni, particularly in the fields of architecture, aeronautical engineering, and electrical engineering. Graduates from MIT, the University of Michigan, and Harvard University displayed particularly strong ties. Examples include five Michigan graduates serving in the National Government Air Service (C. Y. Liu, Johnston Tseng, M. T. Lee, P. L. Li, P. N. Tien), MIT graduates employed by the Municipality of Greater Shanghai (Xu Peihuang 徐佩璜 in Public Utilities, Shen Yi 沈怡 in Public Works, Xue Cishen 薛次莘 in the Bureau of Highway), and Harvard alumni working at the Chekiang Provincial Telephone Administration (Shen Luzhou 沈魯周, Zhao Cengjue 趙曾珏, Bing Yukun 秉玉坤). In the private sector, there were several instances of former classmates becoming associates in the same enterprise. For instance, two graduates from the University of Pennsylvania (Chen Zhi 陳植 and Zhao Shen 趙深) co-founded the United Architects company in Shanghai, while two other graduates (Zhu Bin 朱彬 and Yang Tingbao 楊廷寶) established a competing firm called Kwan, Chu and Yang Architects and Engineers. Similarly, former classmates from MIT established the China Chemical Works, Ltd., and the China Scientific Instrument Company was founded by former students at the University of Chicago (Li Yaobang 李耀邦 and Ding Zuocheng 丁佐成). Another pair of graduates from the University of Pittsburgh established the Chinese National Electric and Pottery Company (Yang Jingshi 楊景時 and Zhou Qi 周琦).

This case study complicates the distinction between political technicians and technical experts proposed by Thorben Pelzer, as it reveals two additional profiles of engineers, namely engineering entrepreneurs and engineering researchers, which were not adequately represented in the National Resources Commission materials.⁸⁴ The network analysis conducted in this study also extends previous research on railway engineers by uncovering their mobility across various branches of engi-

⁸⁴ See Pelzer's chapter in this volume.

neering, particularly mechanical and electrical.⁸⁵ While the adaptability of engineers initially emerged as a response to the limited job opportunities available to them, it eventually facilitated the circulation of technical expertise across different sectors. Individuals with high betweenness centrality served as brokers who navigated among different domains of application throughout their careers. For example, Ling Hongxun (凌鴻勳) progressed from being a student engineer with the American Bridge Company to becoming a chief engineer and director of major railway lines (Canton-Hankow, Lunghai), and eventually serving as the president of Jiaotong University. Similarly, Hu Ruixiang (胡瑞祥) gained practical experience with the New Jersey Bell Company in electrical engineering before assuming positions as chief engineer and director in the Nanking Telephone Administration and the Department of Telegraph and Telephone of the Ministry of Communications. Lu Weipu (盧維溥), director of the Central Machine Works of the Ministry of Industries, worked with the Curtiss Airplane Company before returning to China. Despite their versatility, there were certain limitations to the free circulation of engineers. The distinction between clusters O5 (river conservancy in the Jiangsu area) and O6 (river conservancy outside Jiangsu) suggests the existence of geographical boundaries that restricted the mobility of river conservancy engineers to specific regional areas. Engineers who focused their careers within the government as engineering politicians may have reached higher positions but had limited exposure and experience outside their sphere of influence. Similarly, technical experts like Hou Jiayuan (侯家源) chose to remain within the railway sector, progressing from assistant chief engineer to chief engineer and eventually director of major railway lines.

Nevertheless, this case study highlights the crucial role of American-educated engineers in facilitating the circulation of engineering knowledge and expertise between China and the United States. Through their teaching positions at prestigious engineering colleges in China, these engineers passed on their firsthand knowledge gained from American universities to future generations of Chinese engineers. This knowledge transfer significantly contributed to the development of engineering education and practice in China. Furthermore, engineers who gained practical experience with American firms before returning to China served as vital conduits for knowledge transfer. Their exposure to American engineering practices and technologies allowed them to bring back valuable insights and apply them in Chinese contexts. Collaboration programs between Chinese and American researchers at institutions like Tsinghua further fostered the co-production of sci-

85 Köll, Elisabeth. "The Making of the Civil Engineer in China: Railroad Companies, Knowledge Transfer, and Professional Management." In *Knowledge Acts in Modern China: Ideas, Institutions, and Identities*, edited by Robert Joseph Culp, Eddy U, and Wen-Hsin Yeh, 148–74. China Research Monographs 73. Berkeley, CA: Institute of East Asian Studies, University of California, 2016.

entific knowledge in fields such as chemical and mechanical engineering. Delegates attending international congresses, such as Xue Zukang (薛祖康) who participated in the 7th International Road Congress in Munich in 1934, and the three members of the National Good Roads Association of China (Chang Hsia-yo, Pan Shao-chien, Sun Mao) who participated in International Good Roads Conferences, facilitated the exchange of expertise on road construction at an international level.⁸⁶

Conclusion

U.S. scholars have long recognized the transformative impact of modern universities as a significant social revolution that greatly contributed to American expansion throughout the twentieth century.⁸⁷ Simultaneously, historians specializing in Chinese studies have unveiled the crucial role played by tertiary and post-tertiary education in China's remarkable "economic miracle" since the Reform era (1978–).⁸⁸ Building upon these insights, this paper argues that the American university men of China, characterized by the breadth of their curricula, their high level of qualification, and their influential positions across various sectors of society, have fundamentally intertwined the development of the two countries and profoundly shaped the history of their relations for over a century.

The educational paths of the American university men of China were shaped by a complex interplay of personal, social, and institutional factors. For students in science and engineering, the choice of institutions was primarily driven by the availability of technical curricula offered by specialized schools. However, as comprehensive universities emerged and competed for the best minds from affluent families, additional factors began to influence decision-making processes. Some students followed in the footsteps of renowned pioneers like Yung Wing (Rong Hong), while others sought to continue family legacies, exemplified by the Wang brothers and Kuang Fuzhuo's son or nephew. Historical precedents such as the Chinese Educational Mission (1872–1881) and partnerships established between American and Chinese institutions, like Saint John's and Pennsylvania, played a role in shaping students' perceptions of university reputation and guided subsequent flows of students.

⁸⁶ The three individuals mentioned could not be identified by their Chinese names.

⁸⁷ Cohen and Kisker, *The Shaping of American Higher Education*; Kirby, *Empires of Ideas*.

⁸⁸ Liang Chen, Ren Yunzhu, and Li Zhongqing, *Qi Shanlin Zhe: Zhongguo Xiandai Zhishi Jiecheng de Xingcheng, 1912–1952 [Our Forefathers: Chinese University Graduates and the Chinese Academe]* (Beijing: Beijing shehuikexue wenxian chubanshe, 2023).

Societal concerns and evolving attitudes toward education in China also influenced the selection of disciplines and the level of study. As Chinese universities began to establish their own merits, there was a tendency during the Republican era to send more advanced students for postgraduate work. The emphasis on utilitarian knowledge, technical expertise, and vocational studies aligned with the modernization needs of Chinese society and dovetailed with the development of graduate schools in the United States, such as Harvard Medical School and the Wharton School of Finance. The strong focus on business and the liberal professions, particularly after World War I, mirrored the prominence of the urban elite in Shanghai, which formed the foundation of the American University Men's population during its "golden age" following the war.⁸⁹ Financial considerations and the selection of mentors present challenges in terms of documentation.⁹⁰ Unearthing the sources of funding and the costs of education requires delving into personal papers and institutional archives, making it difficult to gather systematic data across the wide array of individual circumstances and institutions spanning such a lengthy period. However, it is worth noting that among this select population, which enjoyed financial backing from wealthy families and government scholarships, monetary concerns may not have been the primary factor driving their choices.

During the studied period from 1882 to 1935, the dual network of curricula and universities underwent significant transformations. There was a notable expansion in the variety of courses and institutions available to students, with a growing popularity of business and professional courses. The level of qualification also increased in response to heightened expectations among employers, leading to a greater emphasis on doctoral and postdoctoral research. While there was a gradual shift in student flows towards the Midwest and public state institutions such as the University of Michigan and the University of California, private elite universities continued to attract large cohorts of students. As competition in the job market intensified, these universities maintained their allure and prestige. Though academic ranking systems were less formal during this period compared to today, the emergence of such systems reinforced the prestige of elite universities. While Columbia University remained unchallenged in its centrality, a small cluster of dominant universities including Harvard, Yale, the University of Pennsylvania, and the University of Chicago persisted throughout the entire period. While Chinese

⁸⁹ Marie-Claire Bergère, *The Golden Age of the Chinese Bourgeoisie, 1911–1937* (Cambridge: Cambridge University Press, 1989).

⁹⁰ On the cost of studying in the United States from a comparative perspective with Japan, see Zuo You, Yang Li, and Liang Chen, "Analysis of the Cost of Studying Abroad in Modern China (1900–1937) – Using Studying in Japan and the United States as Examples," *Twentieth-Century China* (forthcoming).

students may have constituted a minority among the American student population, their concentrated presence on the campuses of the largest elite universities had a significant impact that far outweighed their statistical insignificance.

The American-educated individuals who returned to China after their studies not only played a vital role in the rise of modern universities but also contributed to their expansion beyond the United States. Many of these returnees assumed key positions as professors, college deans, and university presidents, bringing with them innovative ideas and practices that helped shape the development of Chinese higher education. Moreover, the American returnees introduced the concept of alumni associations in China. This can be observed through the proliferation of alumni associations, including notable ones at Tsinghua, St. John's, and Peking Universities. The popularity of *Who's Who* publications, which recorded and publicized the achievements of alumni, further demonstrated the significance of alumni networks in China. Chinese universities also began to grant honorary degrees, recognizing the accomplishments of distinguished alumni and seeking their support. In essence, the American returnees played a pivotal role in exporting and disseminating worldwide the American-inspired system of institutional rankings, honorary degrees, and alumni networks, which altogether shaped the modern academic industry.

Sino-American alumni networks also played a significant role in shaping the identity and influence of the American-educated individuals in Republican China. Under the Nationalist regime, these individuals became increasingly influential across various sectors of society, including government, business, and academia. Through a systematic analysis of contemporary *Who's Who* publications, it becomes evident that American college graduates had a remarkable and continuous presence within the Republican government, especially under Nationalist rule. Our findings suggest that college degrees became a substitute for the traditional imperial degrees after the examination system was discontinued in 1905. This recognition of college degrees as a measure of merit and qualification extended beyond government positions, with Shanghai's business and professional elites also valuing college education. This reflects the broader influence of a meritocratic culture that encompassed not only government officials but also those in the private sector. Furthermore, network analysis reveals the widespread influence of the Young Men's Christian Association (YMCA) among the American educated in China. By recognizing the pivotal role of American-educated YMCA activists, we gain a deeper understanding of the intricate connections between Christianity, urban elites, the government, and the Nationalist Party in Republican China, where previous scholarship has barely touched upon. Meanwhile, Americans in China were primarily active in missionary institutions, American corporations, U.S. consulates, and economic missions. The networks formed by both Chinese and American graduates were intricately built

upon the foundation of co-membership in elite clubs, voluntary organizations, and mission-affiliated institutions, including esteemed establishments such as St. John's University and St. Luke's Hospital.

Obtaining a degree from an American university opened a plethora of opportunities and allowed individuals to navigate across different spheres and sectors. This was particularly evident in the cases of engineers and lawyers, who benefited from the considerable flexibility and advantages offered by an American education, positioning them as prominent figures within the new generation of Republican elites. However, it is important to note that the range of opportunities was not equally distributed among all individuals. It varied based on factors such as their area of specialization, the reputation of their *alma mater*, their generational group, the political climate at the time of their return to China, and other intangible factors like family background, guarantors, and personal relationships. The two case studies explored in this paper shed light on the diverse roles that teaching and academic positions played in the careers of the American-educated individuals. Depending on their specialization, personal aspirations, and the stage of their career, serving in academia in China could serve as a launching pad for political influence, a part-time occupation, or a genuine vocation dedicated to advancing scholarship.

This research acknowledges several limitations that should be addressed. First, the focus on American-educated elites excludes individuals who received their education in China or other foreign countries. This limitation obscures potential relationships and interactions between the American-educated individuals and their counterparts from different educational backgrounds. Future research should aim to incorporate a more comprehensive analysis that encompasses a broader range of educational experiences. Secondly, the reliance on Who's Who publications introduces potential biases into the results. These publications tend to feature individuals who were highly prominent, well-connected, or willing to share their personal information. While this selection bias is acknowledged, Who's Who publications still provide valuable access to an intermediate layer of elites that can be used as a benchmark to go beyond the hagiographic accounts often associated with well-known celebrities and offer insights into the lives and accomplishments of individuals who may be moderately known or less prominently featured in historical narratives. Moreover, these publications offer more comprehensive and consistent information compared to other sources like newspapers or personal archives, making them suitable for the systematic analysis undertaken in this paper. Thirdly, network analysis does not tell the whole story. It provides the backbone which historians can flesh out with contextual knowledge and narratives of personal lives. Nevertheless, formal network analysis remains an indispensable method for overcoming the limitations of solely relying on biographical accounts and recti-

fying methodological flaws found in mainstream studies of cultural transfer and state-society relations. Ultimately, this chapter has presented a pioneering method for analyzing two-mode networks, offering significant value for historians. Unlike sociologists who can gather friendship data from social media or directly interview individuals, historians encounter difficulties in documenting direct relations among historical actors. As a result, they often rely on shared affiliations to infer potential relationships. The proposed place-based method addresses this challenge, bridging a crucial gap in historical network research and providing historians with a powerful tool to uncover and understand complex historical relationships.

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Nora Van den Bosch

Chinese Students in Belgium (1919–1939): An Exploratory Analysis with the *Liubi* *Xuesheng*-Dataset

Introduction

On January 28, 1904, the first cohort of young Chinese students, ranging in age from 14 to 24, arrived at the Hôtel de Grand-Miroir in Brussels. They were under the supervision of Yan Haiming (閻海明) and had been selectively chosen by the Viceroy of Liangjiang, Duan Fang (端方, 1861–1911), from an array of modern schools in Hubei. Their destination was the University of Liège, which had heeded the call of Baron Paul de Favereau, the Minister of Foreign Affairs, to welcome these international guests. There, the students were expected to undertake commercial and mining legislation courses following their completion of a French language program at the “Ecole Chinoise” located on Place Maghin.¹

The students had a dual purpose. Similar to other young Chinese sent abroad, they were expected to acquire knowledge and skills to contribute to the Qing government’s industrial modernization agenda upon their return. Concurrently, their presence in Belgium served to augment the country’s economic influence in China, where Belgium had established a settlement in Tianjin since 1902. Regardless of the eventual outcomes, this significant arrival marked a new era in Sino-Belgian relations and paved the way for subsequent students. This path intersected with notable figures post the 1911 revolution, such as Chu Minyi (褚民誼, 1884–1946) and Weng Wenhao (翁文灏, 1889–1971), as well as with those present during the zenith of the work-study movement, including Liu Bojian (劉伯堅, 1895–1935) and Nie Rongzhen (聶榮臻, 1899–1992), and continued up to the establishment of the Sino-Belgian Boxer Indemnity scholarships through the 1930s.

The foundational dataset for this study, the *Liubi Xuesheng*-dataset (留比學生數據, LBXS for short), chronicles the academic journeys of Chinese individuals in Belgium during the first half of the twentieth century. By leveraging secondary sources and a variety of archival materials, the LBXS aims to serve as a reference for analyzing distinct subpopulations of Chinese students in Belgium over time,

¹ “Les étudiants Chinois à Liège,” *La Meuse*, February 1, 1904.

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enhancing prior research predominantly based on national statistics.² This dataset is not only valuable for the historiography of Sino-Belgian intercultural exchanges but also lends itself to broader comparative analyses of Chinese students in Western countries or more focused examinations of the Work-Study Movement participants in Belgium.

This chapter embarks on an exploratory analysis utilizing the LBXS dataset as it stood in June 2023. It contrasts the demographics of Chinese students at five principal Belgian educational institutions during the interwar period (1919–1939), a time marked by a significant influx of Chinese students. These institutions include the Labor University of Charleroi, the Catholic University of Louvain, the Free University of Brussels, the University of Ghent, and the University of Liège.³

The article is structured into four main segments. It begins with a comprehensive historical overview of Chinese educational endeavors in Belgium, from the initial arrivals to the establishment of the Sino-Belgian Boxer Scholarships. The subsequent sections are dedicated to acquainting the reader with the LBXS dataset. Specifically, the second section scrutinizes the three pivotal sources utilized in the dataset's creation and curation, assessing their strengths and limitations. The third section delineates the dataset's current configuration and inherent constraints. Finally, the analysis segment unfolds, introducing a focused dataset referred to as the “five schools’ subset.” Within this framework, we will analyze the five student groups in terms of their provincial origins and ages at initial enrollment. We will then correlate the collective profile of these school populations with the enrollment timeline across the interwar period.

1 General Overview

The project of Chinese education in Belgium expanded quickly after the arrival of the first students in Liège in February 1904. Within two months, as the students settled into accommodations provided by the Chinese government, the Chinese Minister in Belgium, Yang Zhaoyun (楊兆璽, 1854–1917), recognized the project's potential and initiated negotiations to send an additional group of students by June. By September of the same year, the Chinese student population was estimated to

2 Grauwels, Stephan. “Chinese Studenten in België, 1902–1939” (MA thesis, Ghent University, 1985); Soetens, Claude. “Les Etudiants Chinois en Belgique de 1900 à 1940.” In *The History of the Relations between the Low Countries and China in the Qing Era (1644–1911)*, 487–508. Leuven Chinese Studies 14. (Louvain: Universitaire Pers Leuven; Ferdinand Verbiest Foundation, 2003).

3 The schools are represented with the English translation of their name.

have grown to 75, distributed across various locales including Brussels, Ghent, Mons, Namur, Liège, and Bressoux. This burgeoning student body was no longer exclusively from Hubei; approximately two dozen had arrived from Sichuan, with a smaller contingent from Hunan.⁴ Concurrently, Chinese students secured the right to live with Belgian families rather than being sequestered in communal Chinese housing. Prior to the second group's arrival, the pioneering contingent had engaged in a school strike to challenge the restrictive encasement regime imposed since February, prompting the Chinese Minister to intervene and temporarily locate them in Brussels to defuse the tension.

The initiative persisted beyond 1912 but was interrupted by the onset of the First World War. The war's upheaval severed the burgeoning educational exchanges between Belgium and China, redirecting the paths to educational access within Belgium. While the Qing-era students had benefited from a stipend of 1,600 taels – equivalent to over 6,000 francs – to subsidize their living expenses, the Republican government's financial capabilities were hamstrung in the early 1920s by political tumult domestically.⁵ Furthermore, the postwar economic landscape in Belgium, marked by inflation, curtailed further educational opportunities. As a result, private individuals and organizations stepped in to construct a new framework for Chinese educational advancement in Belgium. While Soetens' assertion that these initiatives were of Belgian rather than Chinese origin holds technical merit, it portrays a limited perspective on this period of Sino-Belgian engagement. To fully appreciate these efforts, it is essential to consider them within the broader milieu of the work-study movement that was concurrently unfolding in China and France.

The Work-Study Movement⁶

Chinese governmental support for students to go abroad had reduced significantly compared to the Qing. However, this reduction did not signify the end of overseas educational endeavors. Between 1919 and 1921, a wave of approximately 1,600 Chinese students made their way to Europe. They were participants in the Work-Study Movement, which espoused the acquisition of Western technology and knowledge as a means of national salvation and advocated for self-sufficiency through factory work while studying in Europe. This movement was a response to the New Culture Movement of 1915 and its successor, the May Fourth Move-

4 "Chronique de la ville," *Étoile Belge*, September 14, 1904.

5 "Les étudiants Chinois à Liège," *La Meuse*, February 1, 1904.

6 The background in this section is from Marilyn A. Levine, *The Found Generation: Chinese Communists in Europe during the Twenties* (Seattle/London: University of Washington Press, 1993).

ment of 1919, both of which underscored an emerging consciousness, particularly among young Chinese, that the country's state of affairs remained unsettled and unimproved post-1911 revolution, necessitating a reassessment of intellectual paradigms.

Key figures in orchestrating the work-study project included Cai Yuanpei (蔡元培, 1868–1940), Li Shizeng (李石曾, 1881–1973), and Wu Zhihui (吳稚暉, 1865–1953). While these coordinators predominantly focused on France for the educational placement of Chinese students, they also facilitated student migration to Belgium from the early 1910s.⁷ Given that Belgian higher education institutions primarily conducted instruction in French, this linguistic uniformity rendered enrollment more feasible for Chinese students who had previously studied the language in preparatory schools in China.⁸ Notably, in 1913, a group of six students, including Peng Jiqun (彭濟群, 1896–1992) and Wang Shaohui (王紹輝, 1895–?), were guided to the Robert Institute in Brussels by Chu Minyi, an alumnus of Belgian education, and Wei Chenzu (魏宸組, 1880–1942), who would eventually become the Chinese minister in Brussels.⁹

Despite its initial appeal, the work-study program began to reveal its shortcomings by the 1920s. The organizers' overly sanguine perception of the postwar French economy, combined with inadequate resources to meet students' needs and the students' own challenges in securing employment due to inexperience or language barriers, led to increasingly precarious living conditions for many. Such hardships culminated in heightened tensions within the Chinese community in France by late 1920. Recognizing the unsustainable nature of their original model, the founders contemplated alternative methods for overseas education, culminating in the establishment of the Sino-French Institute in 1920. Admission to this institution was constrained by rigorous entrance exams and prohibitive tuition fees, to the dismay of worker-students who had anticipated open access.¹⁰

7 The Frugal study Society 留法檢學會 (founded in 1912), Diligent-work Frugal-Study Association 留法勤工儉學會 (1915) and Sino-French Education movement Association 華法教育會 (1916)

8 Even after the Flemish emancipation for the university of Ghent the schools continued to do in various capacities until the split of the university of Brussels and Louvain in the 1960s. For the history of Belgian universities, see Bertrams, Kenneth. *Universités et entreprises. Milieux académiques et industriels en Belgique (1880–1970)* (Bruxelles: Le Cri, 2006).

9 Wang Qingyu 王慶餘, *Liubi xuesheng shi* 留比學生史 [History of Chinese Students in Belgium] (Taipei: Guangqi wenhua shiye, 2011), 95.

10 For recent work on the Chinese presence at the Sino-French Institute, see Zhe Zhou, "Les Hôtes du Fort St-Irénée: Les Étudiants Chinois de l'Institut Franco-Chinois de Lyon (1921–1950)" (These de doctorat, Paris, EHESS, 2021).

The Université du Travail in Charleroi

The early interbellum period marked the commencement of private initiatives aimed at fostering Chinese education in Belgium, starting with dialogs between the Sino-French Institute and the Labor University of Charleroi (Université du Travail in Charleroi, hereafter UT). Contrary to its name, UT was not a university in the traditional sense but rather a technical school established to train engineers and technicians. It was founded in 1911 from the amalgamation of the Provincial Industrial Museum and existing institutions, including the *École industrielle supérieure du Hainaut*.

While the initial interactions between UT and the work-study movement remain somewhat obscured, an article from *Shenbao* on May 26, 1920, offers some clues. The piece details a correspondence between a Belgian university professor and Chu Minyi, a leading figure in the Sino-French Institute, regarding the “Chinese university” in Lyon. Upon learning that the university’s establishment was complete, the professor proposed the creation of a “Sino-Belgian university” (中比大學) and suggested a meeting to discuss its organization. Chu, alongside Zhang Boquan (張溥泉, 1882–1947), agreed to visit Belgium to further this endeavor.¹¹

The Chinese article did not specify which “Belgian university” was involved or who the “professor” was for that matter, but the visit received some coverage by the *Journal de Charleroi* on April 13. It was reported that two Chinese figures, named “Chang-ki” (transliteration of Zhang’s alias Zhang Ji 張繼) and “Mr. Tsu” (Chu Minyi), visited the UT with the aim to create “an education and instruction center for young Chinese who will be sent there to gain the necessary knowledge to become construction foremen and technicians.” It also stated that Jules Hiernaux (1881–1944) and Paul Pastur (1866–1938), respectively the head of the university and the president of the administrative commission, would probably take up the responsibility of setting up that center.¹²

The project became official only a couple of months later, on November 25, when Jules Hiernaux announced in an interview with the same newspaper that the university was expecting Chinese students and that *La Mission Chinoise* in Bois-Colombes near Paris had been informed about this matter. He stated that the Chinese government sought to create a cadre of technicians and had asked if the university would accept a hundred or so students, a request that the director had

11 “Zhongbi daxue de xiansheng” 中比大學的先聲, *Shenbao*, May 26, 1920. Additional note: the term “Sino-Belgian University” (中比大學) is only deployed in Chinese sources. The name has never been used in (Franco-)Belgian print media.

12 “Visiteurs Chinois,” *Journal de Charleroi*, April 13, 1920.

finally accepted.¹³ The concrete plan later revealed by Paul Pastur was that the students would be placed at the *École Spéciale des Techniciens*, a division recently created by the UT to address the shortage of technical talent in Belgium, and that the Chinese would live in a cooperative similar to the organization in Gossillies for Belgian students from low-income families to lower the cost of living.¹⁴ From the essay by Jules Destrée (for reference, see later), we know that the Chinese students who would be sent by Lyon received a monthly average of 250 to 300 francs, either given by their province, the Sino-French mission, or their family.

In February of 1921, the center's establishment came to fruition. That same month, amidst discussions between Cai Yuanpei and Chu Minyi with Jules Destrée, the Minister of Sciences and Arts, regarding higher education and the Charleroi initiative, Paul Pastur – a local political figure and Destrée's confidant – was granted 125,000 francs by the Hainaut provincial government. This sum was earmarked for developing lodging near Charleroi to house the anticipated influx of Chinese students. At the provincial assembly on February 22, Pastur reported that the Chinese government had agreed to fund the installation of the Chinese Home, coinciding with its decision to no longer send students to Germany or Austria.¹⁵ Subsequent coverage by *Shenbao* indicated that the Guangdong government was the specific benefactor, following effective negotiations by work-study movement organizers.¹⁶ In March, the provincial government secured a substantial property from an individual named Ledoux in the Marchienne-zône, which boasted direct train access to Charleroi. However, the requisite renovations delayed the property's readiness, necessitating temporary housing with local families for the “forty sons from the Eastern Republic” who were slated to arrive that fall.¹⁷

On May 6, 1923, the inauguration of the Chinese home was officially celebrated. The *Journal de Charleroi* allocated two pages to the event, highlighting the opening ceremony of the facility and its sixty-five resident students. The publication featured summaries of addresses by six notable attendees: Paul Pastur; Luo Huai (羅懷) on behalf of the Chinese minister Wang Jingqi (王景岐, 1882–1941); Robert Fesler (*Bourgemestre* of Marchienne-zône); Chu Minyi; Mr. Li (probably Li Shizeng)

13 “Promenades et visites: A l'université du Travail: les Chinois,” *Journal de Charleroi*, November 25, 1920.

14 “La vie scolaire,” *Gazette de Charleroi*, March 5, 1921.

15 “Conseil Provincial du Hainaut,” *Journal de Charleroi*, February 23, 1921.

16 “Biguo gengzi peikuan” 比國庚子賠款, *Shenbao*, April 5, 1934.

17 In a report covering the 1921 visit of a Chinese delegation to Charleroi, it was mentioned that the initial group of 40 Chinese students would take residence in the school's housing by the following autumn. However, Jules Destrée's opinion piece “La Chine et Nous” reveals that, due to the ongoing renovations of the designated accommodations, the students were hosted by Belgian families instead. Source for the diplomatic visit: “La mission Chinoise,” *Gazette de Charleroi*, June 1, 1921.

on behalf of the Chinese students from Colombes; and Wu Mingji (吳銘基, 1894–?), President of the Society of Technicians at UT.¹⁸

The coverage was remarkable not only for its diplomatic overtures and expressions of Sino-Belgian camaraderie but also for its urgent calls to action. These appeals, articulated in Mr. Li's speech and Durandal's prologue, advocated for the renunciation of the Sino-Belgian Boxer indemnity, taking cues from similar moves by the US, France, and the United Kingdom. This advocacy resonated with prior endeavors from 1922, including a petition from UT's Chinese students published in *Xinwenbao* (新聞報) in April and Jules Destrée's essay "La Chine et nous" in the *Gazette of Charleroi* in November. The latter piece was cited in the petition's final iteration, submitted by the General Chinese Student Association to the Belgian government, advocating for the diversion of Boxer indemnity funds to Sino-Belgian educational initiatives. Accompanying the petition were 30,000 signatures from supporters, among them personnel from the education departments of Zhili and Hunan.¹⁹

These concerted efforts culminated in 1925 with a landmark agreement between the Belgian and Chinese governments to establish the Sino-Belgian Boxer Indemnity Fund Commission. This body was tasked with directing a portion of the funds to a variety of projects aimed at bolstering Sino-Belgian educational ties. Ultimately, the Charleroi project served as a foundation for collaboration between diverse stakeholders, marrying the Chinese pursuit of national revival with Belgian economic aspirations. The initiative demanded concerted effort from all involved and ultimately heralded a significant transformation in Sino-Belgian diplomatic relations.

The extent to which collaboration between Lyon and Charleroi developed during the latter part of the 1920s and early 1930s remains obscure in the records of Belgian local newspapers. Nevertheless, the fact that Cai Yuanpei's son, Cai Boling (蔡柏齡, 1906–1993), was a student at the school, coupled with the relocation of Wu Zhihui's family members to Charleroi, hints at a possible intimacy in the relationship. Notable instances of personal interaction included Fan Yuanlian (范源濂, 1875–1927) delivering a speech at UT in August 1923, a lecture by Cai Yuanpei on October 10, 1923, and a conference in 1928 led by Chu Minyi, who was then pre-

¹⁸ Durandal, "L'inauguration de "Home des Techniciens Chinois" à Marchienne-Zône," *Journal de Charleroi*, May 8, 1923.

¹⁹ The Chinese article of the petition sent by the UT students is "Faguo teyue tongxin" 法國特約通信, *Xinwenbao* 新聞報, April 13, 1922; Photocopies of the petition given by General Chinese Student Association are found in Grauwels, Stephan. "Chinese Studenten in België, 1902–1939" (MA thesis, Ghent University, 1985). The reference the author used is: Archief van het ministerie van buitenlandse betrekkingen dossier 330/515.

siding over the Sino-Belgian Boxer Indemnity Commission.²⁰ Nonetheless, the UT's Chinese initiative proved to be ephemeral; by 1937, enrollment had dwindled to just two students, and no new full or partial scholarships were awarded after 1936.²¹

Vincent Lebbe, the Chinese Students, and the Catholic Sphere in Belgium

During the initial period of communication between Charleroi and Lyon, a concurrent development was unfolding in France. On April 14, 1920, after having dedicated over two decades to missionary work in China with the Lazarists since 1895, Vincent Lebbe (雷鳴遠, 1877–1940) was instructed by Jean-Baptiste Budes de Guébriant (1860–1935) to depart from Tianjin and tend to the needs of the struggling Chinese student community in Europe. Until his return to China in 1927, Lebbe played an instrumental role in supporting Chinese students, facilitating their enrollment in secondary and higher education institutions, teaching French, providing financial assistance, securing scholarships, arranging accommodations, and helping them find employment in factories.

Initially centered in France, Lebbe's activities swiftly extended to other countries, including Belgium, his native land. Records from the UC Louvain archives, as examined by Wang Qingyu, indicate that Lebbe corresponded with more than 400 Chinese students, with around 130 based in Belgium.²² According to biographical compilations by Wang, at least 85 of these students received financial support from Lebbe during their time in Belgium. While a majority were enrolled at the Catholic University of Louvain, others attended schools in Liège, Brussels, and Ghent. Huang Fa-dien notes that Lebbe placed 195 Chinese students across 54 Belgian schools.²³

Lebbe's overarching mission was for Chinese students in Europe to emerge as vessels of the Gospel or to at least foster a favorable view of it upon returning to China. During his inaugural lecture in Belgium on December 23, 1922, he outlined the challenges Catholicism faced in China: the encroaching influence of Protes-

20 The speech of Fan Yuanlian is covered in the article "Fan Yualian xiang liubi xuesheng yan-shuo" 范源瀛向留比學生演說, *Shishi xinbao* 時事新報, August 2, 1923. The text of Cai Yuanpei's lecture was published in Cai Yuanpei 蔡元培, "Zhongguo de wenyi zhongxing" 中國的文藝中興, *Dongfang zazhi* 東方雜誌, 21 (3), February 10, 1924.

21 "Rapport Annuel (1936–1937)," 1937. BE/942855/2384/1800. KADOC KU Leuven; "Rapport Annuel (1935–1936)," 1936. BE/942855/2384/1800. KADOC KU Leuven.

22 Wang Qingyu 王慶餘, *Liubi xuesheng shi* 留比學生史 [History of Chinese Students in Belgium] (Taipei: Guangqi wenhua shiye, 2011), 113.

23 Huang Fa-dien, "Le Père Lebbe et les étudiants chinois en Europe (1920–1927)" (Unpublished MA Thesis, UC Louvain, 1972), 77–79.

tantism introduced by Chinese students returning from the United States – where Boxer Indemnity scholarships had furthered American pedagogic outreach – and the spread of Bolshevik antireligious sentiment through Europe, which threatened to import secular ideologies into China. To counter these forces, Lebbe advocated for imparting “right values” to Chinese students in Europe – emphasizing works of charity, as mentioned in the context of the conference – so they might offer a constructive counterbalance in their homeland.²⁴

As a private endeavor, Vincent Lebbe’s work supporting Chinese students was regularly beset by financial challenges. His reliance on private donations was supplemented by a series of lectures across Western Europe, where he not only spoke on behalf of the Chinese students but also sold cards and various items, and occasionally accepted contributions through subscriptions to Catholic publications that supported his mission.²⁵ Lebbe collaborated with a variety of stakeholders, including some from beyond the Catholic community, to establish and administer funds. Among these ventures was *Amitiés Belgo-Chinoises*, co-founded with André Boland in 1923. This organization boasted Cardinal Désiré Mercier, one of Lebbe’s primary benefactors, as honorary president and textile industrialist Armand Simonis as the active president. Another initiative was “Friends of Lebbe,” a committee established with Léopold Levaux and led by a Liège banker, Hubert Duquenne. Furthermore, Lebbe secured subsidies from the Propaganda Fide on at least two occasions. In 1924, the Missions étrangères in Paris was awarded one million liras (approximately 869,565.2 francs at that time) for his service to Chinese students in Europe, and the subsequent year, he received an allocation of 50,000 liras specifically for his efforts in Belgium.²⁶

Lebbe’s contributions extended beyond financial aid and public advocacy. In 1923, he founded the Association of the Chinese Catholic Youth (公教年青會; Latin

24 “La jeunesse de Chine, Conférence du R. P. Lebbe,” *Libre Belgique*, December 24, 1922; The written works of Lebbe that outlines his advocacy is: Lebbe, Vincent. *Que sera la Chine de demain?* Série Chine 1 (13). (Louvain: Xaveriana, 1925). Dutch translation: Lebbe, Vincent. *Jong China*. Série Chine 1 (17). (Louvain: Xaveriana, 1925).

25 Articles of subscription donations: “Billet Parisien,” *Libre Belgique*, May 18, 1922; “Pour Le Père Lebbe,” *Libre Belgique*, March 15, 1925; “Pour les oeuvres du Père Lebbe,” *Libre Belgique*, March 21, 1925; “Faits Divers: Pour le R. P. Lebbe (Chine),” *Libre Belgique*, June 19, 1925; “Souscription pour les oeuvres du Père Lebbe,” *Vingtième Siècle*, December 5, 1925; “Faits Divers: Pour le R. P. Lebbe en Chine,” *Vingtième Siècle*, December 7, 1925; “Les étrennes du Père Lebbe: deuxième liste,” *Vingtième Siècle*, December 9, 1925; “Les étrennes du Père Lebbe: troisième liste,” *Vingtième Siècle*, December 12, 1925; “Les étrennes du Père Lebbe: quatrième liste,” *Vingtième Siècle*, December 16, 1925; “Faits Divers: Pour le Père Lebbe (Chine),” *Libre Belgique*, February 2, 1926.

26 “De Voortplanting des geloofs: Verslag over het dienstjaar 1924,” *De Standaard*, February 1, 1926; “Het genootschap tot Voortplanting des geloofs in 1925,” *De Standaard*, October 3, 1926.

acronym: ASJC) to provide a counterpoint to the anti-religious sentiments circulating among Chinese students in Europe. This association, which initially ran a French magazine titled *Le bulletin de la jeunesse catholique chinoise* from Paris before relocating to Louvain, engaged in various activities. These included participating in religious retreats, such as the baptism of Chinese students at Averbode in 1924, attending conferences and congresses like the Association of the Belgian Catholic Youth (ASJB) event in Charleroi in 1924, and facilitating educational opportunities, exemplified by the establishment of a pre-university college in Verviers in 1928 that provided preparatory French language courses.²⁷

Over a span of seven years, Vincent Lebbe devoted considerable effort to garnering public support for Chinese students in Europe, devising a multitude of ways to offer them material and spiritual assistance. His endeavors culminated in the establishment of enduring organizational frameworks and networks within Belgium, which persisted beyond his return to China in 1927. Collaborating with the Abbey of Saint André, Lebbe facilitated the creation of the *Foyer Catholique Chinois*, envisioned as a hub for establishing Catholic university centers to serve Chinese students and to prepare secular priests for missionary work in China. Alongside *Amitiés Belgo-Chinoises*, the *Foyer* played a significant role towards the late 1920s, particularly when Georges Lemaître (1894–1966), the director of the *Foyer* in Louvain at the time, participated in the Sino-Belgian Interuniversity Committee, an organization that was involved with the allocation of the Sino-Belgian Boxer Indemnity Scholarships across major universities.²⁸

Sino-Belgian Boxer Indemnity Scholarships

In 1925, the Chinese and Belgian governments formalized an agreement to form the Sino-Belgian Boxer Indemnity Commission and to reinvigorate their collaboration on student exchanges.²⁹ The Commission earmarked one-quarter of the Sino-Belgian Boxer funds, totaling approximately 2,500,000 dollars, for Sino-

27 “Pour les étudiants chinois,” *Vingtième Siècle*, November 18, 1928; “Le Congrès de la Jeunesse Catholique Belge à Charleroi,” *Libre Belgique*, September 22, 1924.

28 Lemaître’s involvement with the Chinese students is covered in more detail in Lambert, Dominique. *Atom of the Universe: The Life and Work of Georges Lemaître*. Krakow: Copernicus Center Press, 2015). Also, for more recent work on the contacts between Vincent Lebbe and Chinese Students, see Pan, Zhiyuan. “Inculturation at Home: The Belgian Catholic Project for Chinese Students (1920–1930s).” *Religions* 15, no. 3 (March 8, 2024): 327. <https://doi.org/10.3390/rel15030327>

29 For more information on Sino-Belgian Boxer Indemnity Commission, see: Chih Jung Chen. “Zhongbi Gengkuan de Tuihuan Yu Yunyong” 中比庚款的退還與運用 [The Belgian Remission of the Boxer Indemnity]. (Master Thesis, National Chengchi University, 2012).

Belgian educational initiatives, while the remainder was designated for railway development in China.³⁰ By 1929, the infrastructure to support Chinese student mobility was fully operational, comprising primarily two organizations. The first entity, established in 1927, was the Sino-Belgian Interuniversity Committee (SBIC), with Maurice Pieters serving as the Secretary-General. This Committee united representatives from various educational institutions, Chinese students, and figures from the banking and industrial sectors. Its responsibilities included distributing loans to incoming students – sourced from private contributions – maintaining a library for Chinese students, securing internship placements, and conducting reports.

Contrary to initial reports in the Belgian media, the SBIC did not manage the Boxer scholarship funds. Instead, that role was fulfilled by the Sino-Belgian Commission of Instruction and Philanthropy (SBCIP, alias of the Boxer Indemnity Commission), based in Shanghai and established in 1929 following discussions in Nanjing. The SBCIP oversaw scholarship decisions and the selection of Chinese candidates, while the SBIC served as its executive branch in Brussels, implementing those decisions.³¹

Initially, the SBCIP planned to allocate an annual sum of 960,000 francs to the scholarship program beginning in 1929.³² However, the subsequent economic downturn and devaluation of the American dollar constricted resources, leading to a reduction in the number of scholarships awarded. The two tables that follow illustrate the scholarship distribution across schools from 1933 to 1937, categorized by scholarship type – full, half, and special (Table 2).³³ These figures are drawn from the four annual reports issued by the CSIB from 1933 to 1937.³⁴

30 “L’indemnité des Boxers à la Belgique,” *Vingtième Siècle*, June 4, 1926.

31 “Le Comité Interuniversitaire Sino-Belge,” *Le Soir*, August 6, 1930.

32 “Chine et Belgique,” *Le Soir*, December 27, 1930; Additional note: Around the same time of the first Boxer Indemnity scholarships some Chinese students received Jiangsu provincial scholarships. See: “Chuyang xuesheng diaocha lu” 出洋調查錄, *Shenbao*, August 24, 1929.

33 The special scholarship was only introduced after 1935 and was something “between a full and half scholarship” according to the CSIB report of 1936.

34 The reports are found at KADOC KU Leuven (BE/942855/2384/1800); additional note: Stefan Grauwels undertook the task of tracing scholarship awards, focusing on the academic years 1931–1932, 1933–1934, and 1934–1935. His efforts, however, were contingent on diverse sources, including a letter from Maurice Pieters, a 1932 scholarship list, and a single SBIC report from 1934. This assortment of references may result in inconsistencies when compared with the information presented in the tables, which derive solely from the SBIC reports. See Grauwels, Stephan. “Chinese Studenten in België, 1902–1939” (Master’s thesis, Ghent University, 1985), 56.

Table 1: The Distribution of Full Scholarships among Belgian Schools (1933–1937).

	Full scholarship			
	1933–1934	1934–1935	1935–1936	1936–1937
Free University of Brussels	4	2	6	10
University of Ghent	5	2	1	0
University of Liège	5	7	4	1
University of Louvain	5	5	5	6
Labor University of Charleroi	2	3	0	0
Other	11	12	10	13
Total	32	31	26	30

Table 2: The Distribution of Half and Special Scholarships among the Belgian Schools (1933–1937).

	Half scholarship				Special scholarship	
	1933–1934	1934–1935	1935–1936	1936–1937	1935–1936	1936–1937
Free University of Brussels	1	1	0	0	3	0
University of Ghent	2	4	0	0	2	0
University of Liège	0	2	1	0	1	5
University of Louvain	4	1	0	1	1	0
Labor University of Charleroi	4	1	0	0	0	1
Other	5	7	4	7	5	1
Total	16	16	5	8	12	7

Table 3: The Weighted Distribution of Scholarships (full, half and special) among the Belgian Schools (1933–1937).

	1931–1932 (Grauwels)	1933–1934	1934–1935	1935–1936	1936–1937	Total	Mean
Brussel	7	4.5	2.5	8.25	10	32.25	6.45
Ghent	9.5	6	4	2.5	0	22	4.4
Liège	5	5	8	5.25	4.75	28	5.6
Louvain	15	7	5.5	5.75	6.5	39.75	7.95
Charleroi	7.5	4	3.5	0	0.75	15.75	3.15
Other	20	13.5	15.5	15.75	17.25	82	16.4
Total	64	40	39	37.5	39.25	219.75	43.95

Table 3 aggregates the data from preceding tables to present a weighted total of scholarships awarded per school annually. In this computation, full scholarships are counted as one unit, half scholarships as 0.5 units, and special scholarships as

0.75 units. To provide a more comprehensive view of the scholarship distribution over time, I have included figures from 1931 to 1932 based on Grauwels' research, which applies a similar weighting methodology. This addition indicates that the decline in the number of scholarships can be traced back to at least 1933. While the weighted count stood at 64 for 1931–1932, it dropped to 40 or fewer from 1933 onward.

Another notable trend is the shift in scholarship distribution among the leading schools following the overall reduction. A 1930 opinion piece in *Le Peuple* noted that Charleroi ranked second in the number of scholarships, with nine, following the University of Louvain's sixteen.³⁵

In subsequent years, Charleroi saw a decrease in scholarships, with no full or half scholarships awarded after 1935. A similar trajectory was observed at the University of Ghent, which started with a weighted total of 9.5 scholarships but saw its funding diminish to none by the 1936–1937 academic year. Concurrently, allocations to other educational institutions (excluding the major universities) rose from 13.5 in the 1933–1934 period to 17.25 by 1936–1937. Meanwhile, the University of Brussels experienced an increase from 4.5 scholarships in 1933–1934 to ten full scholarships by 1936–1937. The Catholic University of Louvain and the University of Liège were the only institutions that maintained a relatively stable funding base after 1933.³⁶

By 1939, when the Second World War erupted, the Sino-Belgian Commission of Instruction and Philanthropy had awarded a total of 309 scholarships to Chinese students at various Belgian educational institutions.³⁷ After 1939, there is no record to suggest that the collaborative efforts between the Belgian and Chinese governments persisted.

³⁵ "Une autre forme de la guerre scolaire," *Le Peuple*, November 3, 1930.

³⁶ The reduction in scholarships for Ghent and Charleroi was concurrent with a decline in their student populations, which dwindled to five and two, respectively, by 1937 – contrastingly, the count for other major schools during the same period ranged from 12 to 16. Investigating the specific reasons behind this notable decrease at Ghent and Charleroi warrants further research.

³⁷ Grauwels, Stephan, "Chinese Studenten in België, 1902–1939" (Master's thesis, Ghent University, 1985), 55.

On the Topic of Pillarization

In the story of the Chinese students during the early interbellum period, both Grauwels and Soetens mention pillarization.³⁸ Pillarization designates a phenomenon mostly observed in the Netherlands and Belgium of the 19th and 20th centuries, in which a pillar is “an ideological and culturally integrated network of a number of domain-specific and domain-monopolistic organizations, among which is a political party.”³⁹ Belgium had three “pillars”: the liberals, the socialists, and the Catholics, which outbalanced each other in the Belgian national government of November 1920 (*Gouvernement Carton de Wiart*). Based on the political alignment of the key organizers at both schools, Grauwels and Soetens characterize the school in Charleroi as part of the socialist pillar/environment and the University of Louvain as part of the Catholic one, creating through this juxtaposition the impression that these schools were some kind of “forces battling for the hearts and minds of the young impressionable Chinese.”

Based on the primary sources at hand, it can be argued that the organization of both schools to take in Chinese students was embedded in rigidly defined networks tied to political power and that, to a certain degree, the education of Chinese students was even framed as an extension of the existing power struggle between these socio-political environments.

I shall exemplify this with an article that appeared several months after the inauguration of the Chinese Home in Charleroi, for which the required expenditure was not uncontested in public. During the council meeting of the Hainaut Province on July 20, 1923, there was a proposal from the Catholic-leaning local politician, Mr. Lambert, to cut off a sum of 100,000 francs from the UT and to allocate the sum to a Catholic school in the north of Charleroi (*Aumoniers de Charleroi*), arguing that the provincial government had already spent a lot of money on the Chinese students and that, to make that sum available, the university could suppress some courses and make the students who were not from the province pay 120 francs a year. A debate ensued between Lambert and Pastur, who defended the expenses for the UT

³⁸ Wang Qingyu brushes the topic of pillarization only briefly in the introduction of his work *Liubi xuesheng shi* and approaches it more narrowly. Specifically, he only speaks of the Catholic influence as a point of contention in Belgian education. The doctoral thesis of Zhiyuan Pan also delves into the concept of pillarization to contextualize the intercultural contacts between the comic strip artist Hergé (1907–1983) and the sculptor Zhang Chongren 張崇仁 (1907–1998) and the resulted creation of *Tintin and the Blue Lotus*, although the focus of the context is mostly the Catholic environment of 1920s and 1930s. See Pan, Zhiyuan. “How Tintin Met Tchang: The Sino-Belgian Catholic Network in the Early Twentieth Century” (Doctoral Dissertation, University of Cambridge, 2019).

³⁹ Hellemans, Staf, *Strijd Om de Moderniteit: Sociale Bewegingen En Verzuiling in Europa Sinds 1800*, (Louvain: Universitaire pers Leuven, 1990), 267.

while also making remarks on the spending choices of his Catholic colleague in the Namur province.

Regarding the issue of the Chinese students, one passage in the coverage on Pastur's arguments stands out:

[. . .] M. Lambert a critiqué la venue des Chinois à l'université. Mais il est typique de constater que l'Université catholique de Louvain fait en ce moment des démarches pour obtenir des élèves chinois. (rires) [. . .]

[Mr. Lambert criticized the arrival of the Chinese at the university yet it is no surprise to learn that the Catholic University of Louvain is making efforts right now to get Chinese students (laughter)]

This clarification elucidated that the debate had transcended mere provincial resource allocation, positioning the involvement of Chinese students in Belgium within a broader, more ideologically driven context. Mr. Lambert's proposal was overturned not by the persuasive force of Pastur's arguments but due to a political imbalance in the provincial council, where the alliance of Socialists and Liberals (49 votes) overwhelmingly defeated the Catholic faction (16 votes).⁴⁰

This incident was not the Franco-Belgian media's first encounter with such political divisions concerning Chinese students. Prior to the council meeting in March, the *Journal de Charleroi* had countered a piece from the Catholic-leaning *Libre Belgique* that covered a conference by R.P. Lebbe in La Louvière. The journal highlighted Lebbe's pointed statement: "Above all, it is necessary to remove from the Socialist University of Charleroi the 60 Chinese students who will later become Bolshevik leaders." It also called out the Catholic perspective's hypocrisy on "tolerance and respect for each other's convictions" and adherence to "school peace," referencing the power struggle among Catholics, liberals, and socialists in Belgian education.⁴¹

In 1930, the framing of Chinese students as an extension of this ideological battle was even more explicit in an opinion piece in *Le Peuple*, which criticized the disproportionate allocation of Boxer scholarships among Belgian educational institutions. The writer contested the rationale of basing distribution on the attendance records of the past five years, which they believed unduly favored the Catholic University of Louvain. They argued that the financial desperation caused by the Chinese revolution and general turmoil was exploited by the Catholics to "snatch up" needy students en masse, enticing them with "obscurely sourced" funds.⁴² While the claim that no Chinese scholarship students attended the University of

⁴⁰ "Conseil Provincial du Hainaut," *Journal de Charleroi*, July 21, 1923.

⁴¹ "Vive la Paix scolaire," *Journal de Charleroi*, March 20, 1923; "Une Conférence du R. P. Lebbe sur les missions en Chine," *Libre Belgique*, March, 6, 1923.

⁴² "Une autre forme de la guerre scolaire," *Le Peuple*, November 3, 1930.

Louvain before 1925 lacks empirical support, the opinion piece underscores the persistence of this narrative into the 1930s.

Reflecting on the educational landscape available to Chinese students during the early 1920s, it's apparent that two distinct socio-political clusters – arguably, at least for the first half of the decade – played a significant role. However, this observation prompts a further inquiry: Did these clusters also influence the internal relationships and dynamics among the Chinese students themselves? It's crucial to acknowledge the absence of comprehensive sources detailing the everyday lives and interactions among all Chinese students. While pillarization serves as an insightful theoretical framework for understanding local initiative developments, it falls short in fully dissecting and elucidating the networks and interactions of Chinese students. These individuals, having grown up outside the local socio-political spheres and essentially constituting a transient demographic in Belgium, cannot be fully understood through this lens alone. Identifying certain students with specific Belgian “pillars” – for instance, categorizing the Association of Chinese Students in Charleroi as part of the socialist domain and the Association of the Chinese Catholic Youth as an extension of the Catholic domain – risks oversimplifying their experiences. Such a perspective relegates these students to mere recipients of external influences, ignoring their active engagement with various ideas and worldviews they encountered, whether within or beyond Belgium's borders.

Nevertheless, this does not negate that some Chinese students might have leveraged these socio-political networks to pursue their objectives. For instance, in response to Belgian coverage of the 1925 Shanghai student shootings, both the Association of Chinese Students in Charleroi and the Association of the Chinese Catholic Youth issued letters to Francophone Belgian newspapers. While the former's letter appeared predominantly in socialist publications (*Drapeau Rouge*, *Journal de Charleroi*, *Gazette de Charleroi*) and the latter's in the Catholic-leaning *Libre Belgique*, both sought to counteract the xenophobic portrayal by the British press and highlight the economic struggles of workers, aiming to shift Belgian public opinion about their compatriots in China.

2 Major Sources

To comprehend the dataset's composition, we will examine the three principal sources upon which it is constructed. This analysis will entail an introduction to each source, encompassing a description of its characteristics and a critique of its constraints in the context of the data collection process. Ultimately, an evaluation concerning the cumulative influence of these primary sources on the dataset will be provided.

Wang Qingyu's Student List

A significant portion of the data collection effort is credited to Wang Qingyu for his comprehensive compilation in 2011, titled *Liubi xuesheng shi* (The History of the Chinese Studying in Belgium). Beyond offering a historical narrative spanning various cohorts of Chinese students in Belgium, his publication includes a biographical dictionary of these individuals.⁴³ Each entry in this dictionary delivers fundamental biographical details, outlines their educational journey, and occasionally notes their subsequent professional endeavors. The directory boasts over 1,094 entries, with detailed biographies for 300 of these individuals compiled in another segment of his work.⁴⁴

The primary resource for assembling this list was textual materials from the *Association Amicale Sino-Belge*, officially established by René Lou in 1929. This organization aimed to foster connections between Chinese graduates who returned from Belgium and Belgian residents in China. Among the materials are publications (one from 1933 and two from 1935) that catalog the Chinese students enrolled in Belgian educational institutions during that era, providing a foundation for identifying 900 individuals.⁴⁵

Given the publication's concentration on students predominantly from the 1930s, Wang Qingyu enriched the dataset with additional archival materials sourced from various archives in Taiwan and China. One key resource he referenced is the Overview of Overseas Chinese in Belgium (留比華人一覽), published by the Chinese Student Association around 1906 or 1907, along with several documents from the archives of the Belgium-based Chinese embassy in Taiwan, dating from 1910, 1938, 1941, 1944, and 1948.⁴⁶ His extensive effort to collect and analyze these sources continued until the end of 2011.

I converted the text into a digital format, from which we extracted biographical data using regular expressions and, in some cases, manual input. Additional information from the more detailed biographies was also incorporated into the dataset. Although this initial dataset comprising 1,094 individuals provides a robust foundation for research, it possesses inherent limitations. The comprehensiveness of the students' documentation varies, particularly for earlier periods, due to the uneven

43 Wang Qingyu 王慶餘, *Liubi xuesheng shi* 留比學生史 [History of Chinese Students in Belgium] (Taipei: Guangqi wenhua shiye, 2011), 387–536.

44 Wang Qingyu 王慶餘, *Liubi xuesheng shi* 留比學生史 [History of Chinese Students in Belgium] (Taipei: Guangqi wenhua shiye, 2011), 213–381.

45 The documents are at Abbey of Saint-André in Bruges (Lophem).

46 For the complete lists of his sources, see Wang Qingyu 王慶餘, *Liubi xuesheng shi* 留比學生史 [History of Chinese Students in Belgium] (Taipei: Guangqi wenhua shiye, 2011), 381–382.

coverage in the archival materials utilized by Wang Qingyu (refer to Tables 4 and 5). In some instances, Wang Qingyu could only specify the years of a student's arrival and departure from Belgium, aiding in mapping their educational timeline. The dataset includes these dates, with annotations added to elucidate the nature of the dating. The clarity regarding the place of origin presents another challenge; the biography does not consistently distinguish between a birthplace and an ancestral home. The dataset defaults to interpreting the location as the birthplace unless otherwise indicated. Additionally, the specifics of the students' academic pursuits are not always clear. While it may be documented that a student was enrolled in a university's faculty, the particular field of study is often not mentioned, nor is the level of degree (bachelor's, master's, doctorate). Although Wang Qingyu reliably notes the highest degree attained upon graduation, the records of prior educational endeavors are not consistently maintained.

Georges Lemaître's Index Cards (UCLouvain)

To fill in some gaps in the initial data, I relied on archival materials found at the Université Catholique de Louvain (Louvain-La-Neuve): a collection of index cards written by Georges Lemaître. In the late 1920s, Georges Lemaître ran the *Foyer Chinois Catholique*, and he recorded information about the Chinese students he encountered on these cards.

The Georges Lemaître Archives were generous to provide digital copies of the index cards. This collection comprises 181 images in total. After sorting out the duplicates and discarding the cards with irrelevant information, we retrieved data on 166 unique individuals, 140 of whom already existed in the initial dataset, while 26 were new additions.

Each index card contains at least one of the following details: Name in traditional Chinese characters, francophonic transliteration of the name, European given name, birth year, place of origin, place of education, starting academic year, graduation date/year, degree level (*candidature*, *licenciat*, *doctorat*), major/faculty, and very rarely, living address.

Although the collection is relatively small and not all cards are consistently rich and clear in their information, the source did help to identify the original French names of some places of education, and the bilingual nature of the cards was also useful to connect and identify people under different (non-Chinese) aliases.⁴⁷

⁴⁷ One of the challenges encountered during the translation of biographies into data is identifying the names of the schools accurately, especially regarding their French or Dutch variants used

Student Registration Cards (KU Leuven Archive)

Given that Wang Qingyu's biographies sometimes lack complete details on an individual's educational journey, the dataset was enriched with information derived from student registration cards at KU Leuven (Louvain). The university's central library archive maintains a collection of volumes prepared by the student administration, featuring photocopies of registration forms for students enrolled between 1919 and 1963.

Organized alphabetically by what was interpreted as the surname, each registration document provides the student's name, birth date, birthplace, registration address, faculty name, academic year, discipline, degree level, class year, and occasionally remarks on academic performance (e.g., did not attend exams, failed, passed with distinction, etc.).

Lacking a digital version of these volumes and a name index, I compiled a list of common Chinese surnames in various French transliterations and methodically searched the volumes to extract pertinent registration documents. This hands-on collection and subsequent transcription yielded data on 173 distinct individuals. Among these, 30 were newly identified for the dataset, while the information for the others served to confirm or update educational backgrounds and, in some instances, correct school affiliations.

This data collection presents several challenges. First, there is the difficulty of confirming the comprehensiveness of the gathered materials, as there is no external reference for cross-verification beyond Wang Qingyu's biographies. Additionally, the extent to which the archival materials have been preserved post-Second World War raises questions about the continuity and integrity of the records. Another concern pertains to the quality of information within the registration forms. Documentation is not consistent across all individuals, and the accuracy of the recorded data on some forms is uncertain. Typically, these forms were created at the start of the academic year and updated only if the student re-registered for the subsequent year, making it challenging to ascertain whether a student completed their studies or withdrew within a particular academic year. My approach was to include every legible record in the dataset and to denote the last recorded date as the end of that individual's studies.

in Belgium. Probably due to limitations imposed by available sources, Wang Qingyu occasionally provided only the Chinese transliteration of the school names, without reference to the original naming upon which the transliteration was based. In a few instances, he could only record the location of certain schools. Education records lacking identified schools were consequently excluded from the dataset.

While the registration forms and Georges Lemaître's index cards aim to enhance the records from Wang Qingyu's compilation, they introduce two significant limitations that affect the dataset's scope and utility. First, these additional sources primarily represent a specific demographic: students associated with the old University of Louvain post-1920s, a period already comprehensively documented in Wang's work and included in the dataset. Second, the dataset is dependent on information produced by institutions (such as the student administration, government entities like the embassy, *Foyer Catholique Chinois*, etc.), not the Chinese students themselves. It adopts the terminologies used by these institutions for their administrative purposes, constraining our research approach to the Chinese student population in Belgium, particularly in terms of social relationships and the nuances of daily life beyond the academic environment.

3 *Liubi Xuesheng*-Dataset

The LBXS-dataset documents the educational trajectories of individuals born in China or of Chinese descent who engaged in various forms of education (secondary, higher, vocational) in Belgium from 1904 through 1949. Presently, the dataset is divided into two distinct subsets: the first details the biographical data of the Chinese students, while the second chronicles the educational events associated with these individuals. The forthcoming section will outline the configuration of each subset, present a table enumerating the attributes observed within each, and discuss the extent of available documentation for specific attributes. Ultimately, a statistical overview of the dataset's entries will be provided.

Biographical Subset

This subset delineates an individual's profile through basic attributes such as name, birth, death, place of birth, and others. The dataset's present iteration comprises data on 1,150 unique individuals (referenced in Table 4). For each attribute listed in the table, there is an associated count of individuals with a recorded value for that attribute, the number of unique values possible, and the percentage of records within the subset that contain this information, rounded to the nearest whole number.

There are two key points to consider regarding this subset. First, the primary sources that inform this subset heavily dictate the systematic recording of certain attributes. All fundamental attributes, barring "Note on Date of Birth" and "Loca-

Table 4: Frequency table of the attributes observed in the biographical subset.

Fields	Number of records	Number of unique values	Relative frequency
Person H-ID	1150	1150	100.00
Naming			
Fullname	1150	1150	100.00
Alternative name(s)	957	955	83.22
Zi 字	29	29	2.52
Hao 號	8	8	0.70
Birth			
Date of birth	874	279	76.00
Birth place (textual)	945	374	82.17
Province of birth	1022	24	88.87
Country of birth	1060	6	92.17
Note on Date of birth	97	55	8.43
Geographical coordinates of the birth place	923	350	80.26
Death			
Date of death	255	214	22.17
Death place (textual)	8	6	0.70
Country of death	8	2	0.70
Other			
Gender	1093	2	95.04
Jiguan 籍貫	45	31	3.91
Ethnicity	8	4	0.70
Banner Type	6	3	0.52
Sources	–	–	–

Note: (1) Alternative name(s) include European aliases and Chinese names that cannot be identified as *zi* or *hao*; (2) “Note on Date of Birth” records different dates of birth from other sources. Recorded dates from university archives are always taken as the canonical date.

tion Coordinates,” were sourced from the biographies compiled by Wang Qingyu.⁴⁸ While the dataset does incorporate additional sources to supplement or correct data, it largely adheres to the structural template set by these biographies. This approach extends to the recording of attributes such as ethnicity, where Wang Qingyu only specifies an individual’s ethnicity if it is not Han-Chinese, which is presumably the default assumption for the subjects of his work. This methodology results in ambiguity regarding the absence of ethnic data – it could signify either Han-Chinese ethnicity or an unknown ethnicity as per the author. I retained the original values in the subset without adjustment, a decision mirrored by the low

⁴⁸ The coordinates come from the Modern China Geospatial Dataset (ENP-China).

percentage illustrated in Table 4. Second, the nature of the contributing sources influences the recorded values for certain fields. The dataset primarily draws from institutional documentation, such as that from government bodies and educational institutions, typically compiled during an individual's lifetime. Consequently, there is a notably low frequency of recorded death information. Only about 22% of the dataset's records include a date of death, and even fewer detail the location of death.

Education Subset

This subset categorizes an education event as a period during which an individual was enrolled in an educational institution, which could culminate in earning a degree (bachelor's, master's, or doctorate) in a specified discipline (e.g., history, law, electrical engineering). Of the 1,150 individuals featured in the biographical subset, 1,001 – approximately 87% – have at least one corresponding entry in the education subset, as indicated in Table 5.

Although the subset records similar information to that found in Wang Qingyu's biographies, there is a marked difference in the portrayal of educational events. Wang typically outlines the duration of a student's academic pursuits, noting both the commencement and conclusion of studies, whether they culminated in graduation or not, and frequently only refers to the highest degree attained. In contrast, this subset endeavors to delineate the various levels of academic achievement a student pursued at a given institution.

This approach has resulted in varied levels of documentation within the education subset. Due to the focused enhancement of records for students from the old University of Louvain post-1920, many entries that lacked detail in the biographies still retain a degree of incompleteness. This is reflected in Table 5, which shows relatively low frequencies of recorded information for degree level (+16.6%), completion or graduation date ($\pm 53.3\%$), and discipline (ranging between 58.7% and 40.6%). Further highlighting gaps in the documentation is the dating of educational records: approximately 50% have both a start and an end date, around 31% have only one of the dates, and 19% lack dates entirely.

The specific limitations inherent in the dataset substantially influence the methodologies available for analyzing Chinese student populations. To maintain transparency in our research, the final section of this paper will delineate the degree of documentation present within the "Five Schools" subset that is utilized for analysis. Additionally, we will discuss the extent to which the "Five Schools" subset is employed in various analytical components.

Table 5: Frequency table of the attributes observed in the education subset.

Fields	Number of records	Number of unique values	relative frequency
Person H-ID	1979	1001	100.00
country of education	1978	13	99.95
name place of education	1979	381	100.00
category discipline (highest level)	1161	11	58.67
category discipline (lowest level)	803	46	40.58
level of degree	328	3	16.57
starting year	1428	51	72.16
ending or graduation year	1173	51	53.27
comment	524	245	26.48
Thesis title	26	26	1.31

Note: (1) “Comment” notes whether the dates of entering or leaving Belgium are used to date the education event; (2) “level of degree” excludes engineering degrees.

General Statistical Description of the Dataset

The LBXS-dataset encompasses data on 1,150 distinct individuals, consisting of 1,044 males, 49 females, and 57 whose gender is unidentified. The vast majority were born in China (1,032), accompanied by a smaller contingent born in other nations – Belgium (19), Indonesia (4), France (3), Mauritius (1), Vietnam (1), with 90 unspecified. Analysis of birthdates across the biographical subset (76% documented) indicates that most individuals were born prior to the fall of the Qing dynasty. As depicted in Figure 1, the distribution of birth years manifests in two primary waves: an initial peak in 1885 with 26 births, and a more substantial peak in 1908 with 58 births. The intervening gap may be attributed to the First World War, which likely prevented a cohort of potential students, born during this period, from pursuing education in Belgium.

Within the education subset, which includes 1,001 individuals, education trajectories span 13 countries, predominantly in Belgium (1,415 instances), with China (393) and France (112) following. These educational instances are linked to 381 institutions, though distribution is not uniform, as shown in Figure 2. The institutions with the most records are the Catholic University of Louvain (393), Labor University of Charleroi (206), Free University of Brussels (182), University of Ghent (124), and University of Liège (80), cumulatively accounting for about half of the education subset.

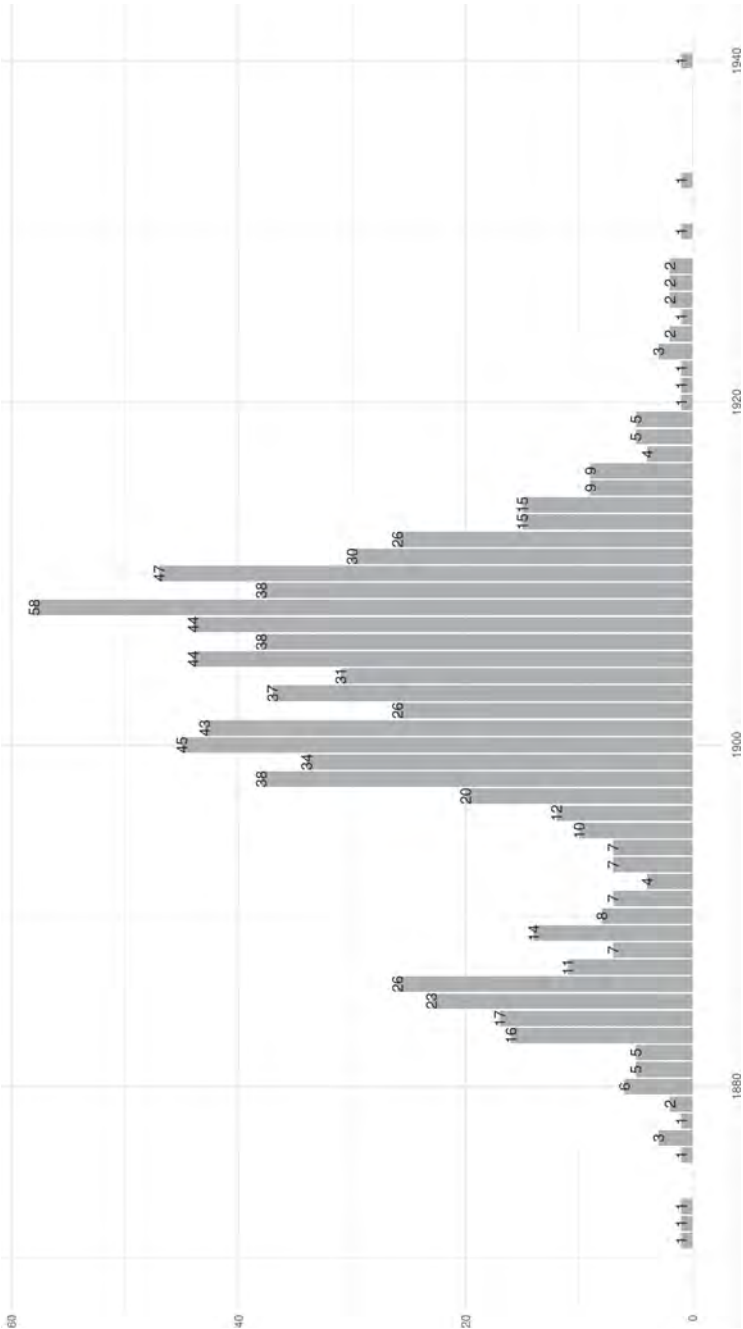


Figure 1: The distribution of birth years. The graph plots 76% of the person records.

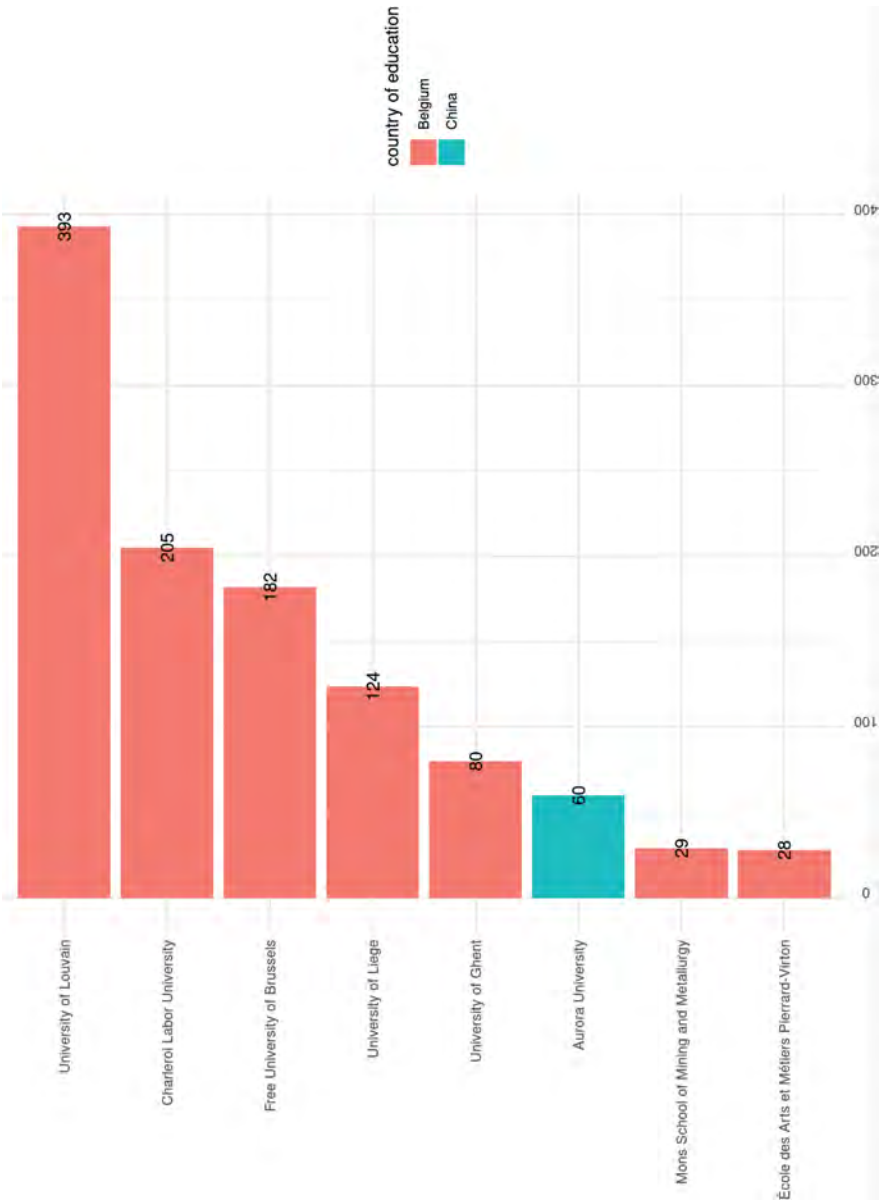


Figure 2: Distribution of education records across the top eight places of education.

As previously stated, the records pertaining to the nature of the educational trajectories are incomplete. There are 328 entries indicating a completed degree, roughly evenly divided among bachelor’s (99), master’s (99), and doctorate (89) degrees.

Regarding disciplines, there are 1,161 entries categorized into ten overarching fields, as plotted in Figure 3. Engineering sciences (418) and social sciences (351) constitute the majority of these records.

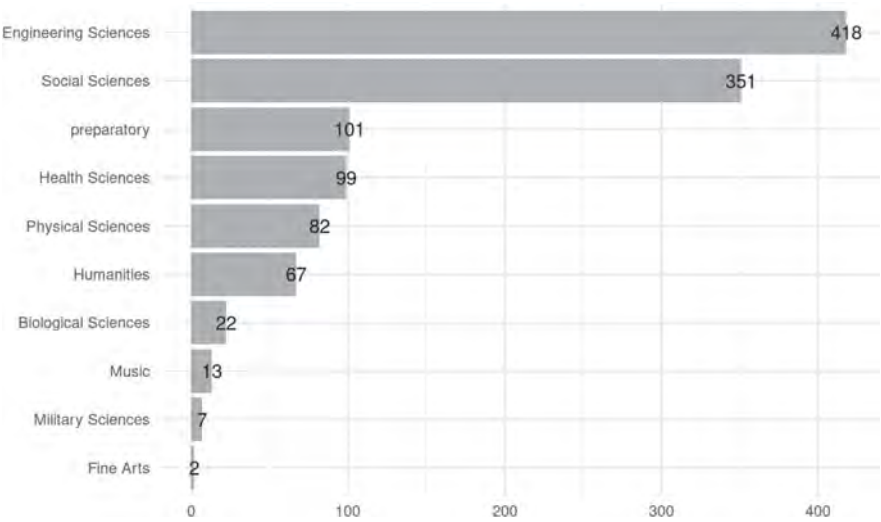


Figure 3: Distribution of education records by disciplines.

4 Exploratory Analysis

To examine the dataset’s capabilities, I will conduct a comparative study of Chinese students who attended the five prominent Belgian universities: the Labor University of Charleroi, Catholic University of Louvain, Free University of Brussels, University of Ghent, and University of Liège. My approach begins with establishing a general profile of the student populations at these institutions, examining the province of origin and age at initial registration, and comparing these profiles between the schools. Additionally, I will utilize the data on the earliest enrollment dates to monitor the inflow of Chinese students to Belgium, using this timeline to further elucidate broader trends within the student demographics.⁴⁹ The focus of this temporal analysis will be the interwar period (1919–1939), an era that saw a significantly larger influx of students to Belgium compared to the preceding two decades.

⁴⁹ This deviates from the previous studies of Soetens and Grauwels as their works build on the statistical reports that only count students present per year, with no additional context of one’s studies.

The Five-Schools Subset

The subset selected for the analysis amounts to 985 records. They connect to 726 unique individuals, with an average of 1.36 records per person.⁵⁰

Table 6 details the count and proportion of education and individual records for each school and juxtaposes these with the corresponding figures for the entire dataset. This comparison reveals that most school subsets exhibit notably fewer missing values for certain attributes compared to the dataset at large. However, discrepancies in the documentation of attributes are evident. This variation can be accounted for in two primary ways: First, there's a documented skew in data collection, with the subset from Louvain showing the most comprehensive documentation, boasting rates above 86% for starting and ending dates and disciplines. Second, the inconsistent occurrence of degree level data emphasizes that the dataset's framework – categorizing education solely in terms of bachelor's, master's, and doctorates – does not universally apply, particularly not to technical schools like the Labor University of Charleroi, which conferred engineering degrees, or to engineering programs at other institutions within the dataset. Due to these documentation shortcomings in the subsets pertaining to smaller schools, each graph constructed from the dataset reflects only a segment of the data rather than a complete overview.

Table 6: Comparative analysis of record completeness for specific attributes across the five educational institutions and the entire dataset.

	Louvain	Charleroi	Brussels	Liege	Ghent	Whole dataset
Number of education records	393	206	182	124	80	1979
Number of unique individuals	244	174	154	118	80	1001
% Discipline (high level)	92.11	84.47	82.42	87.10	88.75	87.82
% Discipline (lower level)	54.96	64.08	59.89	73.39	71.25	61.42
% Degree level	60.56	3.88	17.03	6.45	2.50	29.14
% starting year	91.60	90.78	71.43	82.26	86.25	86.09
% ending/graduation year	87.79	88.35	66.48	73.39	83.75	81.93

⁵⁰ This smaller subset comprises individuals who attended two major schools at different times and may have been counted twice in graphs for comparing school groups. The number of these individuals, however, is so low that it cannot affect the analysis subset.

Overall Age at Earliest Enrollment (1919–1939)

What was the typical age of Chinese students when they first enrolled at one of the five schools during the interwar period (1919–1939)? Utilizing the earliest starting year recorded for each education entry, we find that the average age hovers around 22. This “overall age” suggests that students might have either commenced their advanced education later in life or undertaken prior studies elsewhere. The current state of the dataset does not allow for a precise differentiation between these two contributing factors. While Wang Qingyu’s biographies provide insights into educational pursuits within and beyond Belgium, the completeness of this information for each individual remains uncertain, especially since the dataset systematically records education within Belgium and may not encompass entire educational trajectories.

Differences emerge when examining the average age across the student populations of the five schools. Charleroi and Ghent’s students were generally younger, averaging 22.1 and 22.5 years old, respectively, while Liège and Brussels students were older, at 23.7 and 23.8 years on average. Louvain’s cohort approximated the overall average age at 22.8 years. This variation might imply that Liège and Brussels attracted individuals who sought education abroad later in life compared to Charleroi and Ghent.

Nevertheless, direct comparisons of age ranges between school populations may be misleading, as the average age does not account for the distribution at each institution. Figure 4 graphically presents the age range at first registration, revealing two limitations: Firstly, it shows that the average age for Liège and Louvain is influenced by outliers. When considering the median age, the disparity between the schools narrows, with Charleroi, Ghent, and Louvain clustering around 22, while Liège and Brussels students are near 22.5 and 23, respectively. This recalibration alters the initial “age ranking,” placing Brussels and Liège at the higher end, yet without distinctively younger populations. Secondly, except for Louvain and Charleroi, the distributions for the remaining schools are relatively flat, indicating that their average age serves more as a midpoint of a broad range rather than a reflection of the most common student age.

It is, therefore, more accurate to conclude that Liège, Brussels, and Ghent hosted a wider variety of ages, as opposed to a homogeneous age profile. This diversity complicates any effort to analyze how age distribution remained consistent over time, as there isn’t a singular “norm” against which to measure each group. This complexity is further compounded by inconsistent enrollment rates across the schools, as demonstrated in Figure 7.

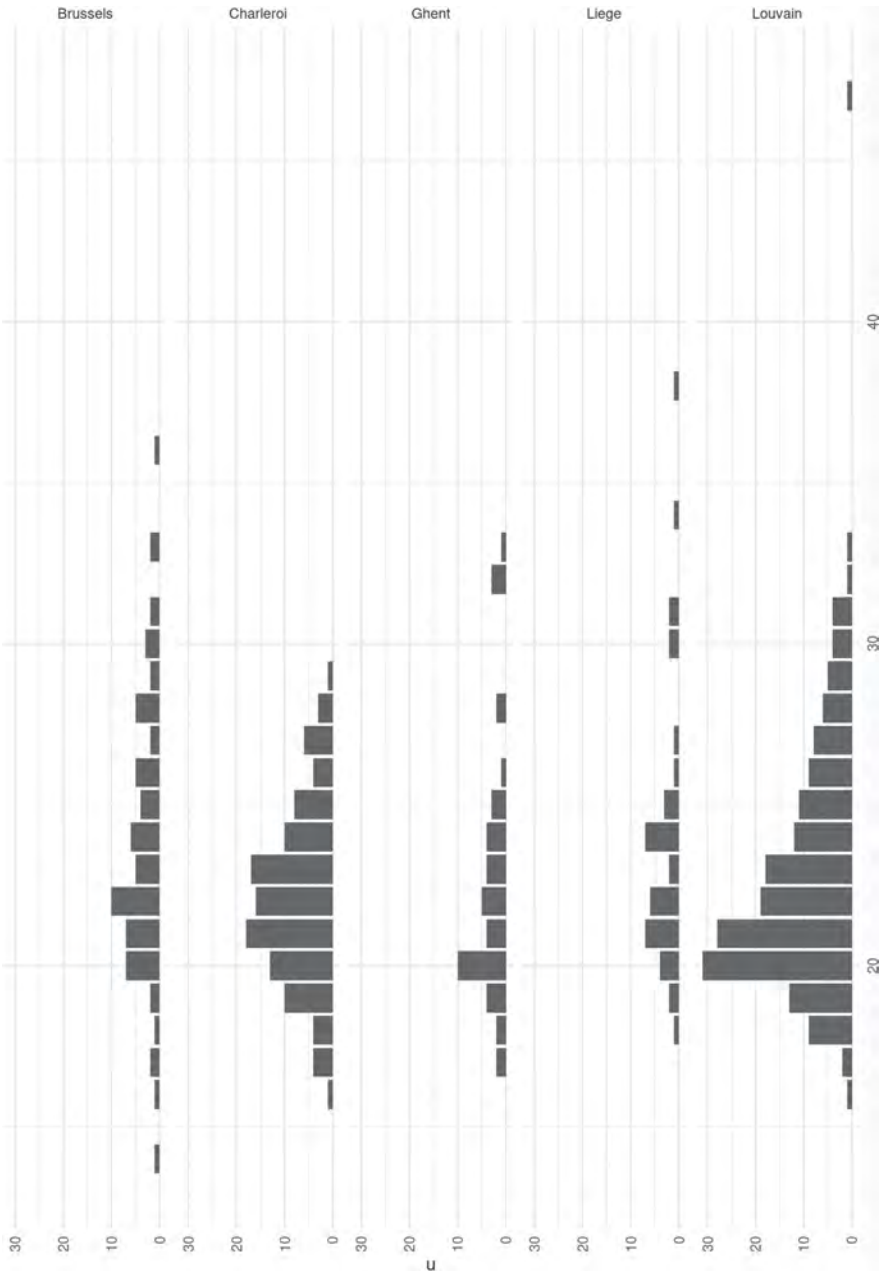


Figure 4: Age distribution of students at first registration (1919–1939), with labels indicating the count of students represented.

General Patterns in Regions of Birth

Our previous statistical analysis establishes that the bulk of Chinese students hail from China. Figure 5 distills the demographic composition of each school's student body according to their province of origin. The accompanying bar charts illustrate the geographic dispersal of students by school and summarize the collective distribution across all provinces.

The concluding graph underscores the disproportionate representation of regions. Jiangsu emerges as the predominant source of students, constituting 22.6% of the total student body, with other coastal regions like Zhejiang (11%), Guangdong (9.7%), and Fujian (7.1%), as well as inland regions such as Hunan (9.8%), Sichuan (9.7%), and Hubei (8.7%) trailing behind.

Nonetheless, this overall regional distribution exhibits variations when parsed by individual schools. At Louvain and Ghent, the representation roughly mirrors the general pattern, with a majority hailing from Jiangsu (28.5% at Louvain and 36.7% at Ghent) and Zhejiang ranking second (15.8% at Louvain and 14% at Ghent). Conversely, in Brussels and Liège, students from Jiangsu do not hold the same dominance. Hubei natives comprise 17.5% of Brussels' student population, closely following Jiangsu's 24%, whereas in Liège, the Hubei cohort forms the largest group at 20.8%, nearly on par with Jiangsu's 18.2%. The student body at the Labor University of Charleroi presents an even more distinct distribution, with students from Jiangsu (10%) notably outnumbered by those from Sichuan (18.5%), Guangdong (17.3%), Henan (13.7%), and Hunan (11.9%).

To glean a clearer "regional profile" for the schools, we have visualized the students' birthplaces on a map. Figure 6 maps out the geographic spread of these origins, with the initial five panels dedicated to individual school subsets and the final panel providing a cumulative overview.

Analyzing the final panel of Figure 6, the overarching geographical distribution – encompassing 278 locations tied to 615 individuals – predominantly concentrates around Sichuan, Hunan/Hubei, Jiangsu/Zhejiang, Guangdong, and Hebei. Despite a "cross-shaped" dispersal, there's a notable aggregation of students in the coastal cities/counties, with inland urban centers less represented. The birthplaces yielding the highest student numbers include Minhou (4%), Shanghai (3.8%), Wuxi (2.7%), Changsha (2.6%), Yixing (2.4%), Wuxian (2.4%), Guangzhou (2.2%), Wuhan, and Beijing (both around 2%), totaling between 27 and 10 students each.

The student populations of the five schools fall into two broad categories of geographical distribution: "Coastal" and "Decentralized." The University of Louvain, Brussels, and Ghent predominantly attracted students from coastal regions. Specif-

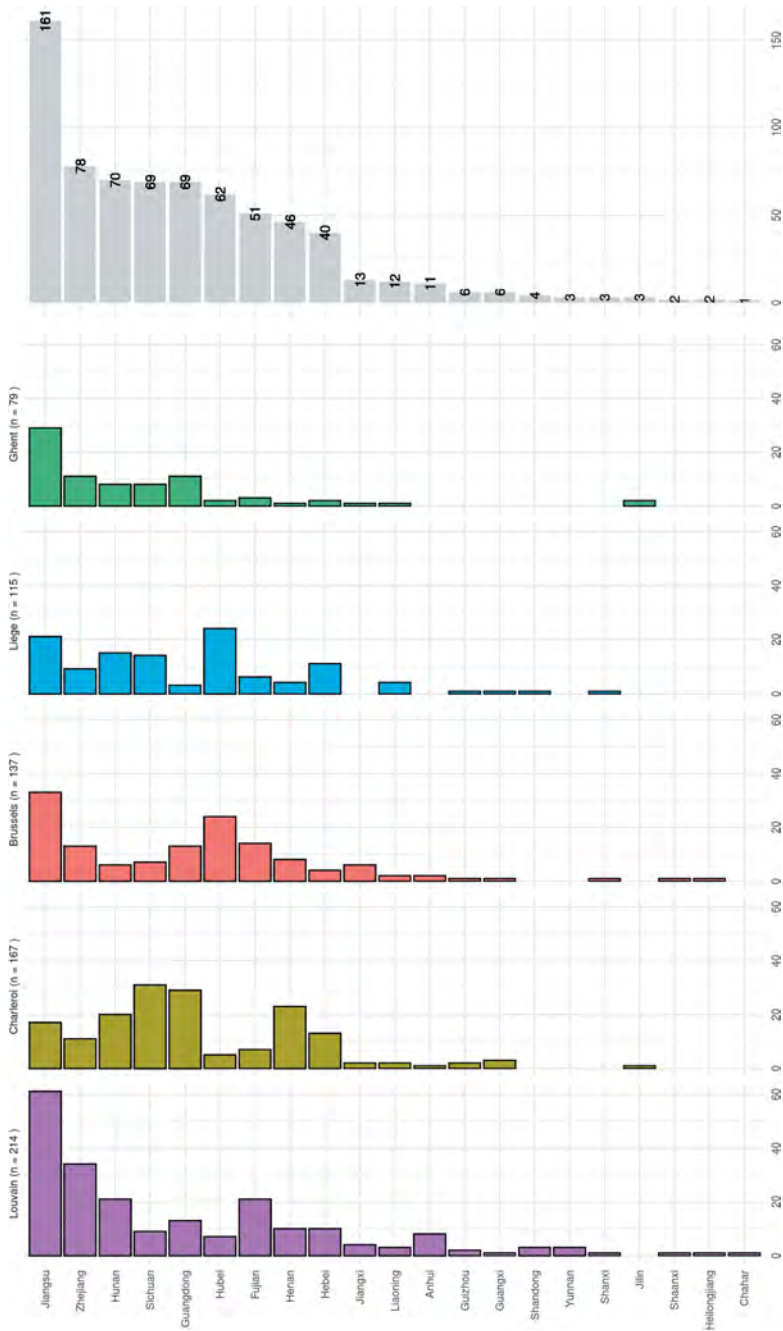


Figure 5: Absolute frequency of students by place of origin across the five institutions. The total number of students represented is detailed in the headings of each graph.

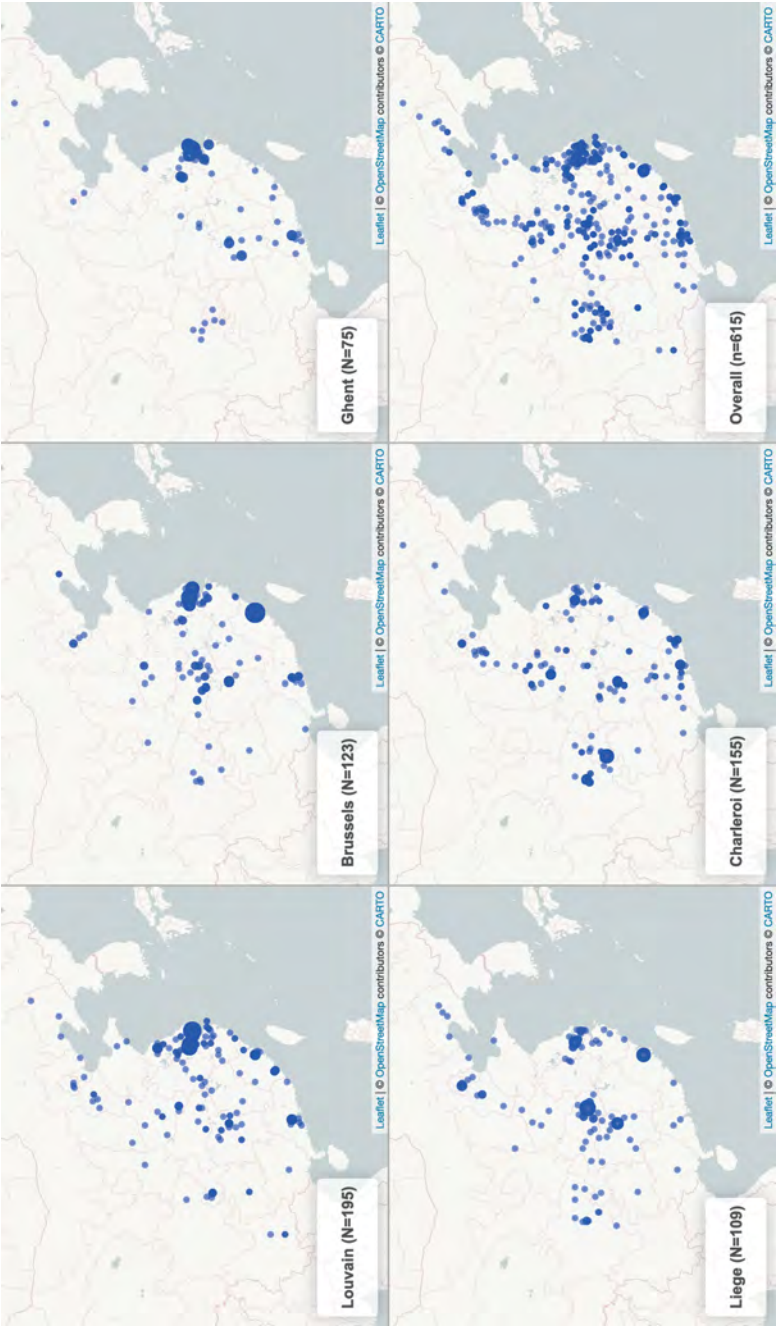


Figure 6: Distribution of birth locations of the various student populations (the size of the dots represents the relative frequency of individuals in the school subset. The number in the legend refers to the total individuals plotted on the map.).

ically, Louvain's student body featured a significant portion from Shanghai (7.1%; $n=14$) and Yixing (5.6%; $n=11$), Brussels saw a concentration from Minhou (8.1%, $n=10$) and Wuxian (5.6%, $n=7$), and Ghent's students predominantly hailed from Songjiang and Baoshan, both near Shanghai (5.3%, $n=4$). Conversely, Charleroi and Liège exhibited a more decentralized pattern. Liège's population notably included students from central-eastern locales like Wuhan (5.5%, $n=6$) and Minhou (4.6%, $n=5$), whereas Charleroi's was even more dispersed, with clusters in Jiangjin (4.5%, $n=7$), Wuxi, and Minhou (both 3.2%; $n=5$).

Despite similarities in geographical distribution shapes, the “regional profiles” of the schools were markedly diverse, drawing students from distinct locations. Among students attending exclusively one school, the overlap of birth locations across at least two institutions is just 28%. Only five locations – Beijing, Changsha, Guangzhou, Hangzhou, and Wuxi – were common across all five schools' distributions. The greatest overlap occurred between Louvain and Liège, sharing 31 common birthplaces, while Ghent and Liège had the fewest in common ($n=17$).

Temporal Distribution of Students at Earliest Enrollment

To understand how the regional distribution among the five schools materialized, it's crucial to first construct a timeline for both the schools and the provinces. This timeline will utilize the earliest enrollment dates in Belgium to identify general trends and contextualize the geographical distribution.

Figure 7 delineates the shifts in enrollment rates across the schools. Prior to 1914, Liège, Brussels, and Ghent emerged as key destinations for student enrollment, with median rates of 7.5, 3, and 2.5 students, respectively. However, post-First World War, the Labor University of Charleroi saw a significant surge, peaking at over 45 students in 1921 – surpassing the combined totals of all other institutions. This number sharply declined thereafter, stabilizing at a median of three students annually throughout the interwar period. The University of Louvain then ascended to prominence with rising enrollment figures beginning in the mid-1920s (9.5 students per year). With the establishment of the Sino-Belgian Boxer Indemnity Fund approaching the 1930s, all five schools experienced an uptick in new student enrollments, reaching a plateau post-mid-1930s. Following the Second World War, Charleroi and Ghent ceased enrolling students, while the remaining institutions continued to admit Chinese students at significantly reduced frequencies into the 1950s.

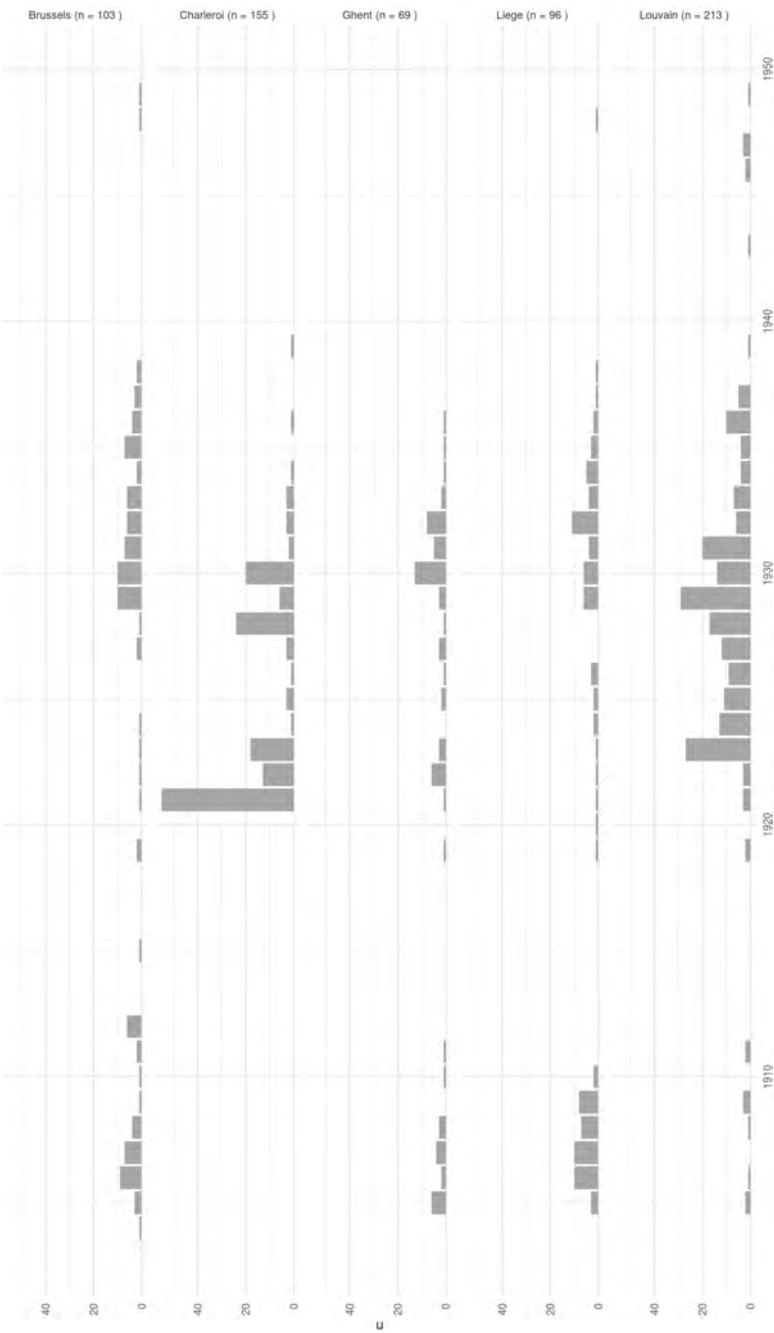


Figure 7: Temporal distribution of new incoming students per school.

Reorganizing the data points by the eight major regions (Sichuan, Guangdong, Jiangsu, Hebei, Henan, Zhejiang, Hubei, Hunan, Fujian) reveals clear trends (Figure 8). Before 1910, Hubei and Jiangsu were the leading sources of students in Belgium. However, post-First World War, these areas were overtaken by Sichuan (14 students), Guangdong (18 students), and Henan and Hunan (each with 8 students), experiencing a notable rise in 1921. The influx from these regions quickly dwindled in subsequent years, although Hunan saw a peak of 17 students in 1923 before declining towards the late 1920s. Concurrently, the number of Jiangsu students steadily increased through the 1930s. By the 1930s, Zhejiang, Henan, Hebei, Hubei, and Fujian also contributed more students, though not as significantly as Jiangsu. The count of Guangdong students rose after the 1930s, yet did not surpass the 1921 peak.

Disaggregating the timelines by schools and major regions (as depicted in Figure 9), a pre-1910s influx of Hubei students is evident, particularly within the context of Brussels and Liege universities, while the prewar influx of Jiangsu students is largely associated with the University of Ghent. The 1921 peak and subsequent decline in students from Sichuan, Guangdong, Hunan, and Henan are most pronounced in the Charleroi Labor University's enrollment history. The sustained increase of Jiangsu students post-1925 is primarily linked to the University of Louvain's enrollment trends. Similarly, the rise in Zhejiang and Fujian students around 1930 is predominantly observed at the same institution.

The decline in enrollment at the Charleroi Labor University and the subsequent decrease in its student population may be attributed to changes in the financial support provided to students by the institution. At the outset of the 1920s, Chinese students attending the school benefited from an average monthly allowance of 250–300 francs and/or accommodation in a cooperative designed to reduce living expenses. This arrangement rendered the program more affordable and accessible to work-study students from less affluent regions such as Sichuan and Guangdong, who were introduced to the school via their connections with the Sino-French Institute in Lyon. While specific socio-economic data for all Charleroi students during the 1920s and 1930s is lacking, Figure 10 shows a noticeable shift toward students predominantly from coastal regions – generally regarded as more affluent. This suggests that post-1925, these supportive measures were either discontinued or proved insufficient. The emerging expectation was for students to be financially independent in order to stay at the school.

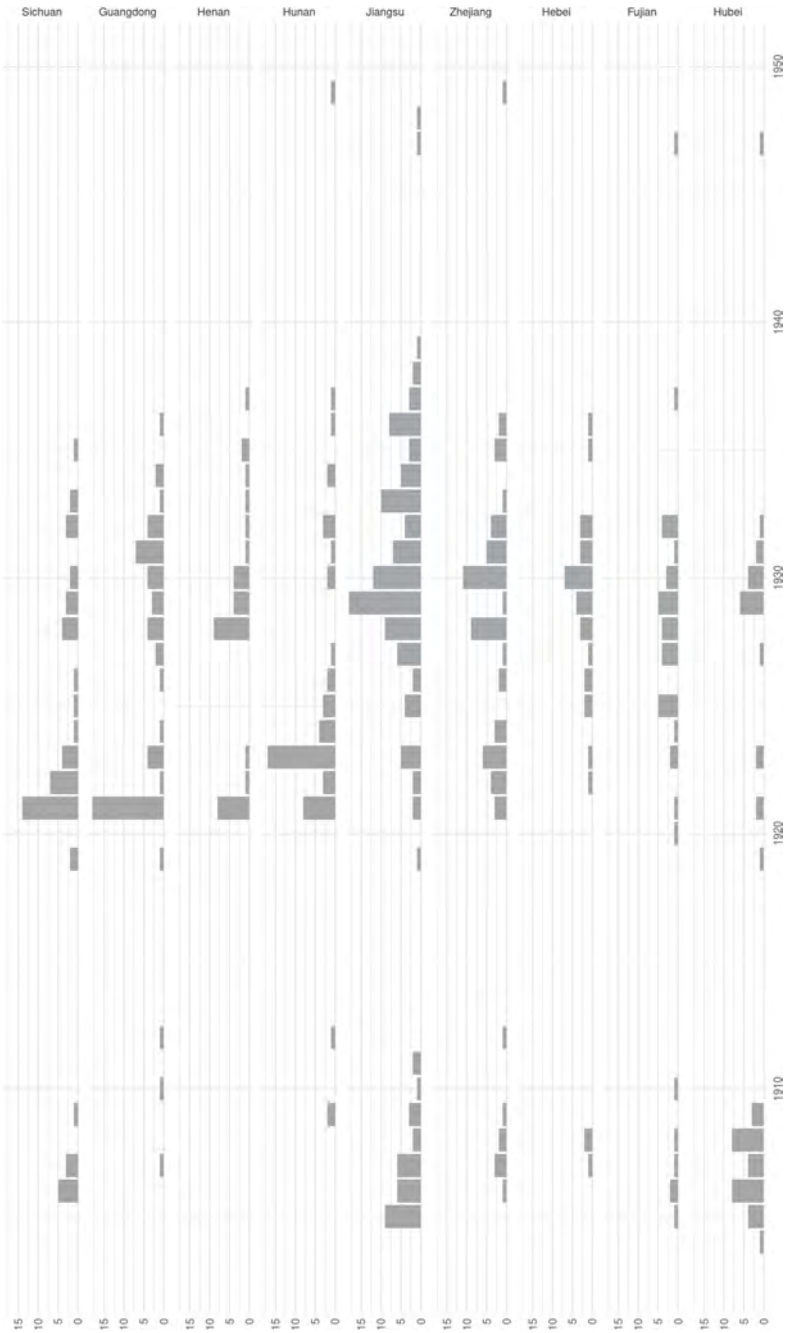


Figure 8: Temporal distribution of new incoming students per major region.

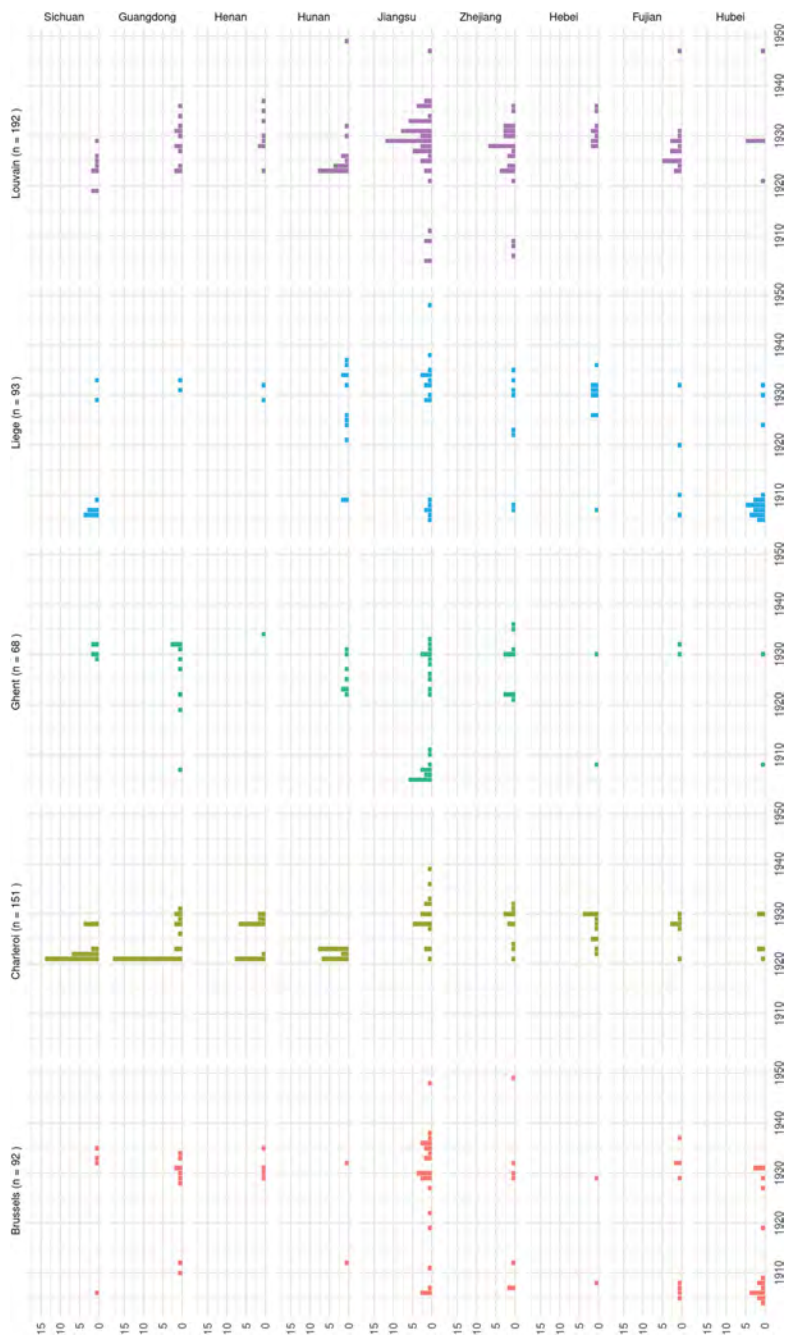


Figure 9: Temporal distribution of new incoming students per school and major region.

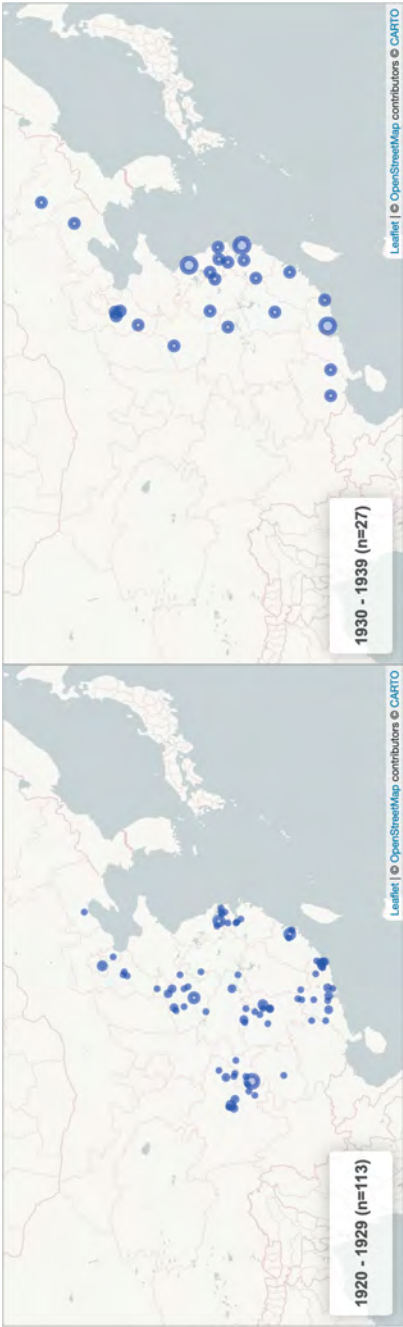


Figure 10: The shift in geographical distribution associated with the Labor University of Charleoi.

Conclusion

This study has shed light on the experiences of over a thousand Chinese individuals who pursued education in Belgium between 1904 and 1939. By focusing on the institutional level, specifically examining the University of Ghent, Catholic University of Louvain, Free University of Brussels, University of Liège, and Labor University of Charleroi, and utilizing the LBXS-dataset, we have gained valuable insights into the demographic composition and historical trends of Chinese student migration during the interwar period.

Our analysis revealed three key findings. Firstly, we found that the majority of Chinese students embarked on their educational journeys at a relatively advanced age, with an average enrollment age of 22.8 years. Notably, while this trend was consistent across most institutions, there was greater variability in age distribution among the student populations of Liège, Brussels, and Ghent compared to those of Louvain and Charleroi.

Secondly, our investigation into the origins of these students unveiled a diverse pattern across the five schools. Louvain, Brussels, and Ghent emerged as magnets for students from coastal areas, while the geographic distributions for Liège and Charleroi appeared more decentralized. This variation in student origins underscores the complex interplay of factors shaping educational migration patterns during this period.

Lastly, correlating the regional profiles of the school populations with the timing of Chinese student admissions revealed discernible waves of students from specific provinces aligning with enrollments at particular institutions. For instance, the significant presence of Jiangsu students at Louvain highlights the localized nature of student migration trends and the influence of institutional dynamics on regional recruitment patterns. Moreover, our temporal analysis uncovered a pronounced “regional shift” within the student body at the Labor University of Charleroi, suggesting a potential reduction in institutional support over time.

While our study has provided valuable insights, it is essential to acknowledge its limitations. For instance, the dataset may not capture the full extent of educational trajectories or socio-economic backgrounds of individual students. Additionally, the reliance on transliterated school names poses challenges in accurately identifying institutions. Future research endeavors should aim to address these limitations and further explore the social dimensions of overseas education in Belgium.

In conclusion, this study offers a detailed examination of the Chinese student community in Belgium, highlighting the nuanced interplay of local and global dynamics in shaping educational migration patterns. By contextualizing national trends within specific institutions and time periods, we contribute to a richer understanding of historical ties between China and Belgium and open new avenues for

inquiry into the social and cultural dimensions of international education. Moving forward, the LBXS-dataset holds promise as a valuable resource for comparative studies across European countries in the early twentieth century and beyond.

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Sun Huei-min

Unleashing the Power of Knowledge and Networks: Raising Capital for Publishing Companies in Shanghai (1928–1937)

1 Introduction

Most studies on the history of publishing in modern China focus on publications, content producers, and publishing technologies; but little attention has been paid to the investors who owned and contributed capital to create the publishing industry in China. The initial investors of the Commercial Press (Shangwu yinshuguan, 商務印書館), one of the earliest modern printing houses and later the largest publishing company in Republican China, have caught the interest of some historians. These researchers were mainly interested in who the founders were, how much each of them invested, what kinds of social relations connected them, how they cooperated with Japanese investors, and how they transformed the organization from a “traditional” partnership to a “modern” stockholding company.¹ In stark contrast, thousands of Chinese shareholders who recreated the major publishing company after it had broken up with Japanese investors in 1914 hardly attracted the attention of researchers.

Scarcity of information makes the study of investors difficult. Chinese businesspeople tended to keep investors’ information as business secrets. Until the nationalist government promulgated the *Company Act* (Gongsifa 公司法) and the *Regulations on Company Registration* (Gongsi denji guize 公司登記規則) in 1931, the registered companies did not disclose the personal information of their share-

¹ Wang Jiarong 汪家熔, *Shangwu yinshuguan shi ji qita – Wang Jiarong chubanshi yanjiu wenji* 商務印書館史及其他 – 汪家熔出版史研究文集 [The History of the Commercial Press and Others – A Collection of Research Papers on Publishing History by Wang Jiarong] (Beijing: Zhongguo shuji chubanshe, 1998), 7–19. Yang Yang 楊揚, *Shangwu yinshuguan: minjian chubanye de xingshuai* 商務印書館：民間出版業的興衰 [The Commercial Press: The Rise and Fall of the Private Publishing Industry] (Shanghai: Shanghai jiaoyu chubanshe, 2000), 6–10. Tarumoto Teruo 樽本照雄, *Shoki shōmu yinshokan kenkyū zōhoban* 初期商務印書館研究·增補版 [A Study of the Early-stage Commercial Press, Augmented Edition] (Shiga: Shinmatsu shōsetsu kenkyūkai, 2004), 15–26, 146–391. Fan Jun 范軍 and He Guomei 何國梅, *Shangwu yinshuguan qiye zhidu yanjiu* 商務印書館企業制度研究 [A Study on the Corporate System of the Commercial Press] (Wuhan: Huazhong shifan daxue chubanshe, 2014), 25–41.

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holders to the government. A large bulk of shareholder registers is now preserved in the documents of the Ministry of Industry (Shiyebu 實業部), a collection of the Archives of the Institute of Modern History, Academia Sinica, Taiwan (hereafter IMH Archives). Although this collection has provided open access online for decades, it remains underutilized until now.²

The major problem researchers encountered there was that they could extract abundant data from shareholder registers but still get little information. The shareholder registers recorded nothing more than the names of the investors and/or their agents, current contact addresses, along with the number of shares and the amount of money invested. Therefore, former researchers could do little besides listing the shareholders' names, the amount of investment, and the percentage of shareholding. Things have changed in recent years. Because of the rapid growth of full-text databases and the popularization of analyzing tools such as historical geographical information systems and social network analysis, it is now possible to excavate further information and get insights with the clues provided by the shareholder registers.

There is not an independent category of publishers in the above-mentioned online resource, so the researchers must pick the publishers out in various cultural enterprises by themselves. This chapter focuses on book publishers in Shanghai. None of them adopted the term *chuban* (出版), the Chinese translation of publishing, in the names of companies as many publishers in Taiwan do nowadays. Even in the statements of business scope, the publishers did not necessarily mention *chuban*. Many book publishers named themselves *Shuju* (書局) or *Shudian* (書店), which literally meant "bookstore." Some of them included the term *tushu* (圖書) in the names of the companies. In identifying the book publishers, I excluded the companies which printed or sold books only but included those which concentrated on book editing. Based on such criteria, I found 23 publishing companies which were established in Shanghai, in operation during 1928–1937, and with shareholder registers. Moreover, Chang Chih-cheng (張志誠) happened to find a copy of the shareholder register of the Commercial Press made in 1937 in the documents of the Ministry of Agriculture and Woods (Nonglinbu 農林部), which is also a collection in the IMH Archives. These registers constitute the core materials of this paper (See Table 1).

Publishing is an industry closely related to intellectuals. It is well known that major publishing companies in early twentieth century Shanghai were managed by intellectuals. One of the intellectual managers was Zhang Yuanji (張元濟, 1867–1959), who obtained the highest degree of civil examination but led the Commer-

2 The website address is <https://archivesonline.mh.sinica.edu.tw/>.

Table 1: List of the sample companies.

Company name	Registered capital	Number of accounts of shareholders	Average investment of each account	Investment from Shanghai	Source ID*	Page
大業圖書股份有限公司	5,000	7	714.29	100.00%	17-23-01-72-09-045	24
樂華圖書股份有限公司	10,000	15	666.67	84.00%	17-23-01-72-09-049	44
法學書局股份有限公司	10,000	82	121.95	94.00%	17-23-01-72-09-015	24-28
天馬書店股份有限公司	10,000	46	217.39	65.10%	17-23-01-72-09-029	25-27
黎明書局股份有限公司	13,400	141	95.04	66.04%	17-23-01-72-09-017	52-57
晨華書局股份有限公司	15,000	62	241.94	79.33%	17-23-01-72-09-010	23-25
大江書舖股份有限公司	15,000	56	267.86	49.00%	17-23-01-72-09-042	42-44
同文圖書印刷股份有限公司	16,000	44	363.64	45.00%	17-23-01-72-09-090	24-26
三民圖書有限公司	20,000	2	10,000.00	100.00%	17-23-01-72-09-047	20
新中國書局股份有限公司	25,000	35	714.29	90.20%	17-23-01-72-09-019	44-46
華僑圖書印刷股份有限公司	30,000	55	545.45	36.83%	17-23-01-72-09-089	30-32
新生命書局股份有限公司	40,000	18	2,222.22	42.75%	17-23-01-72-09-005	19
佛學書局股份有限公司	50,000	54	925.93	80.40%	18-23-01-72-09-045	75-77
兒童書局股份有限公司	50,000	366	136.61	61.56%	17-23-01-72-09-009	53-73
文華美術圖書印刷股份有限公司	60,000	89	674.16	84.17%	17-23-01-72-09-087	103-119
良友圖書股份有限公司	73,150	727	100.62	15.11%	17-23-01-72-09-088	42-80
中國科學圖書儀器股份有限公司	100,000	98	1,020.41	80.30%	17-23-01-72-09-051	31-35
伊文思書局股份有限公司	100,000	22	4,545.45	73.40%	17-23-01-72-09-026	22
現代書局股份有限公司	100,000	76	1,315.79	89.80%	17-23-01-72-09-001	31-35
新亞書店股份有限公司	200,000	78	2,564.10	26.70%	18-23-01-72-09-102	138-142
開明書店股份有限公司	300,000	355	845.07	48.75%	17-23-01-72-09-097	170-192
神州國光社股份有限公司	400,000	482	829.88	16.33%	17-23-01-72-09-038	24-58

(continued)

Table 1 (continued)

Company name	Registered capital	Number of accounts of shareholders	Average investment of each account	Investment from Shanghai	Source ID*	Page
中華書局股份有限公司	4,000,000	1,974	2,026.34	N/A	17-23-01-72-09-100	96-198
商務印書館股份有限公司	5,000,000	2,552	1,959.25	59.84%	20-03-009-04	
Median	45,000	69	714.29	66.04%		

* The call number of the document in the archives of the Institute of Modern History, Academia Sinica.

cial Press for a long time and has been highly regarded by researchers.³ Moreover, the industrial mode of book production stimulated publishers' demand for content producers. Besides paying fees or royalties to outside authors, major publishers in early twentieth century Shanghai recruited and organized a large number of editing staff for the production of manuscripts. Although the works and lives of the staff editors were industrialized, Robert Culp emphasized that the staff editors, who were mostly "petty intellectuals," enjoyed more freedom and higher payment than their colleagues in the printing department.⁴ Beyond discussing how the intellectuals lived up to their cultural and political ideals in the publishing industry, Christopher Rea and his collaborators demonstrated that Chinese intellectuals in the early twentieth century embraced entrepreneurship and participated actively in various cultural businesses, including publishing.⁵ Nonetheless, to what extent did the intellectuals invest their own money in the publishing industry? How did the intellectual shareholders interact with other investors? Both of these questions have so far remained unanswered.

In the opening of his pioneering study on the Commercial Press, Jean-Pierre Drège pointed out that the integration of content production, printing, and distribution was the most significant characteristic of modern China's publishing industry.⁶ Such a mode of operation made the publishing industry in Shanghai capital-intensive and thus facilitated the adoption of a joint-stock limited liability system.⁷ In fact, this all-in-one approach became obsolete in the 1930s. Major publishers such as the Commercial Press and the World Book Company (Shijie shuju, 世界書局) downsized or even abolished their editing departments.⁸ On the other hand, many newly established publishing companies, which were promoted by intellectuals,

3 Wang Shaozeng 王紹曾, *Jindai chubanjia Zhang Yuanji* 近代出版家張元濟 [Modern Publisher Zhang Yuanji] (Beijing: Shangwu yinshuguan, 1984). Manying Ip, *The Life and Times of Zhang Yuanji, 1867–1959* (Beijing: Shangwu yinshuguan, 1985), 151–216. Wang Jiarong 汪家熔, *Zhang Yuanji* 張元濟 [Zhang Yuanji] (Shanghai: Shanghai cishu chubanshe, 2012); Lu Renlong 盧人龍, *Zhongguo chubanjia Zhang Yuanji* 中國出版家張元濟 [Chinese Publisher Zhang Yuanji] (Beijing: Renmin chubanshe, 2017).

4 Robert Culp, *The Power of Print in Modern China, Intellectuals and Industrial Publishing from the End of Empire to Maoist State Socialism* (New York: Columbia University Press, 2019), 27–88.

5 Christopher Rea and Nicolai Volland eds., *The Business of Culture: Cultural Entrepreneurs in China and Southeast Asia, 1900–65* (Vancouver: UBC Press, 2015).

6 Jean-Pierre Drège, *La Commercial Press de Shanghai, 1897–1979* (Paris: Collège de France, Institut Des Hautes Études Chinoises, 1978), 1–2.

7 Christopher A. Reed, *Gutenberg in Shanghai, Chinese Print Capitalism, 1876–1937* (Vancouver: UBC Press, 2004), 162–163.

8 Chang Chi-cheng 張志誠, "Shu Xincheng zai zhonghua shuju de chuban shengya (1920–1954)" 舒新城在中華書局的出版生涯 (1920–1954) [Shu Xincheng's Publishing Career in Chung Hua Book Company (1920–1954)] (Master's Thesis, National Chengchi University, 2022), 34–36.

lacked printing and/or distribution departments. This chapter explores how the publishing industry raised capital during this period of change, and how intellectuals took this opportunity to transition from employees or contractors to shareholders of publishers or intellectual entrepreneurs.

2 An Overview of the Sample Companies

The 24 sample companies were a very small part of the publishing industry in 1930s Shanghai. The last version of *Shanghai zhinan* (上海指南, *Guide to Shanghai, A Chinese Directory of the Port*), published in 1930 by the Commercial Press, listed 126 Chinese and 16 Western bookstores, but only five of our sample companies appeared in the list of Chinese book stores. They are the Commercial Press, Chung Hwa Book Company (Zhonghua shuju 中華書局), Liangyou tushu yinshua (良友圖書印刷), Kaiming shudian (開明書店), and Shenzhou guoguang she (神州國光社).⁹ In the list of Western bookstores, a store named Yiwensi shuju (伊文思書局) existed, which is not the same Yiwensi shuju that is part of our samples. The English name of the former is “Edward Evans and Sons, Limited,” while the latter named itself in English “The Evans Book Company.” The Evans Book Company was initiated by a former clerk of Edward Evans and Sons, Limited. It took over all the assets and business of the famous and longstanding Western book company in 1935 and operated under the same Chinese name which had been used by Edward Evans and Sons, Limited for decades.¹⁰ In a nutshell, most of the sample companies used for this study were newcomers in the industry.

When comparing the survey data created at the beginning of 1935, it seems that the samples are overrepresenting large publishers. The survey was conducted by the Education Bureau of the Shanghai Municipal Government (Shanghaishi jiaoyuju, 上海市教育局). While 258 “bookstores” responded to the survey, only 233 provided detailed information, which included the name, address, main business, and estimated asset value of the institution, as well as the name, age, native place, and address of the manager. Just like the sample companies in this study, few respondents adopted the term “*chuban*” in describing their main business. Even the most famous publishers, such as The Commercial Press and Chung Hwa Book Company, used the term “*faxing*” (發行), which literally meant “to distribute” rather than “*chuban*.” Of the 139 institutions which published (“*chuban*” or “*faxing*”) books

⁹ *Zhengding shanghai zhinan* 增訂上海指南 [Guide to Shanghai: A Chinese Directory of the Port (Revised Edition)] (Shanghai: Shanghai yinshuguan, 1930), juan 6, 36–39.

¹⁰ “New Book Co. Takes Over Old Concern,” *The China Press*, December 23, 1935, A12.

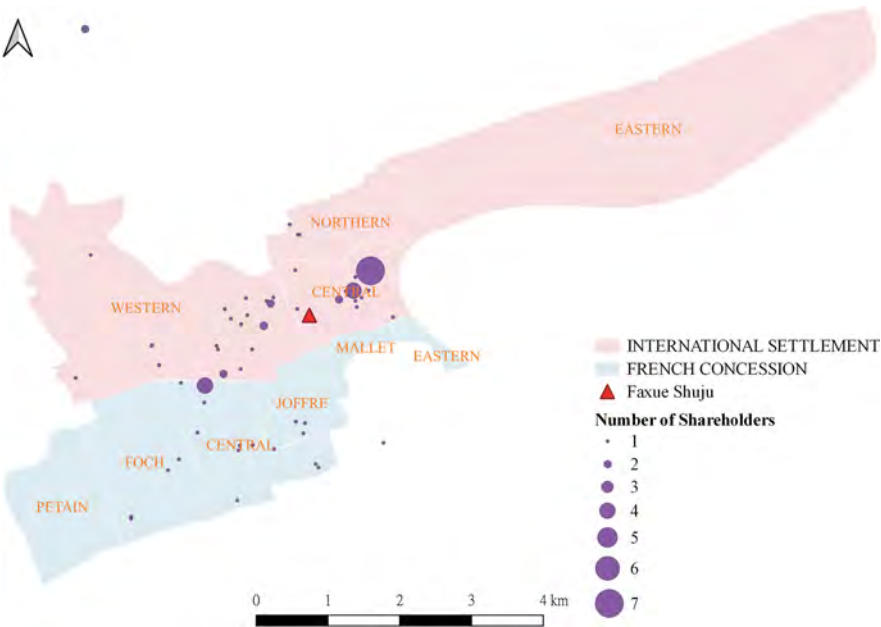
and reported their estimated asset values, 48 (34.53%) had assets less than 5,000 yuan, and 32 (23.02%) had 5,000 yuan or more but less than 10,000 yuan.¹¹ By contrast, all sample companies except one raised at least 10,000 yuan from the investors. This is not a surprising result because all samples were joint-stock companies.

The registered capital of the sample companies varied greatly, as did the number of shareholder accounts and the average investment of each account. Table 1 shows the latest registered information of each company before the outbreak of the Sino-Japanese War. The registered capital of the Commercial Press, which is the largest in the sample companies, is 1,000 times greater than that of the Daye tushu (大業圖書), which is the smallest of the sample companies. Nevertheless, the number of shareholder accounts of the Commercial Press is only 364.57 times greater than that of the Daye tushu, which highlights the great fundraising ability of the former. The Commercial Press not only united more shareholders than its counterpart but also got more investments from the shareholders individually. It is not always possible for the researchers to know how much each shareholder invested because many shareholders owned multiple accounts in different names or code names, and to integrate the accounts is usually a real effort. I therefore calculated the average investment of each shareholder account but not that of each shareholder. Table 1 shows that the average investment of each account was mostly below 1,000 yuan. (The median was 714.29 yuan.) Consequently, most sample companies had to recruit more shareholders to get sufficient funds. (The median was 69 accounts.)

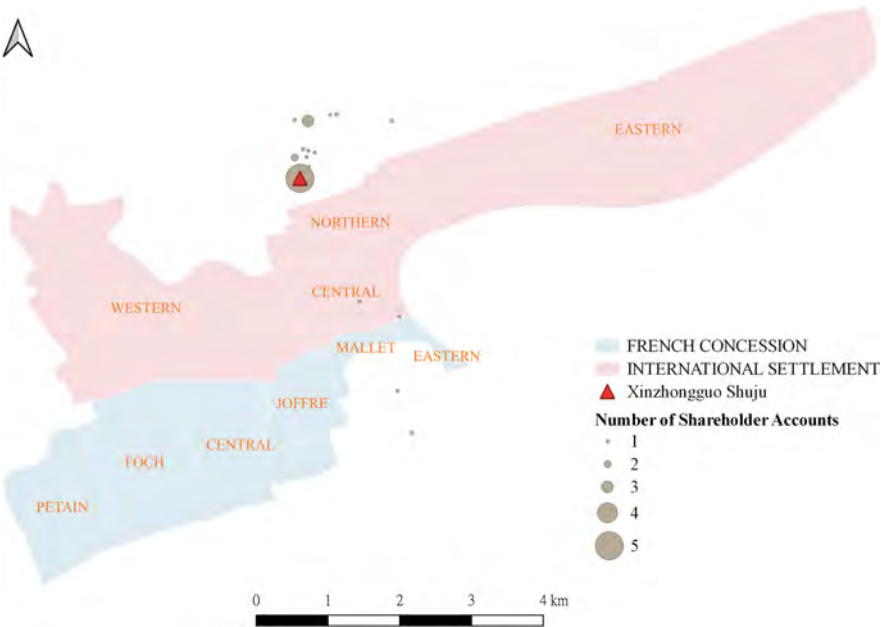
The addresses provided by registered shareholders reveal that most sample companies were funded by Shanghai inhabitants. Of the 24 sample companies, including the Commercial Press, 15 raised 50% or more capital locally (Table 1). Faxue shuju (法學書局) and Xinzhongguo shuju (新中國書局) are the only two companies which had more than 30 shareholder accounts, recorded detailed addresses of the accounts, and raised over 90% capital from Shanghai. There were seventy-two accounts of the Faxue shuju registering their addresses in Shanghai, but one of the addresses turned out to be a fake.¹² Map 1 shows that most shareholders of the Faxue shuju were concentrated in the Central District and the east part of the Western District of the International Settlement. By contrast, 16 of 23 Shanghai shareholder accounts of Xinzhongguo shuju were located in the east part of the Zhabei area (Map 2). Geographical proximity of non-Shanghai shareholders is difficult to evaluate and present in the same way, but it does exist. For example,

11 Shanghai shi jiaoyuju disike tongshu jiaoyu gu 上海市教育局第四科通俗教育股, *Shanghaishi shudian diaocha* 上海市書店調查 [A Survey of the Book Stores in Shanghai] (Shanghai: Shanghai shi jiaoyuju diyike suwugu, 1935).

12 The account of Yang Jingcun 楊景存 which contributed 2.5% capital registered to a fake address.



Map 1: Registered addresses of shareholder accounts (Faxue shuju).



Map 2: Registered addresses of shareholder accounts (Xinzhongguo shuju).

Tongwen tushu yinshua gongsi (同文圖書印刷公司) raised 45% capital from 18 shareholder accounts located in Qingpu (青浦), a neighbor county of Shanghai; 16 of the 18 accounts registered their addresses within the county seat. It is conceivable that geographical proximity facilitated communication and therefore favored shareholder recruitment, although the key factors that encouraged investment still remain obscure to us.

3 Establishing Credibility: Knowledge and Money

All sample companies except one were companies limited by shares (*gufen youxian gongsi* 股份有限公司). The only exception is Sanmin tushu (三民圖書), an unlimited company (*wuxian gongsi* 無限公司) organized by Wu Zhenghuan (吳拯寰, 1896–1984) and his wife Qin Shihua (秦世華, 1902–?). The couple was willing not only to accept unlimited liability but also to fund their business by themselves. The registered capital of Sanmin tushu increased from 5,000 yuan to 20,000 yuan during 1933–1937, but the couple remained sole shareholders of the company.¹³ In stark contrast, most other sample company initiators were seeking investment from others.

Who were the initiators of our sample companies? This is a tough question for researchers to answer, although the companies limited by shares in the 1930s were obligated to disclose the names of their initial fundraisers. According to Articles 87 and 88 of the *Company Act* promulgated in 1929, which was enacted in 1931, a company limited by shares should have seven or more promoters, and the names of promoters must be recorded in the articles of incorporation.¹⁴ I have found the lists of promoters submitted by 19 of the sample companies. However, not all lists were submitted in the initial registration, and I found that some companies rearranged the lists in subsequent registrations. For example, Kaiming shudian listed nine promoters and had Xia Mianzun (夏丐尊, 1886–1946) at the top of the list in 1929, but it added one promoter and made Zhang Xichen (章錫琛, 1898–1969) the leading promoter in 1932.¹⁵ On the other hand, the initial lists did not always disclose who the initial fundraisers were. To illustrate, Daye tushu could not but list all its seven

13 Yao Xucan 姚旭參, “Wu Zhenghuan zhuanlue,” 吳拯寰傳略 [A Brief Biography of Wu Zhenghuan], *Jiading wenshi ziliao* 嘉定文史資料, 9 (March 1994), 79–81. Documents of the Ministry of Industry (hereafter DMI), IMH Archives, 17-23-01-72-09-047, 17, 19–20.

14 Lifayuan falu xitong 立法院法律系統 [The Law Database of the Legislative Yuan], <https://lis.ly.gov.tw/lglawc/lglawkm>.

15 DMI, IMH Archives, 17-23-01-72-09-096, 140, 210.

shareholders because of the regulation on the minimum number of promoters.¹⁶ In contrast, Dajiang shupu (大江書舖) submitted a list longer than that of any other sample company to highlight the equality of its shareholders.¹⁷ Fortunately, some sample companies promoted themselves in the newspapers through advertising, which provided the essential information of leading promoters for this study. I therefore was able to create a list of leading promoters of 20 of the sample companies.¹⁸ The leading promoters reported there did not consist of the real initial fundraisers but those who were considered to be trustworthy for the shareholders and potential future investors.

Table 2 shows the initial investment, educational background, and current occupation of 20 leading promoters. Generally speaking, the leading promoters contributed more capital than other shareholders. The median amount of investment of all leading promoters was 1,500 yuan, which is much more than the median of average investment of each account of the sample companies presented in Table 1. Among the investors, there were at least ten individuals who had an education of finishing high school or above,¹⁹ which amounts to 50%, while Christian Henriot's study in this book shows that less than 40% of Shanghai's industrialists in the late 1940s had received secondary or above education. Seven of the relatively well-educated leading promoters, included four professors, a government employee, a licensed engineer, and an editor had published books before they started their publishing business. Even the businesspeople were, by and large, with relevant knowledge, skill and experience in book producing although only a few had been staff members in the publishing industry.²⁰ It is obvious that both the

¹⁶ DMI, IMH Archives, 17-23-01-72-09-045, 22.

¹⁷ DMI, IMH Archives, 17-23-01-72-09-042, 56–57.

¹⁸ The sample companies not included were the Commercial Press, Chung Hwa Book Company, Lianyou tushu yinshua and Sanmin tushu. The former three were excluded for lacking initial registration documents. The last one was not included because it did not raise capital from the public.

¹⁹ Though Xia Mianzun did not receive a high school diploma, he did study in various high schools in China and Japan. Jia Yijun 賈逸君 ed., *Zhonghua minguo mingren zhuan* 中華民國名人傳 [Who's Who in the Republic of China] (Beiping: Wenhua xueshe, 1933), vol. 2, "Wenxue," 21. Jin Xuchun 金煦春 might receive considerable education because he had been an elementary school teacher. "Dier shifan fushu xiaoxue kai kenqinhui" 第二師範附屬小學開懇親會 [The Affiliated Elementary School of the Second Normal School held a Meeting of Parents and Faculty], *Shenbao* 申報, January 9, 1918, 10–11.

²⁰ Li Houzhuo (李厚祚, 1880–1945) and Lu Buzhou 陸步洲 were in the printing industry. Lai Lan-sheng 來嵐聲 was amateur writer and tabloid publisher. Mao Dechen 毛德臣 managed a stationary company. Zhang Yiqu was the only leading promoter who had worked in the book publishers. He served as manager of Taidong tushuju 泰東圖書局 before the establishment of Ertong shuju 兒童書局. Ningboshi zhengxie wenshiwei 寧波市政協文史委 ed., *Ningbo xiaogang tishi yanjiu* 寧波小港李氏 [The Li Family from Xiaogang, Ningbo] (Beijing: Zhongguo wenshi chubanshe, 2007), 92–94.

investment and the relevant knowledge helped to build up the creditability of the leading promoters.

A notable point in Table 2 is that the leading promoters who invested less than 500 yuan were all bachelor's degree holders. Hence, I performed a Fisher's exact test to examine whether the holding of bachelor's degree related to the decision of investing less than 1,500 yuan, the median of investment amount of all leading promoters. The result suggests the relation is significant at a 0.05 significance level (Table 3). The low investment of bachelor's degree holders did not necessarily mean their economic disadvantage, but it implies the functioning of other forms of capital.

The example of Chen Wangdao (陳望道, 1891–1977), a leading promoter who made the lowest investment, illustrated how cultural and social capital might work and what kind of trouble a low-investment leading promoter might face. Chen was one of the two leading promoters who received a bachelor's degree from a Japanese university and served as the director of the Chinese literature department of Fudan University when Dajiang shupu was initiated. In fact, it was not Chen's idea to start a publishing business, but it came about through a proposal by his friend Wang Fuquan (汪馥泉) (1900–1959). Wang had studied in Japan after graduating from high school, but without receiving any diploma. He went to Medan, in the Dutch East Indies, in 1925 and worked as a news editor for *Nanyang ribao* (南洋日報).²¹ At the end of 1927, Wang wrote to Chen asking about collaborating in running a magazine or a book publishing company. Chen agreed with Wang that publishing was a promising industry but responded that he was too busy to participate in Wang's project.²² Chen changed his mind after his friends expressed their support for Wang's idea. He wrote to Wang in March 1928, saying that he had organized a writing team of ten people.²³ In early June, Chen wrote to Wang again asking

“Wenhua meishu yingshua zhiban gongsi kuochung” 文華美術印刷製版公司擴充 [The Expansion of Wenhua meishu yingshua zhiban gongsi], *Shenbao*, February 1, 1929, 23. Institute of Modern History, Academia Sinica, Jindai chengshi xiaobao ziliao 近代城市小報資料庫 [Modern Urban Tabloid Database], <https://mhdb.mh.sinica.edu.tw/newsp/index.php>. Lai Lansheng 來嵐聲, “*Shidai ribao zhi qu lai jin*” 時代日報之去來今 [The Past, Present and Future of *Shidai ribao*], *Shidai ribao erzhou jinian tekan* 時代日報二周紀念特刊 [*Shidai ribao* Second Anniversary Commemorative Publication] (Shanghai: *Shidai ribao*, 1934), 1–2. *Huawen hangminlu* 華文行名錄 [Chinese Hong List] (Tianjing: Jiehua guanggao gongsi, 1935), 128. Lou Weichun 樓煒春, “Zhang Yiqu” 張一渠, *Yuyao wenshi ziliao* 餘姚文史資料, 13 (November, 1995), 65.

21 Wang Fuquan 汪馥泉, “Zai nanyang zuo baoguan bianji” 在南洋做報館編輯 [Worked as News Editor in Southeast Asia], *Qingnian jie* 青年界, 9 no. 1 (January 1936), 56.

22 Kong Lingjing 孔另境, *Xiandai zuojia shujian* 現代作家書簡 [Letters of Modern Writers] (Shanghai: Shenghuo shudian, 1936), 162.

23 Kong Lingjing, *Xiandai zuojia shujian*, 164.

Table 2: Initial investment and educational background of the leading promoters.

Company name	Leading promoter	Board member	Register version	Investment amount	Registered capital	Shareholding ratio	Highest degree	Country	School	Occupation
衆明書局(股)	吳頌皋	Y	1932	100	6,600	1.52%	Bachelor	China	復旦大學	Professor
大江書舖(股)	陳望道	Y	1933	100	15,000	0.67%	Bachelor	Japan	中央大學	Professor
華僑圖書印刷(股)	張天爵	Y	1935	220	30,000	0.73%	Bachelor	China	中國大學	Government Employee
法學書局(股)	郭衛	Y	1935	500	10,000	5.00%	Junior College	China	湖南公立法政學堂	Professor
同文圖書印刷(股)	凌贈蓀	Y	1933	500	16,000	3.13%	Unknown	N/A	N/A	Unknown
佛學書局(股)	王一亭	Y	1933	500	50,000	1.00%	None	N/A	N/A	Business Person
中國科學圖書儀器(股)	張延祥	N	1933	1,000	100,000	1.00%	Bachelor	China	交通大學	Licensed Engineer
大業圖書(股)	李厚祚	Y	1936	1,500	5,000	30.00%	Unknown	N/A	N/A	Business Person
樂華圖書(股)	陳天宇	Y	1933	1,500	10,000	15.00%	Unknown	N/A	N/A	Unknown
兒童書局(股)	張一渠	Y	1931	1,500	30,000	5.00%	High School	China	浙江第五中學	Business Person
開明書店(股)	夏丏尊	Y	1929	1,500	50,000	3.00%	Shengyuan	N/A	N/A	Editor
震華書局(股)	來嵐聲	Y	1931	1,600	15,000	10.67%	Unknown	N/A	N/A	Business Person
天馬書店(股)	邵恂儒	Y	1937	3,260	10,000	32.60%	Junior College	China	浙江私立法政學堂	Unknown
神州國光社(股)	黃居素	Y	1932	5,000	400,000	1.25%	Unknown	N/A	N/A	Government Employee

文華美術圖書印刷(股)	陸步洲	N	1930	6,000	50,000	12.00%	Unknown	N/A	N/A	Business Person
新生命書局(股)	周佛海	Y	1934	7,100	40,000	17.75%	Bachelor	Japan	京都大學	Government Employee
新中國書局(股)	金煦春	Y	1931	7,500	25,000	30.00%	Unknown	N/A	N/A	Unknown
現代書局(股)	洪雪帆	Y	1933	10,000	100,000	10.00%	None	N/A	N/A	Business person
新亞書店(股)	薛德煊	Y	1933	10,500	100,000	10.50%	Junior College	Japan	東京高等師範	Professor
伊文思書局(股)	毛德臣	Y	1937	20,000	100,000	20.00%	Unknown	N/A	N/A	Business person
Median (all)				1,500		7.5%				

Source: DMI, IMH Archives, 17-23-01-72-09-001, 21, 31-35; 17-23-01-72-09-005, 19, 23; 17-23-01-72-09-009, 50, 116-120; 17-23-01-72-09-010, 23-25; 17-23-01-72-09-017, 31, 33; 17-23-01-72-09-019, 38, 44-46; 17-23-01-72-09-026, 22, 46; 17-23-01-72-09-029, 24, 25-27; 17-23-01-72-09-038, 23, 24-58; 17-23-01-72-09-042, 42-44; 17-23-01-72-09-045, 22, 24; 17-23-01-72-09-049, 28, 44; 17-23-01-72-09-051, 29, 31-35; 17-23-01-72-09-087, 23, 26-29; 17-23-01-72-09-089, 27, 30-32; 17-23-01-72-09-090, 23, 24-26; 17-23-01-72-09-096, 210, 218-222; 17-23-01-82-09-015, 39, 24-28; 18-23-01-72-09-045, 75-77; 18-23-01-72-09-102, 112, 125. “Choubei foxue shuju” 籌備佛學書局 [Foxue shuju is in the Work], *Shenbao* July 24, 1929, 15. “Dajiang shupu zuori yanke” 大江書舖昨日宴客 [Dajiang shupu Held a Banquet Yesterday], *Shenbao*, September 10, 1929, 16. “Zhenhua shuju dingqi kai chuangleihui” 震華書局定期開創立會 [Zhenhua shuju scheduled to convene the inaugural meeting], *Shenbao*, August 13, 1931, 16. “Waijiaobu diaoqiyuan Zhang Tianjue jun” 外交部調查員張天爵君 [Zhang Tianjue, Delegate of the Ministry of Foreign Affairs], *Liangyou* 良友”, 36 (March, 1929), 28; Ziyuan weiyuanhui 資源委員會 ed., *Zhongguo gongcheng renminlu* 中國工程人名錄 [Who's who of Chinese Engineers] (Changsha: Shangwu yinshuguan, 1941), 85; *Changning xianzhi* 常寧縣志 [The Gazetteer of Changning] (Beijing: Shehui keshue wenxian chubanshe, 1993), 514; Lou Weichun 樓煒春, “Zhang Yiqu” 張一渠, *Yuyao wenshi ziliao* 餘姚文史資料, 13 (November, 1995), 65; Shao Chengjie 邵成傑, *Lanfeng shaoshi zhongpu* 蘭風邵氏宗譜 [The Genealogy of the Lanfeng Branch of Shao Family] (Yuyao: Lindian tuwen quaiying youxian gongsi, 2007), 21. Xu Wancheng 許晚成, *Shanghai baiye rencai xiaoshi* 上海百業人才小史 [Brief Biographies of Eminent People from All Walks of Life] (Shanghai: Longwen shudian bianjibu, 1945), 448. Guomin zhengfu wenguanchu yinshuju 國民政府文官處印鑄局 ed. *Guomin zhengfu ge yuan bu hui keyuan yishang zhiyuanlu* 國民政府各院部會科員以上職員錄 [Staff Directory of the Nationalist Government]. Institute of Modern History, Academia Sinica, The Integrated Information System on Modern and Contemporary Characters, <https://mhdb.mh.sinica.edu.tw/mhpeople/index.php>.

Table 3: Correlation between bachelor's degree holding and amount of investment.

	Amount of investment <1500	Amount of investment >=1500
Bachelor	4	1
Non-bachelor	3	12
Fisher's exact test statistic value*		0.0307
The result at $p < 0.05$		Significant

* Calculated by <https://www.socscistatistics.com/tests/fisher/default2.aspx>.

whether he would welcome investments.²⁴ It seems that Wang declined Chen's proposal at the beginning, but Chen successfully persuaded him that sole proprietorship was not a wise choice because insufficient funds would impede the publisher from soliciting high-quality manuscripts and staying competitive in the market.²⁵

On September 10, 1928, the news of the opening of Dajiang shupu appeared in *Shenbao* (申報); three promoters were named, and Chen Wangdao was the leading one.²⁶ In addition to Chen Wangdao and Wang Fuquan, the report named Feng Sanmei (馮三昧) (1899–1969) as a promoter. Feng and Chen came from the same county, Yiwu (義烏) in Zhejiang, and when Feng studied in Tokyo during 1917–1919, Chen pursued his studies there too. Like Wang, Feng returned to China without a diploma.²⁷ Being the proposer of fundraising, the only bachelor's degree holder, as well as the most senior and relatively well-known person of the three, Chen Wangdao unsurprisingly became the leading promoter.

Chen Wangdao planned to raise 10,000 yuan at the beginning, but the difficulty of doing this was far beyond his expectation. Until the beginning of 1931, he was only able to raise 8,350 yuan, and the management team therefore announced that the promoting process needed to be extended. This announcement made some investors lose faith in the company. To successfully withdraw their shares, four shareholders who had invested 2,000 yuan in total reported to the Ministry of Industry that Dajiang shupu was promoting communism.²⁸ Forced by the

²⁴ Kong Lingjing, *Xiandai zuojia shujian*, 165–166.

²⁵ Kong Lingjing, *Xiandai zuojia shujian*, 167–168.

²⁶ “Dajiang shupu zuori yanke” 大江書舖昨日宴客 [Dajiang shupu Held a Reception Yesterday], *Shenbao*, September 10, 1928, 16.

²⁷ Yiwu mingren congshu bianzhuang weiyuanhui 義烏名人叢書編纂委員會, *Yiwu mingrenlu* 義烏名人錄 [Who's Who in Yiwu] (Beijing: Zhongguo wenshi chubanshe, 2001), 102.

²⁸ Zhang Qinghua 張慶華 and others to the Ministry of Industry, June 5, 1931, DMI, IMH Archives, 17-23-01-72-09-042, 5–6.

action, the management team of Dajiang shupu had to agree to the withdrawal.²⁹ Not surprisingly, Dajiang shupu suffered a serious setback during the incident. According to Article 93 of the *Company Act*, it was the responsibility of promoters to invest or raise sufficient funds. Chen Wangdao chose the latter. Two years later, the company was consolidated with a registered capital that exceeded the original goal.³⁰ An interesting question here is how did Chen and his partners accomplish this mission? One of the key factors in achieving this goal was the social networks that Chen and his partners operated in.

4 Working Bonds in Capital Raising: Friendship and Kinship

The information of addresses and agents in the shareholder registers usually provided important clues for detecting the relations among accounts. Table 4 shows that 39 of 56 shareholder accounts in the register of Dajiang shupu shared ten addresses. Contrarily, the nine accounts which invested before 1930 registered seven addresses, and the only shared address was the one of Chen Wangdao (under the name of “Chen Canyi” 陳參一). In fact, Chen was not the only capital raiser at this early stage. According to Zhang Qinghua (張慶華) and his relatives, the four shareholders who informed against Dajiang Shupu in 1931, invested in the company because of the solicitation of Guo Zhaoxi (郭昭熙).³¹ However, three of the six unshared addresses belonged to the disclosed promoters and capital raisers. It was thus clear that Chen kept more investors he recruited before the withdrawal crisis than any other promoters.

The shareholder accounts which shared the same address must be related, although researchers were not always able to find out more specific relations. Table 4 shows that since the withdrawal crisis started, Guo Zhaoxi and Shi Xueming (施學明) were more active than any other early shareholder in recruiting new investors from their families and circle of friends. Guo Zhaoxi was active in recruiting shareholders probably because he was not only a major investor at the early

²⁹ Zhang Qinghua and others to the Ministry of Industry, June 26, 1931, DMI, IMH Archives, 17-23-01-72-09-042, 12.

³⁰ DMI, IMH Archives, 17-23-01-72-09-042, 42–44.

³¹ Zhang Qinghua and others to the Ministry of Industry, June 5, 1931, DMI, IMH Archives, 17-23-01-72-09-042, 5–6.

stage, but also the director of the accounting department in the company.³² As a native of Chaozhou (潮州) in east Guangdong,³³ Guo used to recruit investors from the Chaozhou community in Shanghai as well as their relatives at home. However, it was the Chaozhou shareholders who sparked off the withdrawal crisis,³⁴ and Guo might have had to change his target community. Unfortunately, little is known about the members of Guo's group, which makes further exploration impossible. "Shi Xueming" is very much likely the pseudo name of Shi Cuntong (施存統) (also known as Shi Fuliang (施復亮), 1899–1970), who was alleged to be a promoter and executive board member of Dajiang shupu.³⁵ In Shi's group, "Zhong Ximeng" is the alias of Shi's wife Zhong Fuguang (鍾復光) (1903–1992).³⁶ Both Tong Guoxi (童國希) and Xie Youlun (謝友倫) were female communists who had worked with Zhong in the 1920s.³⁷ On top of that, all the three women came from Sichuan. It is thus obvious that Shi's group was indeed formed by the connections of his wife. The Fujian group contributed the largest amount of capital to the company, but it is hard to find information about the members. The group of 19 Yuanmingyuan Road consisted of people related to YWCA because the registered address was where the headquarters building of YWCA was located.³⁸

32 Zhang Qinghua and others to the Ministry of Industry, June 5, 1931, DMI, IMH Archives, 17-23-01-72-09-042, 5.

33 "Ge tuanti kaihui xiaoxi" 各團體開會消息 [Information on Meetings of Associations], *Shenbao*, October 25, 1921.

34 "Dajiang shupu gufen youxian gongsi lishi Wu Ziquan Wu Zechun qishi" 大江書舖股份有限公司理事吳梓權吳澤春啟事 [Announcement of Wu Ziquan and Wu Zechun, Board Members of the Dajiang Shupu, Limited by Shares], *Shenbao*, May 6, 1931, 5. "Chao xueshenghui shuxiao kaike" 潮學生會暑校開課 [The Summer School of the Association of Chaozhou Students opened], *Shenbao*, July 20, 1923, 18.

35 Zhang Qinghua and others to the Ministry of Industry, June 5, 1931, DMI, IMH Archives, 17-23-01-72-09-042, 5. "Dajiang shupu gufen youxian gongsi lishi Wu Ziquan Wu Zechun qishi", *Shenbao*, May 6, 1931, 5.

36 Shi Yueming 施月明, "Wode muqin Zhong Fuguang" 我的母親鍾復光 [My Mother Zhong Fuguang], *Jinhua wenshi ziliao*, 10 (September 1999), 200.

37 Jiangsusheng funü lianhehui 江蘇省婦女聯合會, *Funü yundongshi ziliao* 婦女運動史資料 [Documents on the History of Women Movement] (n. p., [1983?]), vol. 2, 74. Hu Lanxi 胡蘭畦, *Hu Lanxi huiyilu* 胡蘭畦回憶錄 [M memoir of Hu Lanxi] (Chengdu: Sichuan renmin chubanshe, 1995), 188.

38 "Y. W. C. A. World Council, Invitation to Meet hear Accepted," *The North-China Herald*, October 19, 1932, 99.

Table 4: Capitalization table of Dajiang Shupu.

Registered address	Account name	Year of investment					Total
		1928	1929	1931	1932	1933	
福建三都賽歧雙峰	馮立三			1,000			
	葛靜			1,000			
	馮麟記			200			
	劉照庭			200			
	姜君辰			100			
Subtotal				2,500			2,500
北平禮路胡同23號倫敦會	顧子仁				1,900		1,900
上海北河南路景興里584號	郭昭熙		1,000				
	郭昭明				150		
	劉肖愚				100		
	張兆衡			100			
	黃自強			100			
	劉潤生			50			
	黃旭初			50			
Subtotal			1,000	300	250		1,550
上海辣斐德路辣斐坊26號	汪馥泉	1,200					
	汪新泉			50			
Subtotal		1,200		50			1,250
上海施高塔路四達里50號	詹寶雯				1,000		
	區銘榮				200		
Subtotal					1,200		1,200
日本東京牛込區早稻田鶴卷町二二有終館	施學明		300				
	謝友倫			300			
	鍾希孟			250			
	童季齡			200			
	童國希			100			
Subtotal			300	850			1,150
上海巨潑來斯路美華里19號	陳剛		400				
	陳菊笙		300				
	龔安卿		200				
	陳漱青				100		
	陳參一		100				
Subtotal			1,000		100		1,100
南京戶部街10號	邵仲輝		1,000				1,000
上海八仙橋青年會	沈嗣莊			650			650

Table 4 (continued)

Registered address	Account name	Year of investment					
		1928	1929	1931	1932	1933	Total
上海圓明園路19號	田璫寶			100			
	桑授珍				100		
	管梅容			100			
	張仕章			50			
	蔡慕暉			50			
	葛益勤				50		
	祝弗郎				100		
Subtotal				300	250		550
浙江屋鎮宜昌綢號	沈欽遜				300		300
江灣復旦大學	熊昌翼					200	
	孟慎欲			100			
Subtotal				100		200	300
上海南京路大陸商場遠東貿易公司	馮三昧		250				250
南京估衣廊新民報社	但齊光			100			
	陳銘德			100			
Subtotal				200			200
上海商務印書館編輯所	周越然	200					200
日本大阪天王寺區商科學部	周白棣			100			100
北平東城遂安伯胡同14號	勞啟榮			100			100
四川南川縣平兒院轉	楊友萸			100			100
浦東新陸市立農事試驗場	樓融			50			
	陳貫一			50			
Subtotal				100			100
浙江金華法院前啟源字號轉寄葉村	施長俠			100			100
北平海甸燕京大學	趙紫辰			100			100
杭州府前街92號	馬修白				50		50
上海商品檢驗局	李季穎				50		50
上海博物院路19號	馮雪冰				50		50
上海吳淞路106號	潘濟時				50		50
上海新龍華惠靈中學	方以矩			50			50
蘇州東吳大學	李路德			50			50
總計		1,400	3,550	5,650	4,200	200	15,000

Source: DMI, IMH Archives, 17-23-01-72-09-042, 42-44.

The related accounts did not always share the same address, and therefore I adopted the method of social network analysis to explore and present the relations among the shareholder accounts. Figure 1 shows that all of the above mentioned four groups link with Chen Wangdao, which makes him a node with the highest betweenness centrality in the network.³⁹ Guo Zhaoxi graduated from the business department of Fudan University, the school at which Chen Wangdao taught since 1920.⁴⁰ Shi Chuntong was also former student of Chen, and he later became Chen's colleague at the Shanghai University (Shanghai Daxue 上海大學).⁴¹ Feng Lisan (馮立三) in the Fujian group was a former schoolmate of Chen Wangdao.⁴² Last but not the least, the YWCA group connected with Chen Wangdao through Chen's wife Cai Muhui (蔡慕暉) (1901–1964).

The betweenness centrality of Cai Muhui in the shareholder network of Dajiang shupu is only second to that of her husband. Being a graduate of Ginling College (Jinglin nüzi daxue 金陵女子大學), one of the most preeminent Christian schools for women, Cai worked for the National Committee of the YWCA of China since 1927. She taught part-time at the left-wing Shanghai University and the University of Chinese Art (Zhonghua yishu daxue 中華藝術大學), where Chen Wangdao served as dean or president.⁴³ In less than half a year after she had married Chen in September 1930, Dajiang shupu encountered the withdrawal crisis.⁴⁴ Cai successfully helped the endangered publisher to raise funds in the Christian circle, including gaining the largest individual investor, Gu Ziren (T. Z. Koo, 顧子仁,

39 The scores of betweenness centrality of the node Chen Wangdao is 725. The node Cai Muhui which is second to the node of Chen scores 264.

40 *Fudan daxue tongxuelu (19 nian qiu)* 復旦大學同學錄 (19年秋) [Register of Alumni of Fudan University, Autumn 1930], "Lijie biyesheng" 歷屆畢業生, 3. Zhou Weiqiang 周維強, *Tai bai zi feng—Chen Wangdao zhuan* 太白之風—陳望道傳 [The Biography of Chen Wangdao] (Hangzhou: Zhejiang renmin chubanshe, 2006), 265.

41 Cao Juren 曹聚仁, *Wo yu wo de shijie: Cao Juren huiyilu (xiuding ban)* 我與我的世界: 曹聚仁回憶錄(修訂版) [I and My World: A Memoir of Cao Juren (Revised Version)] (Beijing: Sanlian shudian, 2011), 426.

42 Chen Wangdao told Wang Fuquan in 1928 that Feng Lisan adored him very much since the time they studied in the same high school. Feng became a business person after graduated. They had not seen each other for about ten years until Feng accompanied his son to Shanghai for taking college admission examinations. As soon as Feng knew Chen's plan, he expressed a great willingness to invest. Kong Lingjing, *Xiandai zuojia shujian*, 165–167.

43 Chen Zhenxin 陳振新, "Chen Wangdao furen Cai Muhui de rensheng yinhen" 陳望道夫人蔡慕暉的人生印痕 [The Life of Cai Muhui, Wife of Chen Wangdao], *Dang'an chunqiu* 檔案春秋, no. 8 (August 2020), 44.

44 *Yiwu congshu bianzuan weiyuanhui* 義烏叢書編纂委員會 ed., *Yiwu jiupaozheng* 義烏舊票證 [Old Tickets and Certificates in Yiwu] (Shanghai: Shanghai renmin chubanshe, 2011), 237.

Year of Investment



Type of Relations

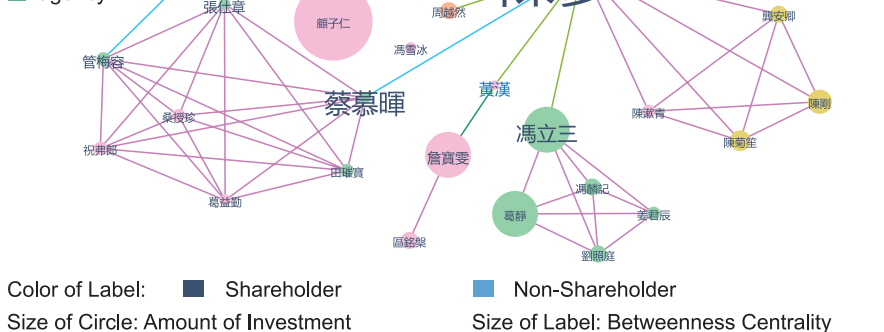


Figure 1: Known relations among the shareholders of Dajiang shupu.

1887–1971), who was a well-known advocate of the Christian student movement.⁴⁵ Even though I have not found a direct connection between Cai and Gu, a strong case could be made for a probable connection through Gu's wife, who had been a leading member in the National Committee of the YWCA since its establishment in China.⁴⁶ Cai may have also facilitated the communication between Christian and non-Christian socialists. Zhang Shizhang (Hottinger S. C. Chang, 張仕章, 1896–?) in Cai's group and his friend Shen Sizhuang (John Wesley Shen, 沈嗣莊, 1894–1973), who served as secretary of adult education at the Shanghai YMCA, were both prom-

⁴⁵ Xie Fuya 謝扶雅, "Wusi' yu jidujiao xuesheng yundong: jinian zhongguo jidujiao xueyun fadongren Gu Ziren boshi (1887–1971)" 「五四」與基督教學生運動：紀念中國基督教學運動發起人顧子仁博士(1887–1971) ["May Fourth" and the Christian Student Movement: In Memory of the Initiator of the Christian Student Movement in China, Dr. Gu Ziren (1887–1971)], *Zhuanji wenxue* 傳記文學, 20, No. 5 (May 1972), 7–11.

⁴⁶ "Nüqingnianhui quanguo xiehui weiyuan mingdan" 女青年會全國協會委員名單 [List of the Member of the National Committee of the YWCA, China], *Shenbao*, November 27, 1923, 15. "Dahui zhixing weiyuan" 大會執行委員 [Executive Committee Members of the YWCA Assembly], *Nuqingnian yuekan* 女青年月刊, 7, no. 5 (June 1928), unpagged.

inent Christian socialists.⁴⁷ Regrettably, so far no sources have been found that allow a deeper understanding of their interactions.

The new funds did not prolong the life of Dajiang shupu, and soon after the company was incorporated, it was acquired by Kaiming shudian. A tabloid reported in 1934 that Dajiang shupu was sold for 3,000 yuan,⁴⁸ but most likely that was not a cash transaction. Instead, 23 of 57 shareholder accounts were transferred to Kaiming shudian at various exchange rates. The face value of the shares acquired was 5,000 yuan in total.⁴⁹ All the small shareholder accounts that had invested less than 200 yuan, except those of Chen Wangdao and Zhou Boli (周伯棣, also known as Zhou Baili 周白棣, 1900–1982), a new graduate of the Osaka University of Commerce (Ōsaka shōka daigaku 大阪商科大学), were abandoned. Both the accounts of Chen Wangdao and Zhou Boli were 100% exchanged, while the exchange rates of other accounts were up to 50%. The arrangement once again demonstrates the privilege enjoyed by individuals who had earned a foreign diploma. Moreover, the accounts connected with Chen Wangdao directly usually got better exchange rates. By contrast, the isolated largest individual investor, Gu Ziren, suffered a huge loss; only 26% of his investment was transferred (Table 5).

Friendship and kinship were basic components of the shareholder network of Dajiang shupu. The influence of kinship by blood was very limited. Both the son of Wang Fuquan and the siblings of Chen Wangdao made only minimal investments.⁵⁰ Friendship and kinship by marriage, in contrast, significantly expanded the pool of investors and helped the company to achieve the goal of fundraising. However, in times of crisis, the peripheral clusters that were linked to the core by weak ties became either rebels or victims.

47 *Year Book and Roster of the Young Men's Christian Associations of China 1932* (Shanghai: Association Press, 1932), 71. Wang Zhixi 王志希, “‘Yeshuzhuyi xuanchuanjia’ – jidujiao shehuizhuyizhe Zhang Shizhang de shengping, sixiang yu shidai” “耶穌主義宣傳家”——基督教社會主義者張仕章的生平, 思想與時代 [The Advocate of Jesusism—The life, thoughts and time of the Christian Socialist Zhang Shizhang], *Daofeng: Hanyu shenxue xuekan* 道風:漢語神學學刊, vol. 46 (January 2017), <https://repository.lib.cuhk.edu.hk/en/item/cuhk-1207144> (accessed March 31, 2024). Zeng Qingbao 曾慶豹, *Jinshi yu geming: jijing de hanyu shenxue sichao (1901–1950)* 經世與革命:激進的漢語神學思潮(1901–1950) [Toward the Oikonomia and the Revolutionary Christianity: Sino-Christian Liberation Theology (1901–1950)] (Taipei: Zhuliu chuban youxian gonsi, 2021), 145–186.

48 “Dajiang shupu chupan” 大江書舖出盤 [Sale of Dajiang shupu], *Shehui xingwen*, 7, no. 4 (April 1934), 52.

49 DMI, IMH, 17-23-01-72-09-042, 42-44; 17-23-01-72-09-097, 88–103.

50 Deng Minyi 鄧明以, *Chen Wangdao zhuan* 陳望道傳 [The Biography of Chen Wangdao] (Shanghai: Fudan daxue chubanshe, 1995), 4–5.

Table 5: Shareholder accounts of Dajiang shupu transferred to Kaiming shudian.

Account name	Investment in Dajiang	Investment in Kaiming	Exchange rate	Directly connected to Chen Wangdao
陳參一	100	100	100%	Y
周白(伯)棟	100	100	100%	Y
邵仲輝	1000	600	60%	Y
郭昭熙	1000	500	50%	Y
馮立三	1000	500	50%	Y
陳剛	400	200	50%	Y
龔安卿	200	100	50%	Y
周越然	200	100	50%	Y
汪馥泉	1200	400	33%	Y
陳菊笙	300	100	33%	Y
施學明	300	100	33%	Y
Average exchange rate				55%
葛靜	1000	500	50%	N
劉照庭	200	100	50%	N
馮麟記	200	100	50%	N
童季齡	200	100	50%	N
區銘榮	200	100	50%	N
熊昌翼	200	100	50%	N
沈嗣莊	650	300	46%	N
鍾希孟	250	100	40%	N
謝友倫	300	100	33%	N
沈欽遜	300	100	33%	N
顧子仁	1900	500	26%	N
詹實雯	1000	200	20%	N
Average exchange rate				42%

Source: DMI, IMH, 17-23-01-72-09-042, 42-44; 17-23-01-72-09-097, 88-103.

5 The Expansion of Capital Raising Networks and Its Limitations

Friendship needs a place to start and needs to be cultivated. In the case of Dajiang shupu, we have seen how relationships developed in schools and workplaces helped Chen Wangdao become successful in raising capital. In the following case of

Faxue shuju, we will see how the background of coming from the same school and workplace might facilitate the expansion of a capital-raising network. The leading promoter of Faxue shuju, Guo Wei (郭衛) (1892–1958), was a senior lawyer. In the 1930s, he gradually ceased practicing law and devoted more and more energy to teaching, writing, editing, and publishing.⁵¹ By the time Faxue shuju had been established, Guo Wei served as the director of the Department of Law at Zhongguo gongxue daxuebu (中國公學大學部). Probably for this reason, ten of the 17 teachers in the department, as well as an English teacher, became shareholders.⁵² Meanwhile, Guo also taught part-time at the Shanghai faxueyuan (上海法學院), and he managed to recruit six shareholders there.⁵³ The 2-step ego-network consists of 18 nodes of shareholders, and the total amount of investment was 3,100 yuan. Additionally, many of Guo's colleagues taught at other law schools, and from those, more shareholders could be recruited. For example, at the Shanghai fazheng xueyuan (上海法政學院), four shareholders solicited seven new investors, including the director of the Department of Law.⁵⁴ Figure 2 depicts the max step ego-network of Guo, which contains 43 nodes of shareholders, which increased the total amount of investment to 5,950 yuan, which was about 60% of the total registered capital of Faxue shuju.

Professional associations are alternative places for the promoters of new businesses to find potential investors, but the effect is sometimes dubious. Previous studies have indicated that the member of the World Buddhist Householder Grove (Shijie fojiao jushilin 世界佛教居士林, hereafter “the Grove”) initiated Foxue shuju (佛學書局), and Zhongguo kexue tushu yiqi (中國科學圖書儀器) (hereafter ZKTY) was founded by the Science Society of China (Zhongguo kexue she, 中國科學社).⁵⁵ However, both statements need to be verified.

51 Guo Wei, “Wuyi zishu” 五一自述 [Self Description at the Age of 51], *Faling Zhoukan* 法令週刊, 2 (1945), 19.

52 Zhongguo gongxue daxuebu minguo ershier nian biye tongxuehui 中國公學大學部民國二十二年畢業同學會 ed., *Zhongguo gongxue daxuebu minguo ershier nian biye jiniankan* 中國公學大學部民國二十二年畢業紀念刊 [Graduation Album of the Zhongguo Gongxue Daxuebu, 1932] (Shanghai: Zhongguo gongxue daxuebu, 1933), 43, 45–48.

53 *Shanghai faxueyuan yilan* 上海法學院一覽 [An Overview of Shanghai Faxueyuan] (Shanghai: Shanghai faxueyuan, 1933), 47, 49–52.

54 *Shanghai fazheng xueyuan yilan* 上海法政學院一覽 [An Overview of the Shanghai fazheng xueyuan] (Shanghai: Shanghai fazheng xueyuan, 1933), 83, 87–94.

55 Meng Lingbing 孟令兵, *Lao shanghai wenhua qipa — shanghai foxue shuju* 老上海文化奇葩—上海佛學書局 [An Unique Product of Old Shanghai Culture — Shanghai foxue shuju] (Shanghai: Shanghai renmin chubanshe, 2003), 22–23. Zhang Jian 張劍, *Sai xiansheng zai zhongguo — zhongguo kexueshe yanjiu* 賽先生在中國—中國科學社研究 [Science in China — A Study of the Science Society in China] (Shanghai: Shanghai kexue jishu chubanshe, 2018), 184–188.

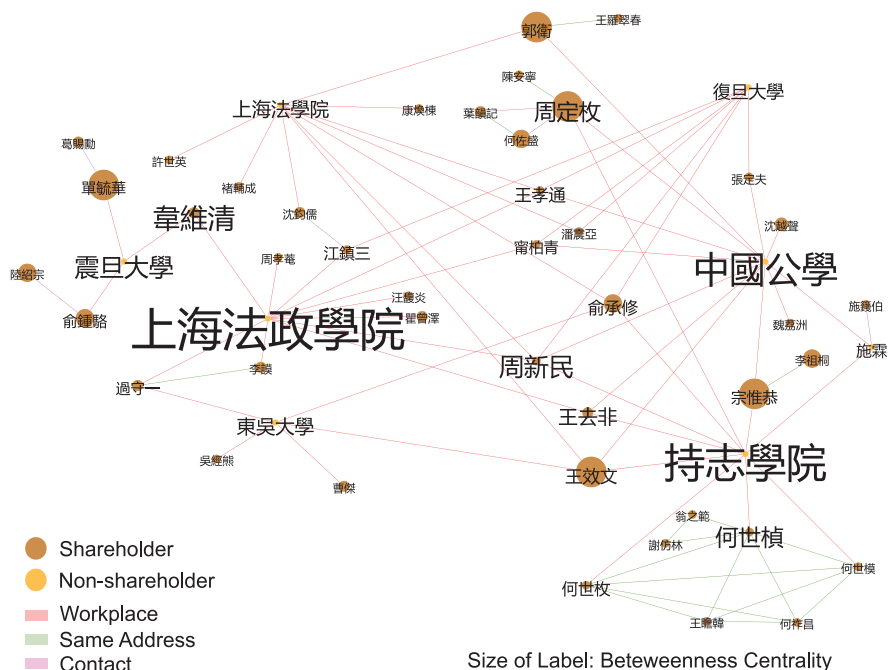


Figure 2: Ego-network of Guo Wei.

At the outset, Foxue shuju claimed that its leading promoter was the president of the World Buddhist Householder Grove, Wang Yiting (王一亭) (1867–1938), and the preparatory office of the publishing company was set in the Grove.⁵⁶ In fact, more than half of the registered capital of Foxue shuju was invested by only four shareholders, namely Shi Zhaozeng (施肇曾) (also known as Shi Xingzi 施省之, 1865–1945), Li Jingwei (李經緯) (also known as Li Zhengxing 李證性), Zhu Shizeng (朱石曾) (also known as Zhu Shiseng 朱石僧, 1887–1942), and Shen Binhan (沈彬翰).⁵⁷ In his study about Buddhist activism in Shanghai, James Brooks Jessup noticed that Zhu and Li played the role of creating leaders since the reorganization of the Grove in 1922. He inferred their influences might come from their leadership of a group of employees from the Shanghai-Nanjing Railroad. Shi Zhaozhen, who was elected to be president of the Grove in 1924, had many connections in the railroad industry,

⁵⁶ “Choubei foxue shuju” 籌備佛學書局 [Foxue shuju is in the Work], *Shenbao*, July 24, 1929, 15. Zhu Shizeng 朱石曾, “Dai foxue shuju xuanyan” 代佛學書局宣言 [A Declaration made for Foxue Shuju], *Dayun* 大雲, 29 (August, 1929), 17–18.

⁵⁷ DMI, IMH Archives, 18-23-01-72-09-045, 75–77.

too.⁵⁸ Among the four major shareholders, Shen was the only one who had experience working in the book industry, so he served as manager after the publishing company had been established.⁵⁹ Although Zhu and Li were influential in the Grove, less than one-third of the board members of the Grove invested in the publisher until 1933. Even one of the two vice presidents of the Grove did not openly express his support for the company, and most common members of the Grove did not invest in the company either.⁶⁰ Obviously, for Foxue shuju, under these circumstances, the Grove was not an effective channel for raising capital.

The relation between ZKTY and the Science Society of China was far closer than that between the Foxue shuju and the Grove. The Society itself was a major shareholder, holding 28.8% of the shares. By filtering the 2-step ego-network of the Science Society of China, I found that 44 members and staff of the Society, as well as their relatives, held 51% of the shares (excluding the shares held by the Society itself).⁶¹ There is no doubt that the Science Society of China dominated ZKTY, but the vast majority of its members did not invest their money in the company. According to Zhang Jian's analysis of the member directory published in 1937, 1,171 members who provided their current addresses were spread across 14 provinces in China and 4 foreign countries,⁶² whereas ZKTY raised 80.3% of its registered capital from Shanghai. After checking the staff directory that Academia Sinica published in 1932, I inferred that the members of the Science Society of China affiliated with the Academia Sinica and based in Shanghai were major drivers of the incorporation of ZKTY (Figure 3).

Some publishing companies raised capital through political cliques, and Xinshengming shuju (新生命書局) is a typical example. The core shareholders of this company were a group of writers and their relatives: Zhou Fohai (周佛海) (1897–1948) and his wife Yang Shuhui (楊淑慧) (?–1962), Sa Mengwu (薩孟武) (1897–1984) and his brother-in-law Fan Zhongyun (樊仲雲) (1901–1989), as well as Tao Xisheng

58 James Brooks Jessup, "The Householder Elite: Buddhist Activism in Shanghai, 1920–1956," (PhD diss., University of California, Berkeley, 2010), 13, 15. <https://escholarship.org/uc/item/9sm608vw> (accessed March 31, 2024). "Huning tielu zhongguanlichu yiyuan" 滬甯鐵路總管理處易員 [Personnel Change of the General Management Office of the Shanghai-Nanjing Railroad], *Shenbao*, June 4, 1906, 2. "Longhai duban huran yiren" 隴海督辦忽然易人 [Sudden Replacement of the General Manager of Lianyungang-Lanzhou Railroad], *Shenbao*, September 28, 1922, 6.

59 Li Zhengxing 李證性, "Foxue shuju diliujie baogaoshu bianyan" 佛學書局第六屆報告書弁言 [Introduction to the Sixth Report of Foxue Shuju], *Foxue banyuekan* 佛學半月刊, 18.

60 Shijie fojiao jushilin ed., *Shijie fojiao jushilin chengji baogaoshu* 世界佛教居士林成績報告書 [Report on the Achievements of the World Buddhist Householder Grove] (Shanghai: Foxue shuju, 1933), 43–45. DMI, IMH Archives, 18-23-01-72-09-045, 75–77.

61 DMI, IMH Archives, 17-23-01-72-09-051, 31–35.

62 Zhang Jian, *Sai xiansheng zai zhongguo — zhongguo kexueshe yanjiu*, 622.

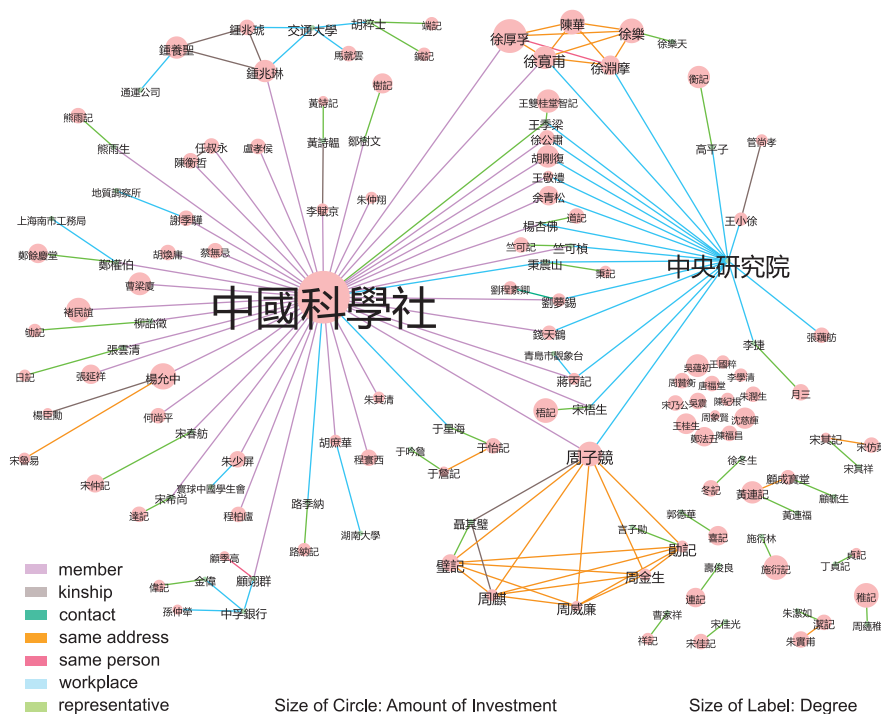


Figure 3: Known relations among the shareholder accounts of ZKTY.

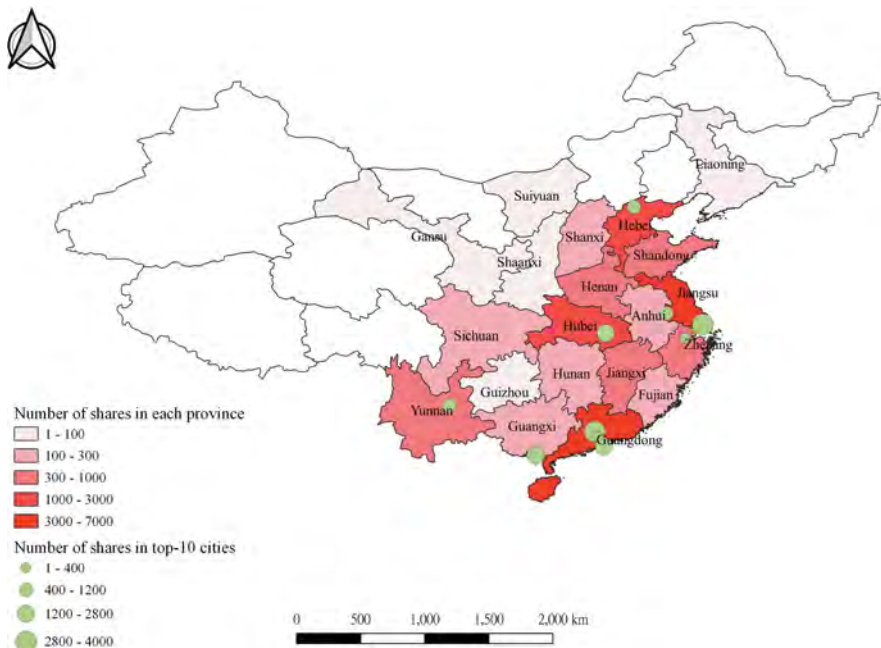
(陶希聖) (1899–1988) and his brother-in-law Zhou Zhixiang (周芷香).⁶³ Zhou Fohai, Sa Mengwu, Fan Zhongyun, and Tao Xisheng were staff writers of the monthly magazine *Xinshengming* (新生命). Zhou Fohai recollected that running the magazine was a political mission assigned by Jiang Zhongzheng (蔣中正) (Chang Kai-shek, 1887–1975) to a group of Jiang's trusted followers, and Zhou was the person to carry it out.⁶⁴ The magazine successfully caught the eyes of readers after it was published. Zhou's colleagues, who were in charge of distribution matters, soon spotted an opportunity to start a business. The company did solicit capital from a lot of political figures, but only Shao Lizi (邵力子) (1882–1967) belonged to the group of Jiang's trusted followers. Many shareholders of the company in the political circle

⁶³ DMI, IMH Archives, 17-23-01-72-09-005, 19. Tao Tailai 陶泰來 and Tao Jinsheng 陶晉生 eds., *Tao xisheng nianbiao* 陶希聖年表 [Annals of Tao Xisheng] (Taipei: Lianjing chubanshiye gongsi, 2017), 39.

⁶⁴ Zhou Fohai 周佛海, *Wangyi ji* 往矣集 [A Collection of Memories] (Shanghai: Pingbao she, 1945), 60.

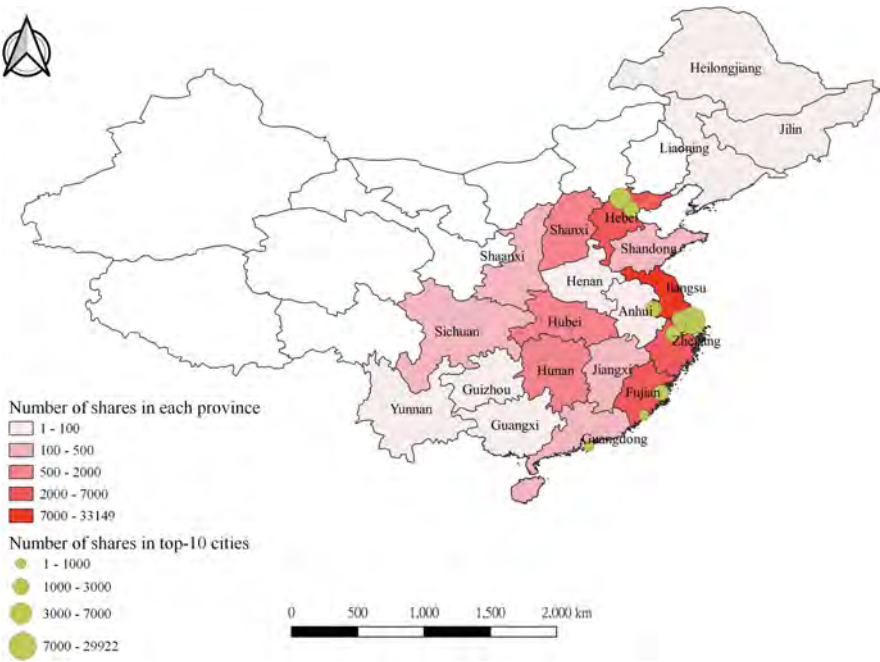
had an experience like that of Zhou Fohai and Tao Xisheng: They had worked for the Nationalist Government in Wuhan led by Wang Jingwei (汪精衛) (1883–1944) around 1927 but chose to support the Nanjing government before the collapse of the Wuhan government.

With the links of kinship and friendship, most sample companies recruited some shareholders from afar, but a few were able to recruit shareholders nationally. Liangyou tushu which developed a world-wide capital-raising network soliciting investment from Japan, Southeast Asia, Australia, New Zealand, India, South Africa, England, Canada, the United States, Mexico, Cuba, Honduras, Venezuela, Panama, Guatemala, Colombia, and Brazil, failed to make similar achievements in the domestic capital market. Map 3 and Map 4 show that in the 1930s the largest publishers, Shenzhou guoguang she and the Commercial Press, created nationwide shareholder bodies.⁶⁵ Nonetheless, the developing orientations of the two companies differed greatly. Shenzhou guoguang she, a publisher founded by Cantonese in Shanghai, sought support in the founders' hometown, and penetrated the southwestern and western provinces. On the other hand, the Commercial Press



Map 3: Distribution of shares: Shenzhou guoguang she.

⁶⁵ The shareholder register of Chung Hwa Book Company did not provide address information.



Map 4: Distribution of shares: The Commercial Press.

founded by natives of Jiangsu grew along with the flow of the Yangtze River and the coast line. Moreover, it got into Manchuria. The growth of the capital raising area was closely linked to the increasing ability to link shareholders despite geographical distance. However, the lack of investor protection mechanisms posed a high risk of loss to the shareholders, especially those who were outside of Shanghai, which would greatly reduce the effectiveness of long-distance capital raising.

6 Conclusion

This preliminary study exhibits the potential of a bulk of long-neglected materials, namely the shareholder registers, for researching the history of businesses and social groups. Beyond making a general description of the size and shareholding structure, this chapter explores who the leading promoters of each company were, how the investors consociated, and how the capital-raising networks developed.

The leading promoters reported by each company were sometimes figure heads only, but the information is still useful because it reflects the strategy of investor

confidence building. By close reading the shareholder registers and by excavating massive amounts of literature with the help of powerful databases, the profiles of the leading promoters could be reconstructed to some extent. This study suggests that, in the 1930s, relevant knowledge, skills, and experience were as important, if not more important, than the amount of investment for investor confidence building. On the other hand, it seemed acceptable that a leading promoter with a bachelor's degree invested less money than average shareholders in the company, irrespective of whether the degree was conferred by domestic or foreign universities. However, to raise sufficient funds remained the sole responsibility of the leading promoters.

What a shareholder register depicts is indeed the ego-networks of a company. The shareholder registers usually documented the connections between investors and the companies they invested in well, and also those between investors and their contacts or representatives. As for the connections between investors, it is not a legal obligation for the companies to disclose the information. Nevertheless, by clustering the accounts which shared the same addresses, contacts, or representatives, this study successfully detected related shareholder accounts in each register. It then made extensive literature explorations and confirmed that friendship and kinship were the principal working bonds used in capital raising.

Different from other chapters in this book, I applied the method of social network analysis to a microstudy. The method helps to illustrate known connections among the shareholders and explain different roles and influences of the shareholders in the networks. Moreover, it is useful in observing the expansion of the network and detecting influential sub-groups. Nonetheless, because the information on connections in historical studies is always highly selective, the researchers must be mindful of the influence of biases.

Although at least half of the sample companies were founded by intellectuals, it seems that most content producers intended to receive salaries or royalties instead of investing their own money. The intellectual entrepreneurs, therefore, had to expand the pool of potential investors. Besides workplace friendship and alumni ties, connections through their wives proved especially effective in raising capital. By comparison, co-membership in social associations, religious or professional, was not quite as useful. The introduction of joint-stock limited liability corporations in the publishing industry in Shanghai used to be seen as a major step forward,⁶⁶ but this study suggests that most publishing companies in the 1930s continued to raise capital through acquaintances.

66 Christopher A. Reed, *Gutenberg in Shanghai: Chinese Print Capitalism, 1876–1937*, 185–188.

Abbreviations

IMH Archives	Archives of the Institute of Modern History, Academia Sinica, Taiwan.
The Grove	The World Buddhist Householder Grove
ZKTY	Zhongguo kexue tushu yiqi
DMI	Documents of the Ministry of Industry

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Christian Henriot

Forging Bonds and Building Factories: The Networked World of Shanghai's Industrial Elite

Shanghai, 1947. The echoes of war with Japan have faded into silence. The city's factories, once a specter of the past, have roared back to life. Industrial recovery, in the wake of Japan's surrender, has been nothing short of a phoenix's rise from the ashes – astounding and spectacular.¹ In the face of towering adversities – rampant inflation, the simmering rivalry between the Guomindang and the CCP, the tightening grip of state control – industrialists have not merely survived, they have thrived. This is the story of a city reborn and its resolute industrialists, and of the intricate networks that bound them together, propelling them against the tide of history.

Introduction

This paper seeks to provide an exhaustive exploration of Shanghai's industrial elite during its zenith, illuminating their ascendancy, authority, and sway. This approach is not chosen out of preference but rather dictated by practical considerations. The vast majority of Shanghai's industrialists will forever remain unknown to us. Even for the entrepreneurs leading substantial industrial ventures, information is scarce. In fact, evidence of their lives and activities is elusive. The individuals who did leave traces were often authentic industrial tycoons or entrepreneurs distinguished in other professional arenas. They engaged in business associations, social organizations, and most significantly, politics. The concept of “elite” used here does not refer to a predefined group but to the group that organically surfaces from the sources.

Among the new professions and professional groups that sprang up in China at the turn of the century, industrial entrepreneurs were a novel occurrence. Modern industry in China unfolded in the wake of Western intrusion, beginning with shipyards and arsenals before swiftly evolving into a robust indigenous network of

¹ Christian Henriot, “Shanghai Industries in the Civil War (1945–1947),” *Journal of Urban History* 43, no. 5 (September 2017): 744–66.

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workshops and factories.² Until light industry emerged at the start of the twentieth century, the actors driving this transformation were barely identifiable, let alone a self-conscious group of “industrialists.” The modern term – *gongyejia* 工業家 – appeared well after industrial companies had developed. The first national professional organization – China Industry Association 中國工業會 – was not formed until 1912, and its lifespan was brief.³ The subsequent organization of Chinese industrialists was established in 1919, during the May Fourth Movement.⁴ However, various related organizations had sprung up concurrently, initially among crucial professional groups such as engineers (1914), and then within industrial sectors like textiles.⁵ Following World War I, China witnessed a significant industrial boom. By 1949, China had a full-fledged class of well-trained and highly skilled industrial entrepreneurs, engineers, and technicians, along with a solid industrial base.

Previous investigations of Chinese industry have generally pursued three primary routes: case studies of a company,⁶ case studies of an industrial sector,⁷ or, less commonly, monographs on individual entrepreneurs (biographies). The latter

2 Albert Feuerwerker, *China's Early Industrialization: Sheng Hsuan-Huai, 1844–1916, and Mandarin Enterprise*, Harvard East Asian Series (Cambridge: Harvard Univ. Press, 1968).

3 “Zhongguo gongyehui xuanyan shu” 中國工業會宣言書 (Declaration of the Chinese Industrial Association), *Shenbao*, 17 July 1912; “Pinglun wuguo gongye qiantu zhi xiwang” 評論五國工業前途之希望 (Commentary on the hope for the industrial future of China), *Shenbao*, 14 August 1912.

4 “Kai guomin dahui zhi chuandan” 開國民大會之傳單 (Leaflet of the National Assembly), *Shenbao*, 6 May 1919.

5 William Kirby, “Engineers and the State in Modern China,” in *Prospects for the Professions in China*, ed. William P Alford, William Kirby, and Kenneth Winston (London: Routledge, 2013), 283–314.

6 Kai Yiu Chan, “Big Business Financing in Modern China: A Case Study of the Flour Milling and Cotton Textile Enterprises of the Rong Brothers, 1901–1936,” PhD diss. (Chinese University of Hong Kong, 1992).

7 Albert Feuerwerker, *Handicraft and Manufactured Cotton Textiles in China, 1871–1910* (Ann Arbor, Mich., 1970); Albert Feuerwerker, *China's Early Industrialization; Sheng Hsuan-Huai (1844–1916) and Mandarin Enterprise* (Cambridge: Harvard University Press, 1958); Min-hsiung Shih, *The Silk Industry in Ch'ing China*, (Ann Arbor: University of Michigan Press, 1976); Thomas G Rawski, *China's Transition to Industrialism: Producer Goods and Economic Development in the Twentieth Century* (Ann Arbor: University of Michigan Press, 1980); Gang Zhao, *The Development of Cotton Textile Production in China*, Harvard East Asian Monographs (Cambridge, Mass.: East Asian Research Center, Harvard University, 1977); Ying Jia Tan, *Recharging China in War and Revolution, 1882–1955* (Ithaca: Cornell University Press, 2021); Fang Xuanting 方顯廷, *Zhongguo zhi mianfang zhiye* 中國之棉紡織業 (China's Cotton Textile Industry), *Zhonghua xiandai xueshu mingzhu* (Beijing: Shangwu Yinshuguan, 2017); Yan Zhongping 嚴中平, *Zhongguo mianfangzhi shigao* 中國棉紡織史稿 (A History of Chinese Cotton Textile), *Zhonghua xiandai xueshu mingzhu* (Beijing: Shangwu Yinshuguan, 2017).

is nearly the exclusive domain of Chinese historians,⁸ although a few monographs centered on individual entrepreneurs have been produced by Western historians.⁹ A notable trend in prior studies was to examine the selected topic (company, sector, individual) from its inception to a specific point in time. This approach mirrors the methods traditionally employed by historians studying industrial development in Western societies, as they sought to elucidate the how and why of the industrial revolution, as well as identify its key orchestrators.¹⁰

Historically, few scholars of China have dared to undertake a comprehensive study of the historical actors in Chinese industrial development, with Marie-Claire Bergère's work remaining a touchstone in this field.¹¹ This study, however, adopts a counterintuitive approach. Initially, it concentrates on industrialists as a collective, instantly raising definitional challenges. As this research will later illustrate, the term "industrialist" itself is fraught with complications. The starting point is well-defined: a list of individuals who owned or managed a factory. But as the research expanded, it encompassed an array of individuals linked to industrial companies, necessitating judgment calls on their qualifications as industrialists. Secondly, the study employs prosopography, a collective biography based on all available biographical data in historical sources. Lastly, the research does not begin at the point of origin but rather at the point of maturity before the collapse of the Nationalist regime. It zeroes in on a single year, extracting all information from a solitary source, to delve retrospectively into layers of biographical data compiled in professional directories, *Who's Who* volumes, and other eminent people's publications.

8 Cheng, Li 程莉, *Jindai shiyejia Zhou Xuexi yanjiu* 近代實業家周學熙研究 (Research on Zhou Xuexi, a modern industrialist) (Hefei: Hefei gongye daxue chubanshe, 2006); Guo, Hongxiao 果鴻孝, *Zhongguo Zhu Ming Aiguo Shiyejia* 中國著名愛國實業家 (Chinese famous patriotic industrialists) (Beijing: Renmin chubanshe, 1988); Zhongguo minying jingji yanjiuhui, *Zhongguo Mingying Qiyeyejia Liezhuan* 中國民營企業家列傳 (Biographies of Chinese Private Entrepreneurs) (Beijing: Jingji guanli chubanshe, 1995); Zhang, Lan and Hu, Yongkang, *Yunzhi xinghua: jindai Shanghai shiyejia yu shehui fazhan* 蘊志興華：近代上海實業家與社會發展 (Rejuvenating China with aspirations: Entrepreneurs and Social Development in Modern Shanghai) (Shanghai: Xuelin chubanshe, 2015); Ding, Xiongzhaoh, *Truth and Facts: Recollections of a Hongkong Industrialist* (Hong Kong: Kader Industrial, 1974).

9 Brett Sheehan, *Industrial Eden: A Chinese Capitalist Vision* (Cambridge, Mass.: Harvard University Press, 2015); Eugenia Lean, *Vernacular Industrialism in China: Local Innovation and Translated Technologies in the Making of a Cosmetics Empire, 1900–1940*, Studies of the Weatherhead East Asian Institute, Columbia University (New York: Columbia University Press, 2020).

10 François Crouzet, *The First Industrialists: The Problem of Origins* (Cambridge, Cambridge University Press, 2008).

11 Bergère, *The Golden Age of the Chinese Bourgeoisie, 1911–1937*.

The year 1947 was selected as the reference point for two principal reasons: despite it being a mere two years after Japan's defeat, with rampant inflation and enduring supply issues, the end of the war and embargo meant Chinese industry had reverted to near-normal conditions. A wave of new industrial companies emerged before hyperinflation quashed economic recovery. While some may argue that 1936 serves as a better reference year, this viewpoint has its own issues. Chinese industry did not perish in 1937. On the contrary, it witnessed significant growth after the active warfare phase until about 1942–43, when the Allies' embargo measures and Wang Jingwei's government failed command, the economy stifled industrial growth.¹² However, the productive capacity remained, and Chinese industries resumed full-speed production immediately postwar. Even under far-from-ideal conditions, the industrial production of 1947 represented a more advanced stage of development, and the population of companies and their owners/managers embodied the actual industrial foundation of the country, which the PRC eventually inherited.

This study confines itself to Shanghai, largely due to the existence of a comprehensive and reliable industrial survey of the city in 1947. This survey offers unparalleled documentation on the nature, size, production, age, and ownership of thousands of industrial companies, listing all the owners/managers. These names are crucial for this research, which primarily focuses on historical actors rather than companies or industrial sectors. The approach entails examining the characteristics, environment, and connections of industrialists in 1947, both within the group and with other individuals, groups, institutions, and society at large. The aim is to identify the various spheres in which they operated, their *modus operandi*, their connections, and to what degree this reveals the information/resource channels they could leverage to foster their activities across these spheres.

Central to this study are the following inquiries:

1. Who were the Shanghai industrialists? How can they be identified? What kind of documentation and criteria can be used to excavate “industrialists” from the sources? Can an “ideal type” with the “right” characteristics be found? Who were the main industrialists in Shanghai?
2. What does the term “industrialist” encapsulate? Was it a social or professional category? What defined an “industrialist” in postwar Shanghai? What are the criteria to classify someone as an “industrialist”?

¹² Christian Henriot, “Shanghai Industries under Japanese Occupation: Bombs, Boom, and Bust (1937–1945),” in *In the Shadow of the Rising Sun: Shanghai under Japanese Occupation*, ed. Christian Henriot and Wen-Hsin Yeh (New York; Cambridge: Cambridge University Press, 2004), 17–45.

3. Can industrialists be captured “in action”? Beyond sociography, what were their tangible involvements, not just as entrepreneurs – if they can be perceived from this angle – but as social actors whose lives and activities extended beyond the factory, the company, or entrepreneurship?
4. How were industrialists interrelated? What channels connected them? Were there specific groupings/networks? What was the larger world of industrialists? Who and what institutions were they connected to? Did connections make a difference or, in other words, how did connections define how they functioned as economic/social/political actors?

The study’s methodology starts with the selection of sources. Primarily, a unique source is utilized to identify the industrialist population, from which a sample is drawn for the study. Secondly, a newspaper – *Shenbao* – provides all news items related to the identified industrialists. In actuality, the digital version of *Shenbao*, processed by the ENP-China team to be searchable and exploitable with digital methodologies, is being used.¹³ I collected the articles that mentioned these individuals and extracted the data that these articles contained in terms of named entities. This process is not about reading the thousands of gathered articles; it is about finding ways to make sense of a considerable amount of data and to interpret what the data can reveal about the social world of industrialists. The query covers all twelve months of 1947 and any activity involving every industrialist on the initial list. Thirdly, the same industrialists were searched in the entire collection of directories and Who’s Whos collected by the Institute of Modern History (Academia Sinica) and made available through the Modern China Textual Database in digital format.¹⁴ While these publications provide biographical information to various levels of precision, I also explored the *North China Herald* in the Proquest collection of English-language periodicals in China, though it offered limited information focusing only on the more prominent actors. This source was not incorporated into the present paper. Finally, the names of industrialists were searched in Chinese and English Wikipedia, which produced very limited matches that added little information for the period under study.

¹³ The ENP-China project [<https://www.enpchina.eu/>] has created three interlinked databases: Modern China Textual Database, Modern China Biographical database, and Modern China Geospatial Database. To explore and retrieve data from the Modern China Textual Database, the ENP-China project developed a dedicated application, HistText, that provides advanced query and data extraction functions.

¹⁴ The original collection of documents is available online: “Jinxiandai renwu zixun zhenghe xitong” 近現代人物資訊整合系統, accessed July 17, 2023, <https://mhdb.mh.sinica.edu.tw/mhpeople/index.php>.

The sources used here significantly impacted the found data and the interpretations provided. Following a brief presentation of how this journey in search of industrialists began, the paper first examines the entrepreneurs' profiles reconstructed from the biographical data in the collection of directories. In the second section, the data collected in the *Shenbao* is used to study industrialists and all the individuals and organizations they were related to. Beyond statistical analysis, network analysis is introduced as a method to explore and filter the massive amount of data. In the third section of the paper, we are revisiting biographies by using data mining and network analysis with more advanced methods in natural language processing. The rationale for this two-step analysis is to highlight how sources play a defining role in what we can learn about industrialists.

Shenbao, much like any other newspaper, served as both a conduit and a repository for a diverse array of societal information. Unlike the Who's Whos, it did not target specific individuals. Instead, its records of events and actions by historical actors, many of whom were ordinary people – seemingly insignificant, swept up by chance into the news – were unplanned. The recording of societal facts and events was a dynamic process, transforming the everyday into successive waves of information spanning across a broad spectrum of topics, from the practical (such as the schedule of ships or movie theaters) to editorials, reports, and economic news. Of course, not all societal events were reported. The selection of what was printed was based on a notoriety gradient for individuals, organizations, and events. Despite its wide coverage, news reporting illuminated only a limited number of individuals. However, it did offer rich, time- and space-specific information (facts, actions) about individuals. As a result, any named individual could be traced through the newspaper's pages in their entirety, from the earliest mention to the last.

Who's Whos and similar publications span a wide range. Some are merely lists of institution members (e.g., directors of the Shanghai General Chamber of Commerce), offering basic information. Others resemble directories, providing only the name, the company, the address, and the position. The most comprehensive are authentic Who's Whos, under various Chinese names, that provide everyone with a full biography or a set of biodata. These Who's Whos offer a snapshot of individuals at a specific moment in time. With each new edition, new layers (new positions) are added, while previously held “current positions” (現任) transition to past positions (曾任, 歷任). Facts of life accumulate like sediments, and Who's Whos provide a path towards a stratigraphy of the industrial elite. The “ego” nature of the Who's Whos ensures that the information is always centered on one individual and the organizations they are affiliated with. Other individuals are very rarely mentioned in each biographical note. However, querying through organizations can help reconnect individuals, as will be explained later.

Who's Whos offer a static view of individuals' lives through successive temporal layers when someone appeared in various publications. The information is condensed to organizations and positions, predominantly revolving around work, but also including affiliations in politics, culture, and social activity. As individual publications, Who's Whos are partial and biased. The selection criteria are often unknown or unclear, heavily dependent on the choices of largely unknown editors who compiled and transcribed biographical elements onto paper.¹⁵ Nonetheless, they constitute a rich treasure trove of historical information. Transformed into a text database, they become a game-changing resource. All individual publications can be searched simultaneously, rendering any individual or institution retrievable and, consequently, connectable.

Methodological Approach

This paper heavily utilizes computational methodologies. Here, I provide a summary of the two main sets of digital techniques employed. For a comprehensive presentation of these methods and the sequential steps followed, I direct readers to my complete methodological record on the ENP-China website.

To explore the digital corpora of newspapers and directories, I relied on natural language processing (NLP) methodologies, specifically implemented through the HistText application. This application consists of a suite of algorithms explicitly developed for querying historical texts in Chinese and English. It includes ready-made functions for data exploration and extraction that I augmented with my own coding, utilizing a variety of libraries in the R programming language. The fundamental approach involved querying the names of industrialists in the digital corpora – *Shenbao* and Who's Whos – and retrieving all documents in which their names appeared. The goal was to constitute the dataset on which I performed three major operations: concordance, to extract the text that contextualized each occurrence of a name; named entity recognition, to extract all named entities in each document, especially persons, institutions, events, and locations; and topic modeling, to classify the biographies by main topics and examine the types of articles that mentioned industrialists.

The second methodology employed is network analysis. The extraction of data on individuals, organizations, events, and positions resulted in a vast quantity of

¹⁵ Huei-min Sun, "Who Are the Elites: Elite Distinction and Who's Who Publications in Early Twentieth Century China," in *Knowledge, Power, and Networks. Elites in Transition in Modern China*, ed. Cécile Armand, Christian Henriot, and Huei-min Sun, (Leiden: Brill, 2022), 22–53.

data points. While I used statistical methods to synthesize the data and highlight key components, this remained a flat analysis by category of data (e.g., type and level of education, provincial origin, type of positions, etc.). Network analysis projects all the data as a graph on which various measures of centrality can be calculated. These centrality measures (in the present case, degree and betweenness centrality) serve to identify patterns, networks, and significant nodes. The main purpose of using network analysis was to examine how industrialists were connected to other historical actors and institutions, in what capacity, and how meaningful the identified networks were. If industrialists were partners in the same companies, I aimed to identify concretely who was involved in the same companies and what kind of groupings I could find (akin to “interlocking directorates”). I expected industrialists to have connections beyond the world of industry and to be involved in social, political, professional, or cultural organizations. How did these activities relate to their role as industrialists? Did these connections represent a supplementary or autonomous world? How instrumental were these connections in the status of industrialists? Finally, did these connections challenge the notion of “industrialist” as a core definition of the concerned actors?

In the following section, I examine the profile of industrialists based on the Who's Who data, from which I proceed to examine how industrialists appeared as public figures in the *Shenbao* in 1947. From there, I undertake a new round of data from the Who's Whos to provide more texture to the networks identified in the process. In the case of the Who's Whos, I retained only the data from the volumes published between 1938 and 1949. I used this as a proxy to have data that matched as closely as possible the data collected on the positions and activities of industrialists in the *Shenbao* for 1947. I conducted my analysis for each dataset at two levels. First, I examined the entire dataset with all the individuals and institutions that they were related to. At the next step, I focused on the data related only to the individuals labeled as industrialists and their direct contacts, both persons and institutions, to reconstitute the most representative and accurate network in which these individuals were involved. In the complete networks, industrialists were mixed up with a large number of individuals and institutions that had little connection, significance, or actual relevance to them. This was produced artificially through the linking with very common named entities (e.g., Guomindang), thus creating a multiplying and distorting effect. To mitigate this, I implemented in all the datasets a coding system for all the nodes, both persons and institutions, to identify them either as industrialists or industrial companies.¹⁶

16 For persons, I coded only industrialists (CodOrg3 = FACT). For institutions I designed a two-level coding system, CodOrg and CorOg2, with CodOrg representing sub-categories of the CodOrg enti-

The information gleaned from the *Shenbao* encompasses daily news reports on a plethora of happenings in the city, across China, and globally. It mirrors the flux of social, political, military, and economic activities at various levels, even though most of the reporting on these individuals is situated in Shanghai. Broadly speaking, the activities primarily consist of a variety of meetings. Industrialists surface in these news reports not explicitly as industrialists – an extremely rare occurrence as I discuss later – but as actors in a myriad of venues, often serving as citizens, community leaders (in business, charity, sports, cultural organizations, etc.), or members of diverse public, private, or state-business entities. However, press articles also mention all individuals involved in the same events and organizations, which affords us a tangible understanding of the interactions between industrialists – as identified by me – and a wide spectrum of social actors.

In contrast to the information discovered in the *Shenbao*, Who's Whos omit the rich social texture of events. Instead, they offer more factual, consolidated data on specific individuals, which includes participation in all institutions with which each person was associated, usually indicating the position held within each institution. Despite the succinctness of most of these biographical records, they encapsulate all that mattered about or for these individuals, offering a greater depth and permanence of data. Because each record is centered on a single individual, it constitutes an ego-narrative that generally does not provide any link to other people. However, since they record institutions and positions – which in turn become data points – the analysis of these data points through network analysis opens a pathway to reconstitute the obscured connections between individuals.

In Search of Industrialists

My investigation commenced with a unique survey of Shanghai industries in 1947. This source, the *Shanghai zhizao changshang gailan* (上海製造廠商概覽), primarily focuses on zhizao companies rather than their owners or managers. It offers the most comprehensive survey of “factories” in Shanghai, even though the criteria for selecting the companies were not explicitly stated. While the survey mostly provides economic data on companies, it also includes a list of their owners/managers. In total, it documents 8,770 distinct names, with 8,740 Chinese and 30 foreigners. This includes 23 companies that listed two managers’ names and one company that listed three names. All the individuals named in this survey were directly involved in running

ties. The whole coding system is available along with the datasets on the ENP-China repository on Zenodo [<https://zenodo.org/communities/enp-china/>].

a factory or through managers (e.g., Du Yuesheng). The 1,284 pages of the *Shanghai zhizao changshang gailan* were converted into spreadsheets for data analysis.

From the initial population of industrial companies, I selected the top 477 factories based on two criteria: workforce size and capitalization. I hypothesized that their significance would make it more likely to find information on their owners or managers. The 477 factories revealed the names of 384 industrialists, all of them Chinese. I used this list to query both the *Shenbao* – yielding information on 170 individuals – and the Who's Whos – resulting in an initial list of 270 industrialists. In the case of the Who's Whos, I conducted a second round of queries based on the names of the institutions extracted from the documents collected in the initial search in the *Shenbao* and the Who's Whos. Consequently, my population of industrialists in the Who's Whos increased to 350. Yet, names alone do not paint the complete picture. One of the major challenges in querying names in digital corpora is disambiguation. The results in both the *Shenbao* and the Who's Whos included false positives due to homonymy.

The primary challenge, however, lay in the multiplicity of names under which an individual or an institution appeared in the sources. This diversity could stem from simple typos in the text, from character variants (e.g., ning 寧/甯/寔, yan 煙/烟, etc.), from varying naming conventions (全國經濟委員會, 經濟委員會, 經委會 for the National Economic Council; 公司, 有限公司, 股份有限公司, 廠 all used as a suffix at the end of the name of the same company), and for persons, from alternate names (e.g., Sun Zhongshan 孫中山, Sun Wen 孫文, Sun Yixian 孫逸仙). In essence, historical data is typically very dirty and requires a lengthy and meticulous process of cleaning and standardization to be processed meaningfully and accurately in any data processing tool such as network analysis, GIS, or topic modeling. When it comes to thousands of data points, there is no alternative to establishing reference lists (individuals, institutions, locations, etc.) to ensure homogeneity and to using programming to correct the errors across the datasets.

Shanghai Elite Industrialists: A Group Portrait

This section provides an analysis of the backgrounds, education, and professional roles of industrialists, using data gathered from multiple sources. The majority of the industrialists were born in the period following the abolition of the imperial examinations and came of age during or after World War I, a time of significant industrial growth in China. The data suggest that, in 1947, most industrialists were relatively young, with a median age of 53, and spanned a variety of generational groups. With regard to geographic distribution, industrialists predominantly hailed from the provinces of Zhejiang and Jiangsu, with Shanghai emerging as a signifi-

cant hub. As for their educational backgrounds, the available data were somewhat limited. However, among those who provided information on their education, a high proportion had received higher education, typically in technical fields or disciplines related to commerce and the humanities.

The compilation of data on industrialists from the Who's Whos produced information on 350 individuals. The data type varied significantly across directories, and it was rarely complete for any individual. Birth year data was available for 178 individuals (65%), which I arranged into five generational groups (Table 1). The data on an individual's career at a specific time is replicated across successive or different editions of the Who's Whos and constitutes as many updates as possible on the individual's life. Temporal data on positions is virtually absent. Hence, what we possess is the cumulative list of all their activities and positions throughout their entire life as recorded at a certain point in time. This creates an artificial concatenation of data that does not accurately reflect a person's real-life position, as we shall see when comparing the directory data to the information collected from the *Shenbao* in a specific year (1947).

Origin and Age

Table 1: Distribution of industrialists by generational group.

Generation	Number	Perc.	Age
1871–1875	4	2.20%	72–76
1876–1884	25	14.00%	63–71
1885–1895	51	29.10%	52–62
1896–1906	77	42.50%	41–51
1907–1918	22	12.30%	29–40

In 1947, most industrialists were individuals born after the abolition of the imperial examinations in 1905, coming of age during or after World War I, a period when Chinese industry experienced a significant boom.¹⁷ The youngest came of age between the Nationalists' rise to power and the beginning of the Sino-Japanese War. There was a numerically significant group born in the decade before the Sino-French War who came of age just after the abolition of the imperial examinations and slightly before the fall of the imperial system. Finally, a substantial group

¹⁷ Marie-Claire Bergère, *The Golden Age of the Chinese Bourgeoisie, 1911–1937*, Studies in Modern Capitalism (Cambridge: Cambridge University Press, 2009).

includes individuals born in the decade of the Chinese state's active yet unsuccessful attempts to establish heavy industries. They came of age during the nascent Chinese industries' period. It can be said that in 1947, industrialists represented a relatively young group, with 54.8% aged between 29 and 51 and a median age of 53. Most could look forward to several decades of activity.

Information on the birthplace – province – was found for 268 individuals (77%). The overwhelming majority hailed from two provinces, Zhejiang (40.0%) and Jiangsu (38.1%). The Cantonese represented a substantial group (6.3%), followed by Anhui (4.1%) and Fujian (2.6%). All the other provinces were usually represented only by a single individual (Hunan, Hubei, Sichuan, Hebei, Shandong, Shanxi, Jiangxi), except Hebei (2). These provincial aggregates still obscure a much more refined geography with high levels of concentration by locality. Among all *xian* (counties), a group of six – in order of importance Shanghai 上海 (21), Yin County 鄞縣 (18), Wuxi 無錫 (17), Ningbo 寧波 (12), Wu County [Suzhou] 吳縣 (11), Zhenhai 鎮海 (11) – contributed 41% of all industrialists. Three were located in Zhejiang (Yin County, Ningbo, Zhenhai) and three in Jiangsu (Shanghai, Wuxi, Suzhou). The second tier of localities (>4) included Wuxing 吳興 (9), Yuyao 餘姚 (7), Dinghai 定海 (6), Cixi 慈谿 (6), Shangyu 上虞 (5) in Zhejiang and Jiangyin 江陰 (6), Zhenjiang 鎮江 (6) and Chuansha 川沙 (5) in Jiangsu. Altogether, these fourteen *xian* provided two-thirds of all identified industrialists. One notable factor here is the strong presence of Shanghai as such.

Education

The educational background of most individuals remains largely unknown, with only 139 (40%) providing information about their education. This group displays a high level of education, though this is likely biased due to individuals with tertiary education being more inclined to mention it in their biography, while those with lesser education, including secondary education, did not consider it noteworthy. Higher education comprises 73.7% of the group, including 9.0% for vocational higher education. The second largest group (23.0%) received a secondary education. Only two individuals held imperial degrees. However, by default, it can be concluded that most industrialists in our sample, even those managing the largest companies, were individuals who achieved success through means other than a high level of formal education. This observation, even as late as 1947, aligns with Bergère's analysis of early industrialists who hailed from modest technical backgrounds.¹⁸

¹⁸ Bergère, 166, 174.

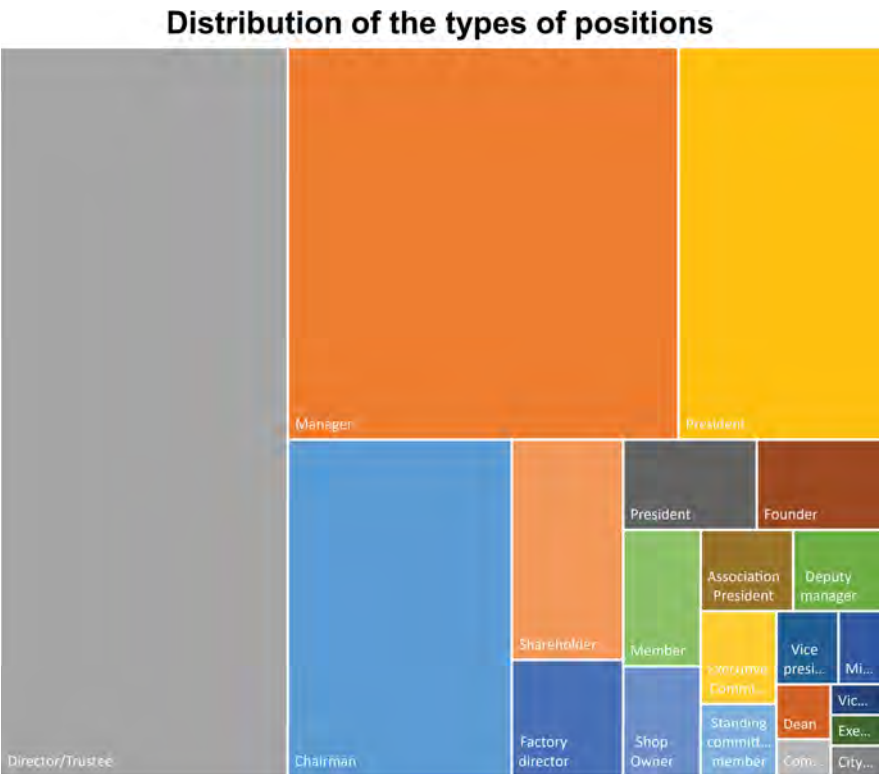
What we can infer from the limited information is that each successive generation appears to be better educated and more likely to have attended formal educational institutions. Our limited sample shows the percentage increased from 20% (1871–1885) to 30% (1886–1895 and 1896–1905) to 33% (1906–1914). Those who received a higher education attended a broad array of 75 Chinese and foreign institutions. Prominent institutions within China included St. John's University (9), Tongji (8) (同濟), Jiaotong (交通) (4), and Shanghai College (滬江) (4) – universities with a technological focus or that prepared students for overseas studies. For those who studied abroad (31), the United States was the preferred destination (18), with Japan (8) and Europe (5) trailing significantly behind. The top foreign universities included the University of Illinois (3), New York University (2), and Northwestern University (2). Quite a few – though only one each – attended other prestigious universities such as Yale, Cornell, MIT, or Harvard.

While we only have data on 41 individuals, more than one-third pursued technical fields such as engineering and chemistry, while 15% graduated in commercial studies. Approximately 30% selected disciplines in the humanities (literature, law). The remaining individuals enrolled in a diverse range of fields that hardly related to industry, such as agronomy, medicine, or military studies. Most received a B.S. or B.A. degree (23/35), a few graduated as engineers (3), or received a Ph.D. (3). However, these figures are based on a very small sample (35 degrees) and probably do not reflect the full extent of the degrees received.

Occupations and Position

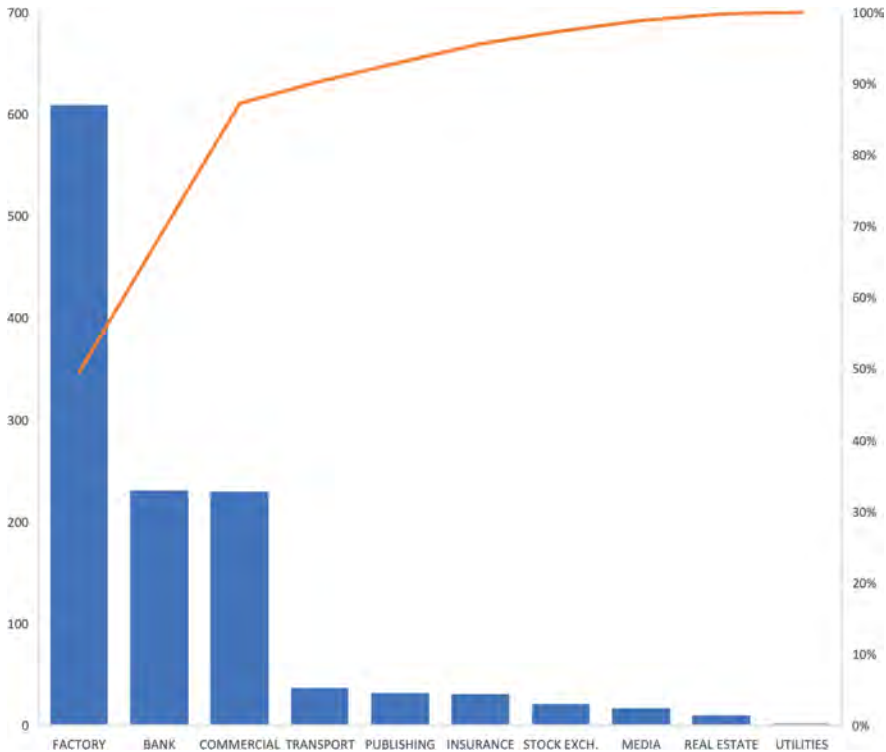
The data compiled on the 350 industrialists from the Who's Whos recorded 1,774 distinct positions (1,676 after removing duplicated positions from English sources) under 155 denominations (Graph 1). Over half of these were mentioned only once, typically representing highly specific or lower-level positions. The positions serve as a strong indicator of the social roles and status of industrialists: the top four were *jingli* (director) 經理 (305), *dongshi* (shareholder) 董事 (411), *zongjingli* (general manager) 總經理 (157), and *dongshizhang* (board chairman) 董事長 (150), representing respectively 18.2%, 24.5%, 9.4%, and 8.9% of all positions. The second term, *dongshi*, accentuates the fact that industrialists held economic interests in multiple companies. The chart below also displays other significant positions such as factory *director* (*changzhang* 廠長), *founder* (*chuangsheren* 創設人), and chairman (*huizhang* 會長), emphasizing the leading role of industrialists in various circles and organizations beyond their companies. Unsurprisingly, industrialists held multiple leadership positions (CEO, president, vice-president, minister, etc.) or ownership roles (member of boards of administration), accounting for 61% of all positions.

Predominantly, industrialists were entrepreneurs, with 67% of their positions in private companies. Government positions at all levels (central, local, agencies, etc.) accounted for only 12%. Positions linked to educational institutions were marginal, and involvement in political organizations was almost non-existent. Beyond the economic field, however, they held a notable presence in two major sectors: professional organizations (*tongye gonghui* 同業公會) and civic associations, respectively constituting 10% and 4% of all positions.



Graph 1: Distribution of the positions held by industrialists (Who's Whos).

Upon a more detailed examination of industrialists' fields of activity, Graph 2 shows that positions in industrial ventures represented just half of all their positions (610) in companies (vs. positions in administrative agencies, associations, parties, etc.). The next most significant sector was finance (232), including banks and stock exchanges (20.7%), closely followed by commercial companies (223), primarily trading companies and shops. Industrialists were also involved in transportation (2.1%), publishing and printing (1.8%), and the insurance business (2.6%), although

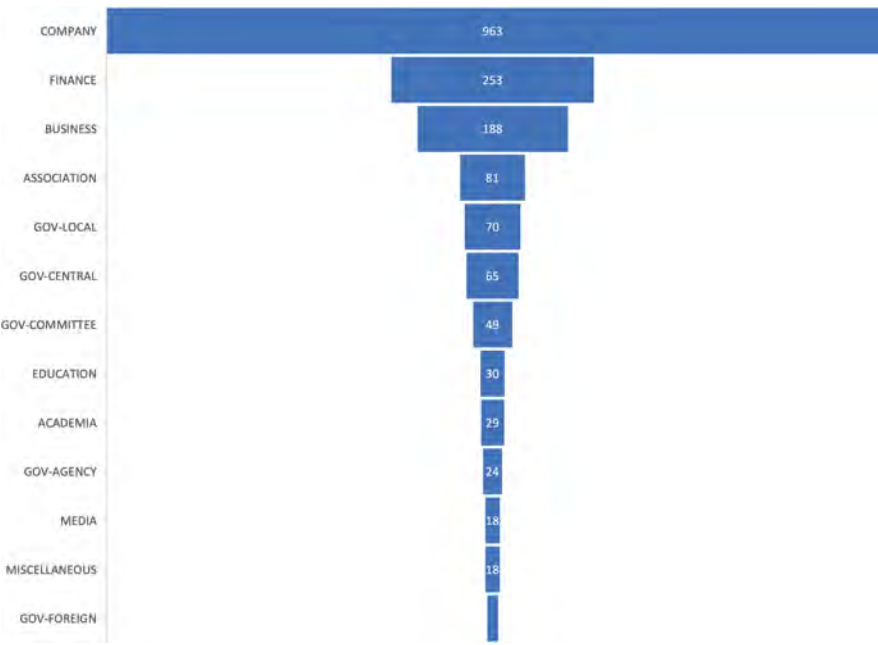


Graph 2: The main sectors of activity of industrialists.

each of these occupied only a small share of occupations. Some held positions in media, real estate companies, and public utilities, but these were marginal.

In terms of membership in specific institutions, the Shanghai Chamber of Commerce occupied the top of this hierarchy, while the first company with relevance to industrialists – Zhongguo guohuo gongsi 中國國貨公司 (China National Products Company) – ranks fifth (Graph 4). One noteworthy aspect of this hierarchy is the significant inclusion of state-affiliated commissions (such as the National Economic Council 全國經濟委員會 or the National Reconstruction Committee 建設委員會), and even the national government itself. There is also a notable presence of the two official municipal bodies (Shanghai Municipal Council 上海市參議會 and Shanghai Municipal Government 上海市政府). However, the most striking feature is the remarkable prominence of banks and their professional organization.

The professional roles held by these industrialists were indicative of their substantial roles and social status. The most common positions included director, shareholder, general manager, and board chairman. Significantly, industrial-



Graph 3: Distribution of positions by sector of activity.

ists often held multiple leadership or ownership roles, suggesting their influence extended beyond their own companies. Most of their roles were in private companies, with a smaller proportion in government roles and even fewer within educational institutions (Graph 3). However, industrialists were notably active in professional organizations and civic associations. In terms of industry sectors, industrial ventures accounted for roughly half of the positions held by industrialists. The finance sector, inclusive of banks and stock exchanges, and commercial companies were also significant sectors. The prominence of state-affiliated commissions and the national government among the institutions industrialists were involved with underscores the interconnected relationship between these industrialists and the state.

In conclusion, this analysis provides a detailed view of the characteristics and roles of industrialists in 1947. It highlights their instrumental role in shaping the industrial landscape of China and their diverse engagements extending beyond their business enterprises.



Graph 4: The distribution of membership in institutions by industrialists.

Industrialists in the *Shenbao*

The pursuit of information on the 384 Shanghai industrialists from the *Shenbao* database resulted in data on only 270 individuals, spread across 1,825 articles. These individuals were mentioned in the context of 3,200 unique people, 630 distinct institutions, and 711 events. The term “events” here refers to any action or occasion in which an individual was involved, ranging from meetings and petitions to interviews, receptions, and weddings. In some instances, there was no formal organization linked to the event, or too many people were involved. In such cases, the host of the event or the event itself was designated as the “institution.”

A loose typology of these events (Table 2) reveals that a significant portion of the recorded events associated with industrialists were meetings (49%), followed by fundraising drives (11%) and election candidate lists (11%). Social activities accounted for a substantial 16%, with some large-scale events such as weddings drawing considerable numbers of guests. The last noteworthy category includes announcements about nominations for various positions. This distribution high-

lights how industrialists were depicted in the *Shenbao*: their newsworthiness was not due to their role as industrialists, but rather their status within business and social organizations.

Table 2: Types of events and number of participants.

Event	Event	Participants	Percentage
Meeting	會議	3900	41%
Election	選舉	1071	11%
Fundraising	募捐	1057	11%
Social Activity	社會活動	712	7%
Recruitment	聘任	631	7%
Founding Conference	成立大會	623	7%
Wedding/Funeral	婚禮葬禮	589	6%
Political Activities	政治活動	179	2%
Banquet	宴會	173	2%
Trial	法案	132	1%
Name list	名錄	126	1%
Miscellaneous	雜事	102	1%
Board Meeting	董事會議	83	1%
Birthday	壽辰	79	1%
Business Activities	商業活動	25	0%
Exhibition	展覽	16	0%

However, this distribution does not encapsulate the entire story. A closer examination of the nature of the events and the institutions behind them reveals that industrialists and their associated individuals were predominantly involved in events conducted by state institutions, both national and local, as well as state-merchant organizations.¹⁹ These organizations were primarily state-sponsored commissions that oversaw economic activities, supply and demand, price control, and the like. Around one-third of the individuals attended such events. Business associations and social organizations were the next most significant categories of events. The roles of the individuals involved in these events spanned both their formal positions in institutions and their temporary roles or positions in the organizing bodies

¹⁹ I apply the concept of “political merchant” developed by Feng Xiaocai 馮筱才 to the various instances created to bring together representatives of the state and the business community, with obvious inequalities among the latter as to who was invited to join by the state. The postwar period saw the multiplication of such instances in the form of commissions (weiyuanhui) Xiaocai Feng, *Zhengshang Zhongguo: Yu Qiaqing yu ta de shidai* 政商中國：虞洽卿與他的時代 (Political Merchants in China: Yu Qiaqing and His Times) (Beijing: Shehui kexue wenxian chubanshe, 2013).

of these events. Though I recorded 133 different denominations of institutions, most were mentioned only once.

The list does not so much demonstrate the types of positions the industrialists held, but rather the circles they moved in and the kinds of people they interacted with. Examining the positions mentioned more than 25 times (Table 3), it becomes clear that many referred to roles rather than positions, such as attendee (出席), participant (參加者), or even election candidate (候選人). Even terms like committee member (委員) could be misleading, as it might refer to a formal position in an institution or membership in an *ad hoc* event organizing committee. In other words, the *Shenbao* does not offer a clear picture of the actual work status of industrialists. Instead, it presents them primarily as participants in events where they contributed their notoriety, wealth, and influence. Often, they were present due to invitations, solicitations, or various social pressures.

Table 3: Nature and number of positions or roles.

Position (English) (Chinese)	Number	Position (English) (Chinese)	Number	Position (English) (Chinese)	Number
Attendee (出席)	1978	National Delegate Candidate (國大代表候選人)	92	Chairman (理事長)	43
Committee Member (委員)	1038	Donor (捐款人)	91	Central Officer (中央幹事)	41
Candidate (候選人)	693	Guest (來賓)	85	Chief Committee Member (主委)	41
Congratulatory Gifts (親友賀儀)	286	Executive Committee Member (常務委員)	84	Vice Committee Member (副主委)	39
Director (理事)	261	Director (董事)	83	Participant (參加 者)	39
Presidium (主席團)	251	Attendee (by Invitation) (列席者)	81	Group Member (團員)	38
Representative (代表)	190	Speaker (致詞)	67	Member (會員)	38
Attending Committee (出席委員)	164	Board Member (理監事)	64	Team Member (隊員)	38
Advisor (顧問)	150	Expert (專家)	60	Convener (召集人)	36
Principal (校長)	134	School Director (校董)	54	Defeated Candidate (落選者)	35
Executive Director (常務理事)	120	Organizing Committee Member (籌委)	51	Parliamentary Member (參政員)	34

Table 3 (continued)

Position (English) (Chinese)	Number	Position (English) (Chinese)	Number	Position (English) (Chinese)	Number
Central Executive Committee Member (中央執行委員)	119	Senator (參議員)	50	Executive Supervisor (常務監事)	30
Chairperson (主席)	114	Central Supervisory Committee Member (中央監察委員)	44	Representative and Parliamentary Member (代表及參政員)	28
Initiator (發起人)	114	Deputy Central Executive Committee Member (候補中央執行 委員)	44	Central Supervisor (中央監察)	27
Fundraising Committee Member (籌募委員)	107	Supervisor (監事)	44	Vice President (副會長)	27

What insights can we glean from this data? When presented in a tabular format, it somewhat oversimplifies the depiction of the relationships between industrialists, individuals, and the institutions they interacted with. To delve deeper into how these entities were interconnected and to understand the nature of these connections, network analysis offers a particularly useful approach to this dataset.

The network constructed from the *Shenbao* data is an affiliation network consisting of 3,834 nodes and 6,734 edges, defined as an undirected network. It comprises a large main component and 49 smaller components. Most of these smaller components are dyads, with a few star-like sub-networks. Only one institution, the Bristle Finishing Trade Association (豬鬃整理同業公會), connected a substantial number of individuals (22, with only one industrialist) without any link to the main component. I excluded all the smaller components from my analysis.

Although I conducted a systematic analysis of this network, the primary function of this analysis was to identify issues within the network. For instance, the highest betweenness centrality and degree centrality scores were associated with the Guomindang (國民黨) and a single event, a wedding (張增謙君結婚). This was due to the large number of individuals connected to these two entities, a major political organization that held its congress and a large-scale social event in 1947. That year was also an election year, and industrialists frequently appeared on candidate lists for the Legislative Yuan representing trade associations (職業團體立委) and the National Assembly (國代選舉). Several were also linked to the *Shenbao* (申

報) as “event-makers” (organizers of student fundraising campaigns), significant sports events (工界運動大會, 全市工人運動會), and a national meeting of university presidents.

The existence of these mega-nodes introduced a considerable bias (Table 4). If a single industrialist was linked to such a mega-node, then all participants in the same event became part of his network. For instance, the meeting of the presidents of Chinese universities was not directly related to industrialists, but because some industrialists were members of the board of administration of some universities, they were associated with all the presidents merely because the meeting occurred in Shanghai. I ultimately removed all such artificial connections from the dataset used for the analysis below.

The primary component of the network retains most of the original data and shares similar network characteristics, comprising 3,675 nodes (95.8% of the original) and 6,621 edges (98.3% of the original). This forms a low-density network (0.001) with an average number of neighbors of 3.601 and an average path length of 4.908.²⁰ The node degree centrality demonstrates an even distribution of nodes with a short “long tail” for nodes with more than 50 degrees. Over a third of the nodes have only one degree, meaning these individuals or institutions appeared only once in the *Shenbao* articles.

Table 4: List of the removed nodes.

Political/social organizations/elections	
國民政府	National government
國民黨	Political party [1]
青年會	Social organization
國代選舉	List of candidates to elections [2]
國民大會代表選舉	List of candidates to elections
職業團體立委	List of candidates to elections
Universities	
聖約翰大學	St. John's University
復旦大學	Fudan University
全國專科以上學校	Presidents of universities
Mega events/event maker	
張增謙君結婚	Wedding [3]
申報	“Event-maker” as organizer of fund-raising campaign for students

²⁰ These two measures indicate respectively that each node is linked directly to 3.601 other nodes and that the average indirect distance between two nodes requires going through almost five other nodes. The longest distance (diameter) is 16.

Table 4 (continued)

Political/social organizations/elections	
Charity and sports committees	
全運會首次籌委會	Sports event
籌備全運會委員會	Sports event
工界運動大會	Sports event
全市工人運動會	Sports event
工界第二屆運動大會	Sports event
第二屆全市工界運動大會	Sports event
第七屆全國運動大會	Sports event
清寒學生貸金委員會	Charity committee [4]
兩廣水災救濟籌募委員會	Charity committee

[1] Apart from linking a lot of individuals in general, the GMD held its 4th CEC meeting in 1947, which also created an extensive list of names of its members. Yet again, even if we may assume a degree of proximity among these members, the large number does not offer much in terms of actual relationships that we can qualify.

[2] The year 1947 was a year election to the National Assembly. It involved political parties – in our sample, mostly the GMD – and professional organizations. Representatives were elected on the basis of several venues: area (a district) and professional organizations. The Shenbao published repeatedly lists of candidates, then results of the voting. There is therefore an inflation of such names in the sample, which results only from this logic of repeated reporting. While the presence of an individual on a list of candidate may point to a mutual relationship, especially for the professionalism organizations, it does not qualify to ascertain a strong link.

[3] Some weddings published extensive lists of guests (>100) which turned them into major nodes. Yet these were formal invitations for the most part. All the guests in the lists are placed at the same level and there is no way to distinguish between closer friends of the family, actual relatives, and those who were invited for reasons of prestige. What can be done here is to select just the weddings and see whether some people attended more than one wedding. This would identify the people most likely invited for reasons of prestige or for whom one can establish a relationship with one of the parents of the newly-wed. For funerals, however, the list of attendees was generally not as extensive and high as for weddings. It probably does not introduce a particular bias, but in the same perspective, one can select all such events and see what connections may exist and why.

[4] The fund-raising campaigns can be seen as actions done by individuals that may share a common goal, or who may have been solicited for their social status and wealth, or who may indeed be committed to a cause they share. These fund-raising campaigns usually called for meetings and positions therein, which may support the notion that these were opportunities for individuals to meet and interact

Ranking individuals by degree or betweenness centrality essentially yields the same results. This was expected due to the significance of degrees in an affiliation network. In our case, degree and betweenness are strongly correlated. The most influential individuals in the network are Du Yuesheng (杜月笙) [Ind.] (119), Wang Xiaolai (王曉籟) [Ind.] (91), Pan Gongzhan (潘公展) (90), Xu Jiqing (徐寄廩) [Ind.] (69), Wu Guozhen (吳國楨) (62), Wu Yunchu (吳蘊初) [Ind.] (60), Qian Yongming

(錢新之) (54), and Yan Huiqing (顏惠慶) (48). Regarding institutions, the significant nodes are the National Economic Council (全國經濟委員會) (67), Executive Yuan (行政院) (48), Shanghai Municipal Government (上海市政府) (47), Export Promotion Executive Commission (輸出推廣執委會) (45), and Political Council (民國參政會) (45). The network forms a dense cluster that does not reveal much about industrialists. However, all the dominant institutions are linked to the state.

The subsequent step in the data analysis involved filtering the network. Firstly, I removed all nodes with only one degree (a single connection in the network). I then systematically pruned the network, testing its consistency at each step to highlight the more significant nodes (Table 5).²¹ The first operation reduced the network to 1,304 nodes and 3,651 edges. In the process, two individuals categorized as industrialists, Xu Diaolü (許調履) and Tang Xueyong (唐學詠), were lost. I pruned the network at five successive thresholds from 5 to 40 degrees. Pruning involves removing nodes based on their number of degrees. At each step, we see the selected nodes with the nodes to which they are more closely interlinked in terms of degree. However, in the graph, each node is displayed with its total number of degrees, not the number of degrees between the selected nodes.

The analysis of an affiliation network, which is a two-mode network, can reveal key information about the relationships between individuals and institutions. As we move up the ladder of degrees, we can identify institutions that play a significant role in connecting people, as well as individuals who serve as crucial connectors between institutions. To some extent, this may also reflect the connections between people, although this aspect can be more challenging to discern.

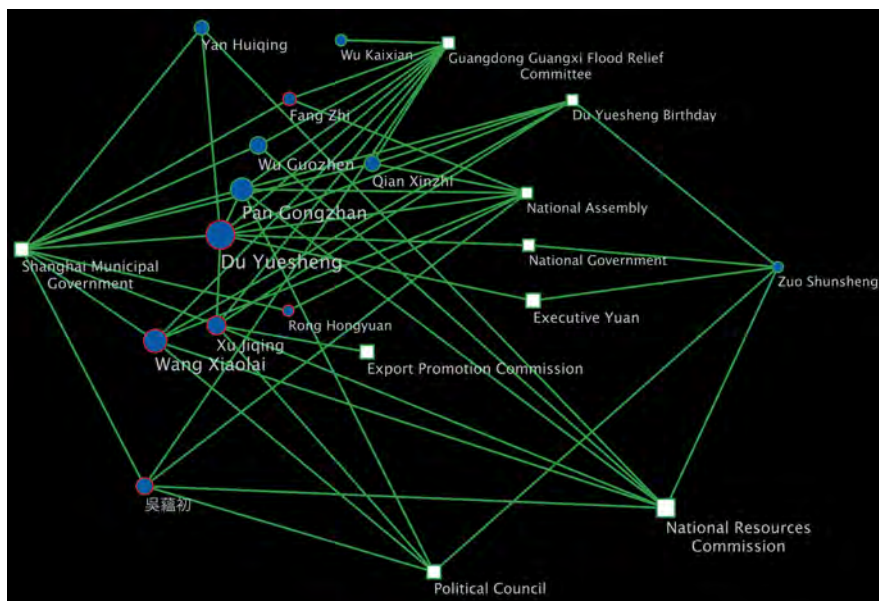
Table 5: Pruning the *Shenbao* network.

Degrees	Nodes	Edges
5	410	1881
10	183	912
20	56	181
30	21	52
40	14	24

²¹ This is the method developed by Marilyn Levin to cut through and make sense of large-scale networks. Marilyn Levine, “Revolutionary Roads: An Integrative Analysis of Utilizing a Chinese Biographical Database,” in *Knowledge, Power, and Networks. Elites in Transition in Modern China*, ed. Cécile Armand, Christian Henriot, and Huei-min Sun (Leiden: Brill, 2022), 181–230.

On one hand, small-scale institutions or events might foster more direct contact and familiarity between individuals, thereby potentially strengthening relationships. On the other hand, it might not be the size of the institution or event that is most significant. Instead, repeated contacts across a broad range of institutions or events could contribute more substantially to solidifying a network of individuals. This mirrors the assumption that corporate executives who serve on the same boards of administration establish privileged contacts, thereby creating a network of like-minded individuals.²² Thus, the exploration of this network can help to elucidate the complex web of relationships among Shanghai industrialists and the institutions they were affiliated with.

The analysis of the *Shenbao* network at a threshold of 30 degrees revealed (Graph 5) a group of influential individuals, including Du Yuesheng (杜月笙), Wang Xiaolai (王曉籟), Pan Gongzhan (潘公展), Xu Jiqing (徐寄廩), Wu Guozhen (吳國楨), Wu Yunchu (吳蘊初), Qian Yongming (錢新之), Yan Huiqin (顏惠慶), Fang Zhi (方治), Rong Hongyuan (榮鴻元), and Zuo Shunsheng (左舜生). These individuals, five of whom were identified as industrialists, were connected through high-level



Graph 5: Network of the individuals and institutions with degree centrality above 40 (*Shenbao*).

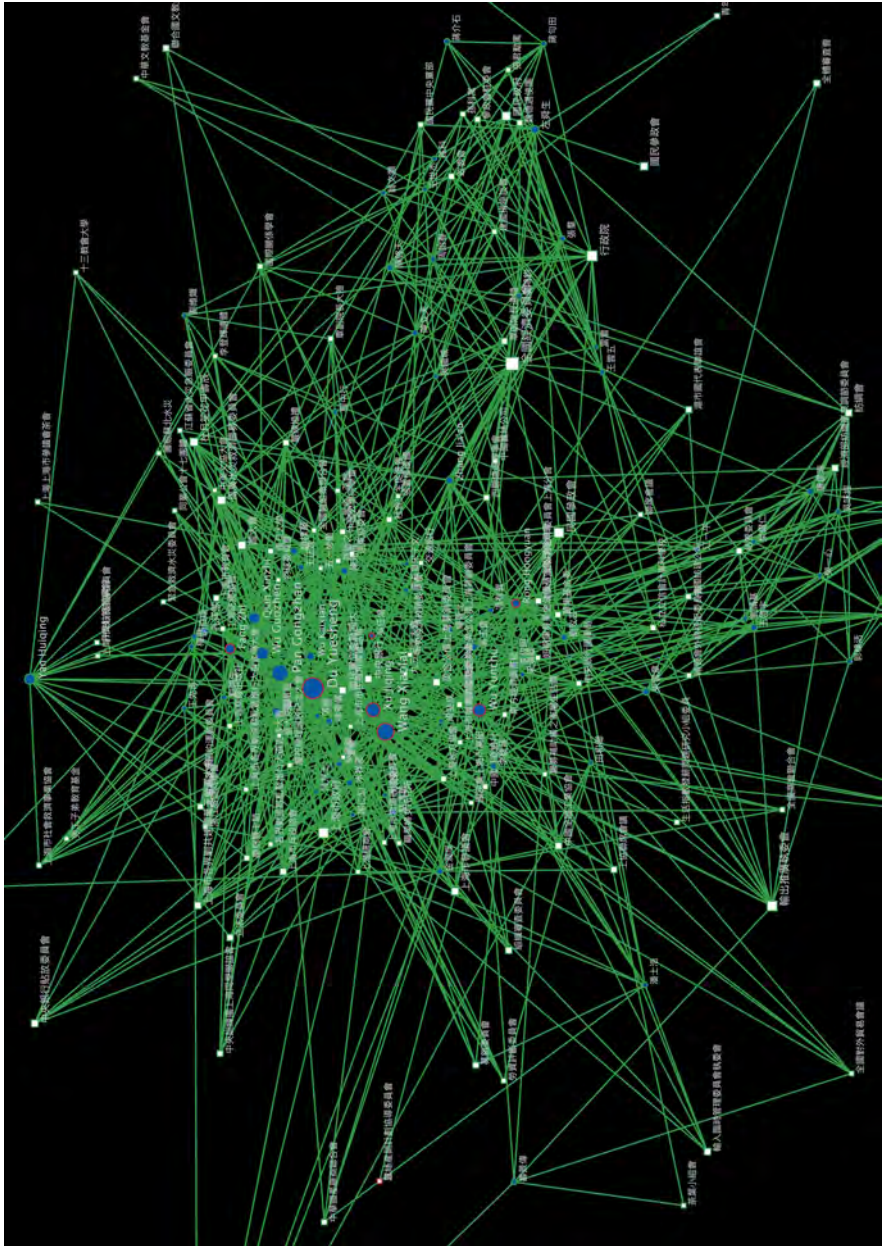
²² Mark S. Mizuchi, "What Do Interlocks Do? An Analysis, Critique, and Assessment of Research on Interlocking Directorates," *Annual Review of Sociology* 22 (1996): 271–98.

official institutions such as the National Government (國民政府), National Economic Council (全國經濟委員會), Executive Yuan (行政院), and National Assembly (國大會), as well as through local government institutions like the Shanghai Municipal Government (上海市政府). Also prominent in this network was a major *ad hoc* relief committee (兩廣水災救濟籌募委員會) and a personal event, Du Yuesheng's 60th birthday celebration.

To better understand the role of industrialists within the *Shenbao* network, two separate analyses were conducted: one focusing on the industrial companies mentioned in the articles, and the other on the individuals identified as industrialists. The first analysis, which focused on the industrial companies, proved to be a dead end. Very few industrial companies were mentioned in the *Shenbao*, as indicated in Table 6, and these companies did not show any clear pattern of connection. The resulting network was composed of multiple small ego-networks, suggesting that each company was largely disconnected from others. This implies that, within the context of the *Shenbao* in 1947, industrial companies did not play a significant role or have much relevance.

Table 6: Industrial companies in the *Shenbao* network.

Name	Name	Name
China Silk Company (中國蠶絲公司)	Greater China Match Company (大中華火柴公司)	China Cotton Weaving Company (中國棉織業產銷聯營公司)
China Chemical Industry Corporation (中國化學工業社)	Minfeng Paper Mill (民豐造紙廠)	China Vegetable Oil Plant (中國植 物油料廠)
Greater China Rubber Factory (大中華橡膠廠)	China Underwear Textile and Dyeing Factory (中國內衣紡織染廠)	China Pest Control Manufacturing Factory (中國殺蟲藥製造廠)
Home Industry Corporation (家庭工業社)	Kangyuan Canning Factory (康元製罐廠)	Yuanfeng Wool Spinning and Dyeing Company (元豐毛紡織染公司)
Shanghai Iron & Steel Co., Ltd. (上海鋼鐵股份有限公司)	Zhanghua Woolen Textile Company (章華毛絨紡織公司)	Guangzhong Machinery Weaving and Dyeing Factory (光中機器染織廠)
New Asia Pharmaceutical Factory (新亞藥廠)	Shanghai Cement Company (上海水泥公司)	Kangfu Weaving Factory (康福織造廠)
Spinning Control Committee Filature (紡管會民營紗廠)	Shanghai Yumin Wool Yarn Factory (上海裕民毛絨線廠)	New Da Weaving Factory (新大織造廠)
Shenxin Textile Corporation (申新紡織總公司)	China Underwear Company (中國內衣公司)	Privately-Owned Filature (民營紗廠)
Greater China Match Company (大中華火柴公司)	China Fuzhong Industrial Corporation (中國孚中實業公司)	Shenxin Filature (申新紗廠)



Graph 6: Network of the “industrialists” with degree centrality above 40.

For the individuals tagged as industrialists, I obtained a larger network that conveyed the impression that industrialists were more connected, though not through their industrial companies (Graph 6). It was indeed the case, but this was merely the reproduction of the core network of individuals identified previously through the pruning of the whole network. Yet, we fail to see many factories on this graph, which also confirms that the industrialists therein enjoyed many mutual relations, but these relations – as recorded by the *Shenbao* – did not have their industrial activity as a basis. Somehow, this reflects the paucity of information about industrial companies in the newspaper – 27 nodes (Table 6) – and the absence of “industrialists as industrialists” in the pages of the *Shenbao*.

Industrialists in the *Who's Whos*

The *Shenbao* and the *Who's Whos* provide two contrasting perspectives on the activities and affiliations of industrialists. While the *Shenbao* offers a snapshot of individuals' activities within a single year, the *Who's Whos* provides a longitudinal account of their affiliations with various institutions throughout their lives up until the time of publication.

Initially, the data was extracted based on the list of 384 industrialists. This dataset was subsequently enriched by querying all the institutions mentioned in both the *Who's Whos* and the *Shenbao*. The aim was to capture a comprehensive picture of these institutions within the *Who's Whos* and to identify all individuals associated with them. This approach offered a more holistic view of the network of affiliations, which could have been overlooked if the analysis was confined solely to the initial list of 384 individuals.²³

The analysis of data from the *Who's Whos*, which spans from 1938 to 1949, shows that the initial network consisted of 5,939 nodes and 8,574 edges, forming 107 components. The large number of components reflects the nature of the biographical data, in which individuals were usually connected only through shared institutional affiliations. The main component of the network consisted of 5,453 nodes (91%) and 8,202 edges (96%). This component had a low average number of

²³ The query through the names of identified institutions in either the *Shenbao* or the *Who's Whos* would necessarily bring up the names of all the people associated to each company. For example, if I searched Mr. Wang, I would find him as a director or shareholder in the Rubber Company, but I would not know who else was linked to this company. If I then search the Rubber Company, any person affiliated with it (shareholder, director, manager, etc.) would necessarily come up. This would then allow me to build a more completed network of Mr. Wang through his connection to the Rubber Company.

neighbors per node (3.008), reflecting the sparse connections among individuals. Both betweenness and degree centrality were used as the primary measures for this affiliation network.

The main component of the network features a wide range of betweenness centrality among nodes, with a mean value of approximately 0.00089. This suggests that nodes do not typically exhibit high betweenness centrality on average, indicative of the nature of the data. Nonetheless, we can identify some parallels with the data from the *Shenbao*. The nodes with the highest betweenness centrality are the Shanghai General Chamber of Commerce (上海市總商會) with 0.206 and the Shanghai Commercial and Savings Bank (上海商業儲蓄銀行) with 0.099, followed by two individuals, Qian Yongming with 0.089 and Du Yuesheng with 0.079. These values exceed the centrality of prominent institutions such as St. John's University (聖約翰大學) (0.066), the Bank of China (中國銀行) (0.066), and the National Government (國民政府) (0.058).

The next tier of significant nodes, both institutions and individuals, falls within a narrower range of betweenness centrality scores: Shanghai Municipal Council (上海市參議會) (0.050), Ministry of Finance (財政部) (0.048), Bank of Communications (交通銀行) (0.043), Fudan University (復旦大學), Shanghai Stock Exchange (上海華商證券交易所) (0.042), Commercial Press (商務印書館) (0.039), Xu Jiqing (徐寄廩) (0.035), Wang Xiaolai (王曉籟) (0.034), National Economic Council (全國經濟委員會) (0.029), China National Goods Company (中國國貨公司) (0.028), and Guomindang (國民黨) (0.027).

The order of institutions changes when evaluated by degree centrality, but it essentially encompasses the same entities. As seen with the *Shenbao* data, betweenness centrality and degree centrality are strongly correlated in this two-mode network. The distribution and relative significance of certain institutions in this network present an inherent bias, resulting from our two-step search strategy: first by the name of industrialists, and then by the name of the institutions to which they were affiliated. This method led to a magnifying effect for some institutions. To mitigate this bias, the data was trimmed by selecting only the institutions directly linked to the industrialists identified from the expanded data.

In the trimmed network, five institutions emerge at the top in terms of betweenness centrality: Shanghai Chamber of Commerce (上海總商會), Shanghai Commercial and Savings Bank (上海商業儲蓄銀行), Ministry of Finance (財政部), Bank of China (中國銀行), and Shanghai Municipal Council (上海市參議會). This highlights the preeminence of official institutions in this network of more permanent positions. Similarly, the most prominent individuals are Qian Yongming, Kui Yanfang, and Xu Jiqing, with the Commercial Press ranking just before Du Yuesheng. Although Du Yuesheng seems less important in terms of degree, he remains a central figure in terms of betweenness centrality, even in this network

based on enduring positions. Du Yuesheng connects directly to 25 institutions (degree 1), but at degree 2, his network expands significantly to 614 nodes and 737 edges, in part due to his membership in all four major institutions that structure the network: Shanghai General Chamber of Commerce, Shanghai Commercial and Savings Bank, Shanghai Stock Exchange, and Bank of China.

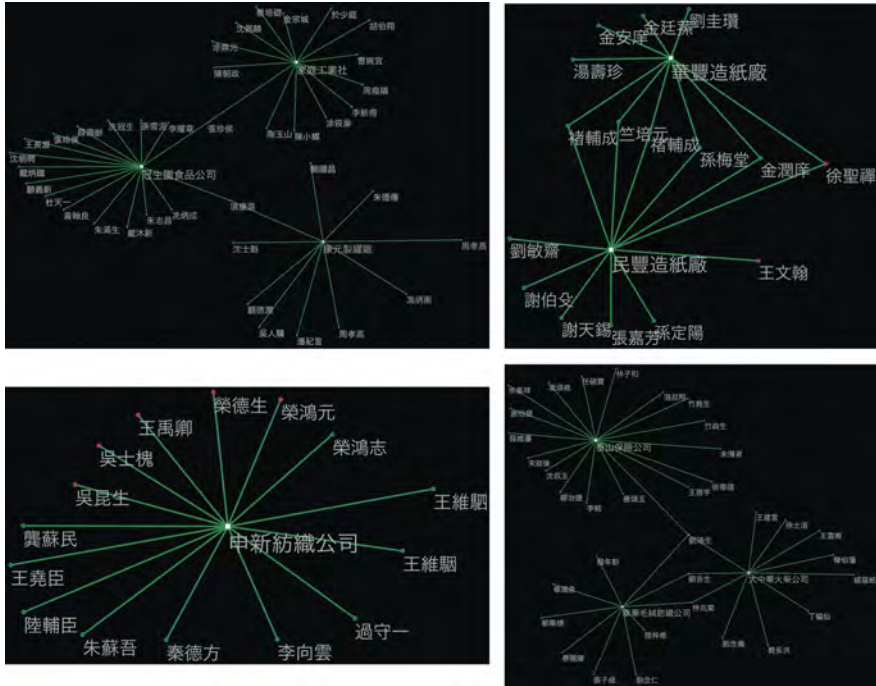
While the *Shenbao* captured individuals in their ongoing activities during a particular year, the Who's Who recorded their affiliations with institutions over their lifetime, up until the time of publication. The data derived from the Who's Who emphasizes membership and positions in institutions, which are particularly pertinent for industrialists, such as the Chamber of Commerce and the Federation of Industry, as well as official institutions, from the National Government to the Ministries of Finance and Industry. The significant presence of financial institutions in this network could point to inherent connections between industry and finance. However, this could also be interpreted as the result of a close association between a group of businessmen and financiers under the stringent stewardship of the nationalist government initiated during the Nanjing Decade. In the postwar period, with the same individuals in place, the more visible hand of the state favored those with privileged access to the central government and its agencies. There is also a strong presence of universities, which could be explained by either prior education at these institutions or membership on their board of administration. In both cases, industrialists are not frequently among the most connected individuals, even though the Who's Who provides a larger number of such individuals.

In examining the network built around industrialists, the pruning of nodes illuminates the prevalence of certain institutions and individuals at the core of the network on a more enduring basis. For instance, when considering the network formed by nodes with more than thirty degrees, it encompasses 35 nodes with merely six individuals: Qian Yongming, Kong Xiangxi, Kui Yanfang, Wang Xiaolai, Xu Xiaochu, and Du Yuesheng. Five of these individuals are classified as industrialists (all except Qian Yongming), although for some, their engagement with industry was somewhat tangential to their other economic pursuits. In terms of institutions, however, industrial companies are completely missing, which is unsurprising given that very few factories were associated with more than five individuals or institutions. The institutions that are represented include eight banks (Shanghai Commercial and Savings Bank, Bank of China, Bank of Communications, Silver Company, National Commercial Bank (浙江興業銀行), Central Bank, Zhonghui Bank, and China State Bank (國華銀行)); two central government committees (Central Military Commission (軍事委員會), National Economic Council); two professional organizations (Shanghai Banker's Association, Shanghai Chamber of Commerce); six central government institutions (Executive Yuan, National Economic Council, Ministry of Finance (財政部), Ministry of Industry (實業部), Ministry of Foreign Affairs (外交

部), National Political Council, National Assembly, National Government); two local government institutions (Shanghai Municipal Government, Shanghai Municipal Council); one association (YMCA); and four universities (Jinan University (暨南大學) at Guangzhou, Southeast University (東南大學) at Nanjing, Great China University (大夏大學), and Fudan University (復旦大學) at Shanghai).

While one could argue that the high number of degrees from major institutions also constitutes a bias similar to that of the removed nodes, the rationale for keeping them is that individuals held positions in these institutions, which conferred both status and prestige upon them and provided them with opportunities for regular and genuine contacts with other members of these institutions. This was much more significant, in substance, than being a member of a large, short-term, and more anonymous charity or sports organization committee. Without taking this indicator as an absolute index of influence, betweenness centrality highlights the preponderance of the Shanghai General Chamber of Commerce on par with Du Yuesheng, Wang Xiaolai on par with the Shanghai Municipal Government and the Shanghai Commercial and Savings Bank, the National Economic Council on par with Xu Jiqing, and the Shanghai Municipal Council on par with Rong Hongyuan, Pan Gongzhan, and Yan Huiqing. Among the nine individuals in this network, two were genuine industrialists (Rong Hongyuan, Kui Yanfang), while one had substantial involvement in the industry alongside other economic activities (Wang Xiaolai), and two had only a peripheral investment in industry (Du Yuesheng, Yan Huiqing). The last three were prominent political personalities (Wu Guozhen, Pan Gongzhan, Xu Jiqing) whose names were often associated with the many events and institutions in which industrialists were involved. Yet, it can also be assumed with confidence that these individuals had ample opportunities to interact and formed a core group of influential brokers in the network.

The selection of nodes tagged as industrial companies, along with their first neighbors, resulted in a large network of 1,312 nodes and 1,306 edges. However, this network comprised 100 components, which again underscores the absence of strong relations between industrial companies as such. Apart from the main component examined below, there were eight components with more than 15 nodes (Graph 7). The largest sub-network connected primarily a group of individuals linked to the Huasheng Electrical Appliance Manufacturing Factory (華生電器製造廠), forming a sort of string network with companies in the same sector. The next sub-network was also built around a single company, the Huacheng Tobacco Company (華成烟草公司), serving as the main broker through which other tobacco factories were connected. The third and fourth sub-networks were ego-networks centered respectively around Li Tingdong (李廷棟), with a wide range of factories, and Zhao Xiushan (邵修善), who managed a whole string of match factories.



Graph 7: Examples of company-based networks.

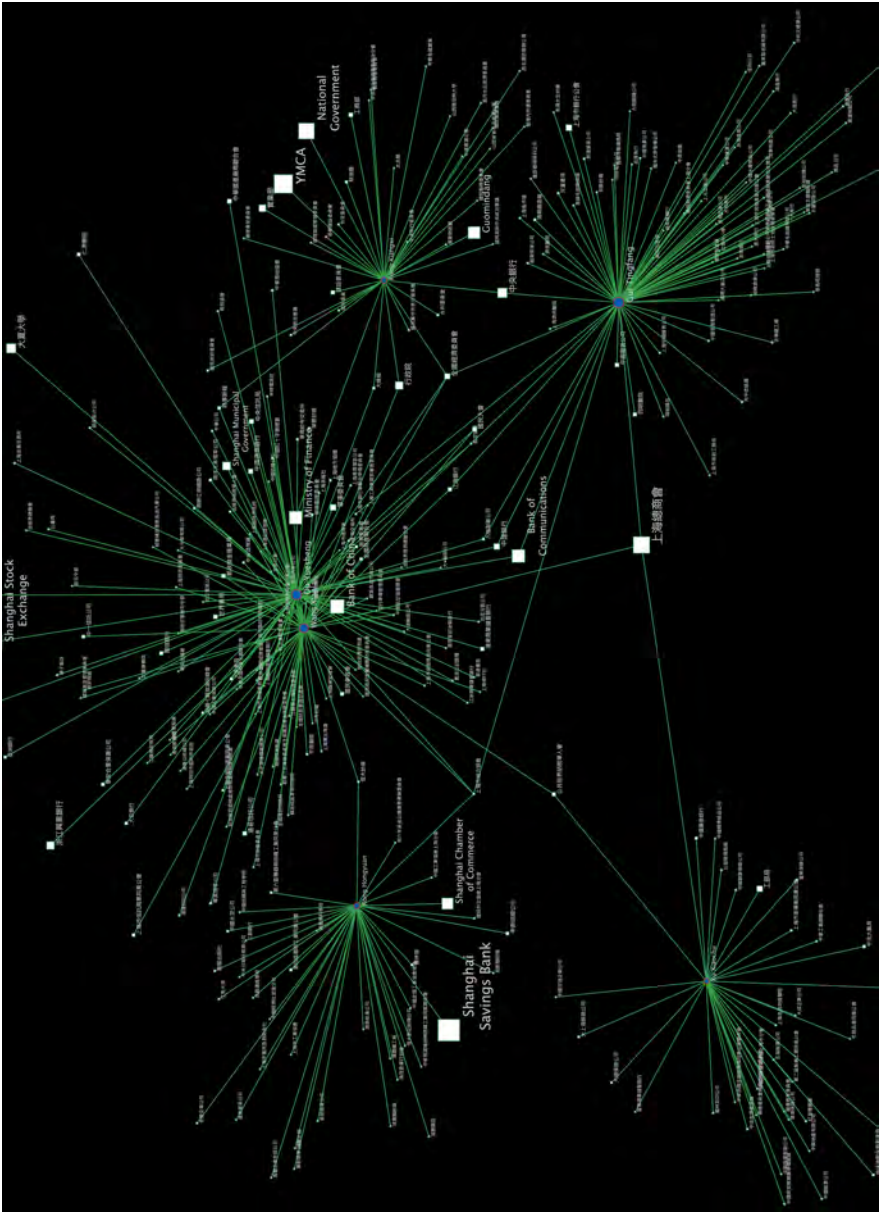
The main component of this network incorporates 753 nodes and 834 edges. Despite its apparent unity, the network fractures beyond five degrees. Within this network, only thirteen factories connect a significant number of individuals, ranging from 10 to 19 (as shown in Table 7). Most of these connections are shareholders or investors, not industrialists, although there are instances of industrialists involved in various companies, either within the same sector or across different sectors. Beyond five degrees, the network disintegrates into a series of smaller subnetworks. One such example is a network connected to two paper factories, Huafeng Paper Factory (華豐造紙廠) and Minfeng Paper Factory (民豐造紙廠). Another example involves three companies linked solely through two distinct individuals, Zhang Zhenhou (張珍侯), an industrialist, and Xiang Kangyuan (項康原), a non-industrialist. This can be interpreted as an indication that industrialists were mostly involved in smaller networks, possibly through co-investment or shareholding, sometimes in factories within the same line of business, sometimes in complementary sectors (such as chemical/pharmacy or metal/machines), or even in unrelated sectors. Decisions on investment could have been based on factors other than common business interests, such as previous relationships, shared origin (籍貫), kinship, and so forth.

Table 7: The largest company-based networks.

Name	Chinese name	Degree	Betweenness centrality
China Silk Company	中國蠶絲公司	19	0.0039698
China Chemical Industry Corporation	中國化學工業社	14	0.0039721
Great China Rubber Factory	大中華橡膠廠	14	0.00682923
Family Industrial Cooperative	家庭工業社	14	0.00358305
Shanghai Steel Company	上海鋼鐵股份有限公司	13	0.00310311
Xinya Pharmaceutical Factory	新亞藥廠	13	0.00327888
Textile Association Spinning Mill	紡管會民營紗廠	12	0.00103146
Shenxin Textile Corporation	申新紡織總公司	11	0.00344368
Great China Match Company	大中華火柴公司	11	0.00527863
Minfeng Paper Mill	民豐造紙廠	10	0.00178531
China Lingerie Textile Dyeing Company	中國內衣紡織染廠股份有限公司	10	0.00301885
Kangyuan Can Factory	康元製罐廠	10	0.00209729
Zhanghua Woolen Textile Company	章華毛絨紡織公司	10	0.00223974

The network created by selecting the individuals labeled as industrialists comprises 1,589 nodes and 1,828 edges. Even within this network, there are 51 components, suggesting that at least 50 industrialists were not directly connected to those in the main component. These industrialists formed their own networks, ranging from 2 to 9 nodes. The main component retained the majority with 1,363 nodes and 1,651 edges. We found the same individuals in essentially the same order (degree centrality), although with some additions (Zhang Jingjiang (張靜江), Fang Shubo (方椒伯), Zhang Wenkui (張文魁), Huan Hanyan (黃漢彥), Bao Guochang (鮑國昌), etc.). When the degree centrality is set at 30, only six individuals remain: Kong Xianxi, Wang Xiaolai, Xu Xiaochu, Rong Hongyuan, Du Yuesheng, and Kui Yanfang (Graph 8). Except for two cases where two pairs of individuals were connected through an industrial company (Hengda Cotton Mill (恆大紗廠), Jiufu Pharmaceutical Company (九福製藥公司)), these six individuals were associated solely through professional organizations, banks, or official institutions.

As with the data from the *Shenbao*, while network analysis can identify more significant networks based on industrial activity, these networks are not substantial, and they do not provide any clear connectivity for the individuals involved. In fact, network analysis is particularly useful for reconstructing the various ego-networks around individual companies, an aspect of the data extracted from the *Shenbao* that was completely lost. Although we cannot confirm that the information is as



Graph 8: Network of the “industrialists” with degree centrality above 30 (Who’s Who).

complete as it was in the official records of companies and shareholders, such as those studied by Sun Huei-min at the Ministry of Industry, it does represent a step further in understanding the economic and business ties that existed within the Shanghai business community.²⁴

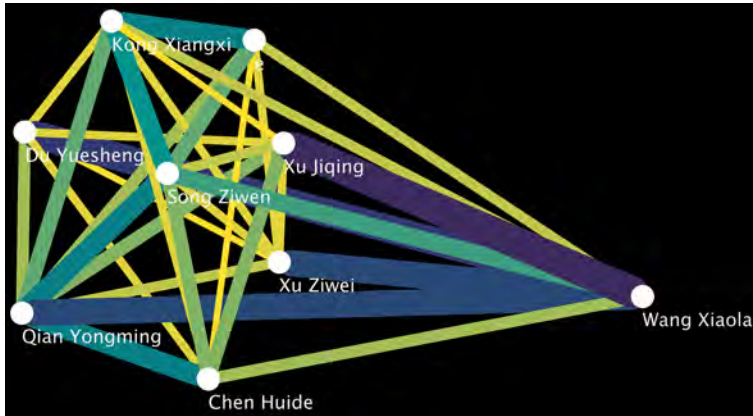
In the final stage of my exploration of the potential of network analysis for industrialists, I transitioned from affiliation networks (two-mode networks) to a one-mode network focused exclusively on individuals. Transforming the industrialist network into two one-mode networks, one for individuals and the other for institutions, provides a novel perspective on the data. The one-mode network for individuals comprises 1,175 nodes and 6,937 edges, with 43 components. I will concentrate solely on the main component, which contains 1,069 nodes and 6,852 edges. In this network, the prominence of nodes varies based on the centrality measures we examined but the same group of individuals consistently tops each list. The four individuals who occupy the most prominent positions according to betweenness centrality, in order of importance, are Wang Xiaolai, Qian Yongming, Du Yuesheng, and Xu Jiqing. In the one-mode network, Wang Xiaolai ranks higher than Du Yuesheng. The next significant group includes Jin Runxiang (金潤庠), Li Junpei (李錦沛), Pan Yulun (潘序倫), Liu Hongsheng (劉鴻生), Kong Xianxi (孔祥熙), Gu Kemin (顧克民), and Pan Gongzhan (潘公展). Some of these individuals were prominent in the affiliation networks, but others appear for the first time, such as Jin Runxiang 金潤庠 (industrialist), Li Jinpei 李錦沛 (architect), and Pan Xulun 潘序倫 (expert accountant).

To enhance the analysis, I selected the individuals with the highest degree centrality in three steps (greater than 50, greater than 80, greater than 100). The network with 80 degrees of centrality reveals a high concentration among a select group of twelve individuals, comprising a mix of political figures and businessmen (Wang Xiaolai, Qian Yongming, Du Yuesheng, Xu Jiqing, Jin Runxiang, Pan Xulun, Kong Xiangxi, Chen Huide (陳輝德), Wang Yansong (王延松), Song Ziwen (宋子文), Sun Ke (孫科), and Chen Guangfu (陳光甫)). With the higher threshold of 100 degrees, only seven individuals remain (Wang Xiaolai, Qian Yongming, Du Yuesheng, Xu Jiqing, Pan Xulun, Kong Xiangxi, Song Ziwen). Wang Xiaolai is prominently central in this network by all measures and significantly surpasses the others. Qian Yongming is second, despite not being involved in the industry.

Through the application of network analysis to data on industrialists, I have pursued multiple objectives, one of which was to identify the most influential

24 Sun, Huei-min, "Unleashing the Power of Knowledge and Networks: Capital Raising in Shanghai's Publishing Companies (1928–1937)" in this volume.

individuals within this community. The clear conclusion, despite the use of data from two markedly different sources (a newspaper and a collection of unrelated Who's Whos), is that a small number of individuals played a pivotal role due to their extensive personal and professional networks. Comparing the two one-mode networks side by side (or merging the data into a single dataset) allows us to artificially, yet realistically, reconstruct the network of the “power elite” within the business community (Graph 9).



Graph 9: The “power elite” of Shanghai industrialists.

Conclusion

This examination of Shanghai industrialists in 1947, drawn from press sources and a collection of Who's Whos, has yielded rich insights into the dynamics of the city's industrial elite. Despite their inherent bias towards individuals of notoriety, these resources offer the most comprehensive and reliable information available. While the Who's Whos have their limitations and imbalances, it is unlikely that alternative sources could provide more extensive biographical data. In this study, we drew upon a corpus of fifty different publications. Archival sources, while more company-centric, are unlikely to offer much in terms of biographical data.

It is important to acknowledge that the industrial landscape was inhabited by a diverse set of actors, many of whom remain elusive due to the scarcity of information about less prominent or influential individuals. The focus on the “industrial elite” in Shanghai in 1947 does not imply a comprehensive understanding of this group. Within this elite, there were a limited number of “genuine” industrialists

whose economic interests were primarily focused on industrial ventures. Most were engaged in a range of activities, with industry serving as one element within a diversified portfolio. This observation is significant as it shaped the relationships within the business community and highlighted the limitations of network analysis in capturing the full complexity of the roles of industrialists.

Indeed, although the Who's Who data documented this reality, a distinctive feature of the postwar period – made more visible through the *Shenbao* – was the proliferation of state-business entities and interactions between state officials at various levels and businessmen, particularly industrialists. Industrialists evade simple analysis due not just to their minority status, but also due to their involvement in wider professional and official circles. Network analysis reveals patterns of interconnectedness at the company level, but it becomes evident that banks played a more pivotal role than industrial companies in connecting industrialists.

Despite its limitations, network analysis has proven useful in identifying dense connections between these economic actors. However, it is important to recognize that this density of relations was not primarily linked to their activity as industrialists. Three individuals – Wang Xiaolai, Qian Yongming, and Du Yuesheng – emerged as central figures due to their extensive network of relations, association with key institutions, and privileged relations with core government entities. This study challenges the common perception of Du Yuesheng as a diminished figure after the war, demonstrating instead that he maintained considerable influence. Both Wang Xiaolai and Qian Yongming owed their influence to their status within the business community, particularly in banking for Qian Yongming. All three maintained close relations.

This study demonstrates the value of network analysis methodology, in providing valuable insights into the relationships and dynamics within a complex social landscape. It also underscores the necessity of integrating various types of sources and methodologies to capture the full complexity of historical phenomena. This contributes to our understanding of Shanghai's business community and state-society relations in the final years of the nationalist regime.

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Táňa Dluhošová

Social Stability and Mobility in Taiwan Across the 1945 Divide: The Habitus of Political Elites

Introduction

Colonization often involved the collaboration and co-optation of local elites, who aided the colonizers. In the case of Taiwan during the colonial era (1895–1945), it took approximately two decades to cultivate a new generation of local elites who received a Japanese education and operated within the framework of the colonial administration, sometimes even opposing it.¹ With the conclusion of World War II, many countries and regions in East and Southeast Asia experienced a shift in their political order. Decolonization brought about rapid changes in both local political structures and state institutions, propelling new elite groups to the forefront, eager to assume leadership roles and assert their power. In Taiwan, the end of the war also marked the end of the colonial period but heralded the emergence of a new authoritarian rule under the Chinese Kuomintang party.

Studies on social elites, however, indicate a strong inclination for elites to endure through political turmoil. In Western contexts, research has addressed issues of social mobility, equality, the structure and legitimacy of economic systems, political power dynamics, and elite dominance in society. These topics have been vigorously debated among historians, sociologists, and political scientists.² Historian Walter Scheidel and economist Thomas Piketty have both

1 Lo Ming-sheng examines the emergence of Taiwanese doctors as a professional group in the context of colonial medicine. During the second half of the colonial period (1920–1945), this native class actively advocated and advanced anti-colonial politics. Lo Ming-cheng, *Doctors within Borders: Profession, Ethnicity, and Modernity in Colonial Taiwan* (University of California Press, 2002), 5–6.

2 In one of the most recent debates, *The American Historical Review* (123:3 [2019]) featured a forum that examined the question “Why Ruling Classes Fail.” The forum brought together historians specializing in the French Revolution and the Chinese medieval aristocracy. Additionally, David

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observed that the accumulation of wealth among the top echelons of society exacerbates material inequality, a trend that typically reverses only through cataclysmic, violent events.³ Gregory Clark's study on long-term social mobility spanning centuries and diverse regions similarly concludes that social status is inherited "as strongly as any biological trait."⁴ Despite the advent of free public education, efforts to curb nepotism through impartial institutions, and the rise of private companies, social mobility has not significantly increased. In light of these observations, what can be gleaned about Taiwan during periods of profound political change? What was the composition of the elites, and did any structural shifts occur within the ruling class after 1945? Did the end of colonial rule and the reestablishment of Chinese sovereignty foster greater social mobility?

Let us begin by examining how elites between 1895 and 1953 were conceptualized and categorized in Taiwan. During this period, Taiwan was initially a colony of imperial Japan and later became a retroceded territory to China, represented by the Republic of China. In both cases, it was governed by non-native groups. As a result, leading scholarly discussions on elites in Taiwan primarily focus on local native elites. These elites were typically seen as traditionally educated bureaucrats employed in state administration, often belonging to and representing the local gentry, similar to the model in China during that time.⁵ From a social perspective, this group was further divided into extended families. Contemporary scholarship highlights the significance of five prominent families, often serving as exemplars of the tumultuous history of Taiwan in the first half of the twentieth century.⁶

Graeber and David Wengrow's book, *The Dawn of Everything: A New History of Humanity* (Allen Lane, 2021), challenges the conventional understanding of the progress of Western civilization and questions the role of ruling elites in the development of large-scale societies. The authors argue that such societies could emerge and function in the absence of traditional ruling elites, shedding light on the basis of inequality.

3 Walter Scheidel, *The Great Leveler: Violence and the History of Inequality from the Stone Age to the Twenty-First Century* (Princeton: Princeton Scientific, 2017); Thomas Piketty, *Capital in the Twenty-First Century*, trans. Arthur Goldhammer (Cambridge Mass.: Harvard University Press, 2014), 572.

4 Gregory Clark, with Neil Cummins et al., *The Son Also Rises: Surnames and the History of Social Mobility* (Princeton and Oxford: Princeton University Press, 2014), 9.

5 E.g., H. J. Lamley, "Assimilation Efforts in Colonial Taiwan: The Fate of the 1914 Movement," *Monumenta Serica* 29 (1970–1971), 496–520; Cai Yuanqie 蔡淵掇, "Qing dai Taiwan de shehui lingdao jieceng (1654–1895)" 清代台灣的社會領導階層（一六八四—一八九五） (MA thesis at Graduate Institute of History, National Taiwan Normal University, 1980).

6 Their status can be traced to Qing times (pre-1895). See, for example, Johanna Meskill, *A Chinese Pioneer Family: The Lins of Wu-feng, Taiwan, 1729–1895* (Princeton: Princeton University Press, 1990 [1979]); Huang Fusan 黃富三, "The Character of Gentry Power in Qing Taiwan: A View from the Expansion of the Wealth of the Lin Family of Wufeng," *Taiwan Studies: A Journal of Transla-*

However, the changing political landscape under authoritarian rule during both the Japanese colonial period and the postwar era gave rise to new sources of economic and political prestige, which the new ruling powers bestowed upon their supporters, thereby enabling the emergence of new elite families.⁷

This study recognizes the significance of the family as a social and economic unit in Taiwanese society during the first half of the twentieth century and beyond.⁸ However, it also aims to examine a different category of elites: the political elites who served as appointed and elected members of local councils. Specifically, this study focuses on the local advisory bodies established during the Japanese colonial and postwar periods. During the Japanese colonial period, councils (協議會) were established at the village (庄), township (街), city (市), and prefecture (州) levels. Eligibility for the lower levels required high academic achievement and social reputation, while nominees for the higher levels had to meet certain tax requirements.⁹ As a result, many council members were representatives of the local gentry or new economic elites. Although these councils conferred social and political capital on their members, they did not possess executive power. In the postwar period, the councils (參議會) consisted of elected representatives, who, like their predecessors, were drawn from the ranks of the local elites. After the administrative reform in 1946, the first direct local elections for counties (縣) and cities (市) were held. The next elections took place in 1951 and 1953, a time when the Kuomintang was still in the process of full reorganization and solidifying its control. While this study primarily focuses on council members, it is worth noting that other positions, such as the headman of *hokō* (保甲) units during the Japanese period or neighborhood leaders (村里長) in the postwar period, could also be seen

tions. *Land Issues in Taiwan History* (Spring 1995): 58–88; Xu Xueji 許雪姬, *Lou tai chong qi* (vol 1): *Lin Benyuan jiazhu yu tingyuan lishi* (Xin Taipei: Xin Bei shizhengfu Wenhua ju 新北市政府文化局, 2011 reprint). For Yan family from Jilong see Evan Dawley, *Becoming Taiwanese: Ethnogenesis in a Colonial City, 1880s–1950s* (Harvard University Asia Center Press, May 2019).

7 Their status is derived from the colonial period (1895–1945). Sima Xiaoqing 司馬嘯青, *Taiwan xin wu da jiazhu* 台灣新五大家族 (Taipei: Yushan she, 2005).

8 Lee Zongrong pointed out the importance of kinship and business growth in the 1950s and 1960s. Lee, Zong-Rong, and Thijs A. Velema, “Between State Power and Familism: the Directorate Interlock Network in Taiwan throughout the Twentieth Century,” in *The Power of Corporate Networks: A Comparative and Historical Perspective*, edited by Thomas David, Gerarda Westerhuis (New York, NY: Routledge, 2014), 276–295.

9 Edward I-te Chen, “Japanese Colonialism in Korea and Formosa: A Comparison of the Systems of Political Control,” *Harvard Journal of Asiatic Studies* 30 (1970), 126–158.

as important roles because they were based on and yielded social capital, as these were elected positions.¹⁰

Taiwanese scholarship has extensively examined the relationship between political regime changes and the continuity of political elites. A notable study by Wu Naide and Chen Mingtong, published in 1997, specifically investigated the impact of the end of the war and the 2.28 Incident (1947) on local political elites.¹¹ Their research revealed that while the end of the war did not significantly affect the incumbent local political elites, the 2.28 Incident created a structural “gap” (斷層) where approximately 80% of local elites ceased serving as members of the local councils for various reasons. However, it is important to note that this observation has been subject to

10 In the local *hokō* system, each *kō* (甲), consisting of approximately ten households, was led by a headman (甲長), while each *ho* (保), composed of ten *kō*, also had its own headman (保正). The headmen were elected from among the family heads and their appointment required approval from the local police. Their responsibilities included maintaining public order, enforcing the law, taking precautions against natural disasters and bandits, collecting taxes, and managing population records. The headmen did not receive payment for their service, later, the offices employed full-time clerks to assist them in their duties. For more on *hokō* system see, Chen Ching-Chih, “The Japanese Adaptation of the Pao-Chia System in Taiwan, 1895–1945,” *The Journal of Asian Studies* 34, no. 2 (1975), 391–416. On status of headmen as local elites see, Yao Renduo 姚人多, “Zhengquan zhuan yi zhi zhilixing: Zhanhou Guomindang zhengquan dui Rizhi shidai baojia zhidu de chengxi yu zhuanhua” 政權轉移之治理性：戰後國民黨政權對日治時代保甲制度的承襲與轉化, *Taiwan shehuixue* 臺灣社會學, no. 15 (2008), 47–108. Wu Naide argues against categorizing headmen as “local elites” due to the findings from interviews and reminiscences with former headmen. These individuals did not possess exceptional education, hold prestigious occupations, and worked closely alongside the people they governed. As a result, their social standing and characteristics differed significantly from those typically associated with the term “local elites.” Wu Naide 吳乃德, “Bentu jingying de yanxu he duance: Huiying Yao Renduo” 本土菁英的延續和斷層：回應姚人多, *Taiwan shehui xue* 臺灣社會學, no. 16 (2008), 193–197.

11 The 2.28 Incident (also known as the Incident from February 28, 1947) was a widespread uprising in Taiwan against the governing authorities, with the aim of securing broader political autonomy for the Taiwanese. However, the Kuomintang regime responded with a harsh suppression of the uprising. For more detailed information about the event, refer to Tse-han Lai, Ramon H. Myers, and You Wei’s work, *A Tragic Beginning: The Taiwan Uprising of February 28, 1947* (Stanford: Stanford University Press, 1991). Regarding the aftermath of the 2.28 Incident and the discontinuance of Taiwanese political elites, the study by Wu Naide 吳乃德 and Chen Mingtong 陳明通, “Zhengquan zhuan yi he jingying liudong: Taiwan difang zhengzhi jingying de lishi xingcheng” 政權轉移和菁英流動：台灣地方政治菁英的歷史形成 in the book *Taiwan guangfu chuqi lishi* 台灣光復初期歷史 (Taipei: Zhongyang yanjiuyuan Zhongshan renwen shehui kexue yanjiusuo, 1997), delves into the historical formation of Taiwanese local political elites and their mobility during this critical period.

debate among scholars.¹² These scholars can be categorized into two groups. The first group conducted tests based on regional electoral data at lower levels to validate or challenge Wu and Chen's findings. While they acknowledged regional specificities, their overall conclusion did not dispute the general validity of the original observation.¹³ The second group focused on different types of political elites, such as local mayors or headmen of *hokō* units, rather than elected council members. Their studies produced different results, indicating that even the 1945 divide caused certain changes among the lower echelons of political powerholders. These debates highlight the complex relationship between political regime changes and the continuity of political elites in Taiwan, necessitating further investigation and analysis.

Methodologically, this study diverges from previous historical studies by adopting a different analytical perspective. Instead of solely examining individual careers and the maintenance or loss of positions during power shifts, this study employs a prosopographical approach¹⁴ and introduces the method of positional analysis to analyze political elites.¹⁵ In contrast to positional analysis, which focuses on tracking individual positions within specific fields of activity to determine upward or downward trajectories, this method investigates the distinctive composition of different groups' involvement in various fields of activity (such as business, politics, armed forces, etc.) as a proxy for their *habitus* – their portfolio

12 Lo Kuo-chu 羅國儲, "Lun zhanhou chuqi Taiwan difang zhengzhi jingying de yanxu huo duanceng: yi Taibei xian wei li" 論戰後初期台灣地方政治菁英的延續或斷層：以台北縣為例, *Guoshiguan guankan* 國史館館刊, no. 64 (2020), 111–171.

13 Lo Kuo-chu, for example, confirms the continuity of political elites after the 1945 divide in the region of Taibei county, but concludes that there is not enough data to fully confirm Wu's and Chen's observations regarding the 2.28 Incident. He observes, however, that in later local elections in the 1950s, a new group of political elites emerged. Lo Kuo-chu, "Lun zhanhou chuqi Taiwan difang zhengzhi jingying de yanxu huo duanceng."

14 One of the most famous systematic studies of common characteristics of a group of individuals was proposed by Lawrence Stone in his article "Prosopography," *Daedalus* 100, no. 1 (1971), 46–71. For the potential for Chinese studies see, Anne Gerritsen, "Prosopography and its Potential for Middle Period Research," *Journal of Song-Yuan Studies*, no. 38 (2008), 161–201. Nicholas Tackett observed the characteristics of the medieval Chinese aristocracy that enabled them to survive the upheaval in the mid-eighth century and retain a position of prominence until the last quarter of the ninth century. Tackett, *The Destruction of the Medieval Chinese Aristocracy* (Cambridge, MA: Harvard University Asia Center, 2014). Scholars discussing the question on social mobility are also to certain extent dealing with group characteristics (especially the gentry group), like Cameron Campbell and James Lee, "Kin Networks, Marriage, and Social Mobility in Late Imperial China," *Social Science History* 32, no. 2 (2008), 175–214; Qin Jiang and James Kai-sing Kung, "Social Mobility in Late Imperial China: Reconsidering the 'Ladder of Success' Hypothesis," *Modern China* 45, no. 5 (2021), 628–661.

15 Ursula Hoffman-Lange, "Methods of Elite Identification," in *The Palgrave Handbook of Political Elites*, edited by Heinrich Best and John Higley, 80–83 (London: Palgrave Macmillan, 2018).

of prestige. Drawing on Bourdieu's concept of *habitus*, this study considers it as the combination of an individual's dispositions that enable them to attain positions and recognition within a particular field. The hypothesis of this study is that these structural changes will be manifested in the portfolios of prestige held by families and elite groups, including political elites. In other words, these portfolios will illustrate the sources from which elite groups derive their prestige.¹⁶ By employing this methodological approach, this study aims to shed light on the relationship between structural changes and the portfolios of prestige, providing insights into the dynamics of elite groups and their sources of recognition and authority.

This study aims to provide a descriptive analysis of the structure of local political elites, specifically council members, in prewar and postwar Taiwan. It will approach these elites as two distinct groups in two time periods to observe their structural similarities or differences. The framework for describing these groups is inspired by Liao Daqi's study on local political leaders.¹⁷ Liao conducted a comparative analysis of council members during the initial stages of Taiwan's democratization in 1993 and after the first transition of power in 2001. By examining factors such as age at entry into politics, gender, education, employment background, regional mobility, and family background, Liao was able to depict the structural development of this group.¹⁸ Building upon Liao's insights, this study will utilize similar

16 The methodology employed in this study was previously described in Dluhošová's article titled "Marital Networks and Portfolios of Prestige: Digital Humanities Perspectives on the Study of Taiwanese Elites," *The European Journal of East Asian Studies*, no. 19 (2020), 124–160. The study utilized data from the TBIO database (<http://tbio.orient.cas.cz/>) to explore various fields of social activity and the associated types of prestige among Taiwanese elite families. It highlights that prestige derived from politics and private business appears to be the dominant element, often accompanied by prestige from public administration. Additionally, elite members from all types of families were also active in voluntary associations. The research reveals that involvement in politics, private business, and voluntary associations was more common in families that had stronger connections in the network, making them more desirable for marriage, particularly characteristic of old families. Furthermore, cultural and artistic involvement, mainly represented by poetry associations, was prominent in families with more active marriage networks, particularly among old families. Interestingly, the new families that rose to prominence in the postwar period had limited academic and cultural capital. Compared to old families, their prestige portfolio was less diverse and heavily leaned towards economic capital. These trends challenge the current categorization of Taiwanese elites and suggest permeable boundaries between existing categories.

17 Liao Daqi 廖達琪, "Taiwan difang zhengzhi bianqian chutan: Mingguo 82 nian yu 90 nian difang jingying beijing ji guandian zhi bijiao" 台灣地方政治變遷初探：民國82年與90年地方菁英背景及觀點之比較, *Taiwan zhengzhi xuekan* 台灣政治學刊, no. 6 (2002), 184–240.

18 Among the major observations, it was found that local politicians are becoming increasingly diverse in terms of their political affiliation, regional mobility, ethnic background, and gender representation. While the previous generation of local politicians primarily came from local administration and political circles, the new generation of politicians emerged from local civic move-

characterizations as a foundation for describing the dataset and as a launching pad for subsequent analytical steps. By adopting this approach, we can gain a better understanding of the composition and dynamics of local political elites in Taiwan during the specified time periods.

In addition to examining categories such as age, gender, educational background, and regional mobility, which Liao Daqi utilized, this study will take a more comprehensive approach. It will delve into the politicians' portfolios of prestige and compare them with the *habitus* of their fathers, siblings, and children, resulting in more nuanced and complex case studies. By tracing the portfolios of prestige and analyzing the intergenerational patterns within families, this study aims to identify the potential dispositions for social mobility and the stability of status among political elites. Furthermore, the study will explore the ability of these elites to form marital connections with respected families, often from the gentry class, which serves as an additional proxy for an individual's social status. To investigate this aspect, a marital network of council members will be created and analyzed. These three lines of inquiry will reveal that despite the apparent disruptions caused by the 1945 divide, there was a certain level of political inertia in terms of the *habitus* of local Taiwanese political elites. This suggests that certain patterns and structures persisted within the political system despite significant changes on the surface.

Methods and Data

The study adopts a quantitative approach, utilizing the Taiwan Biographical Ontology (TBIO) as its primary data source. TBIO is a biographical database that currently houses information on approximately 30,000 individuals, primarily covering the Japanese colonial period (1895–1945) and, to a lesser extent, the postwar period (1945–). The database contains data on education, employment, and family relationships, providing valuable contextual information. Although the dataset may not have complete information on named and elected council members, it offers a wealth of contextual details that can enhance the analysis. The database draws extensively from the biographical database of Yang Chien-cheng, which focuses on Taiwanese gentry.

The dataset used in this study comprises information on 220 local councils from the Japanese period, encompassing a total of 2,816 council members. The

ments. This shift in recruitment sources reflects a changing landscape in the political arena, where a broader spectrum of individuals with different backgrounds and affiliations are participating in local politics. Liao Daqi, "Taiwan difang zhengzhi bianqian chutan."

timeframe of the data ranges from 1897 to 1945. Additionally, there are 22 postwar councils included in the dataset, with a total of 6,117 members. The postwar data covers the period from 1946 to 1953. It is important to note that the database does not provide complete information for all individuals. Furthermore, in the analysis, it is necessary to differentiate between the number of individual council members and the number of times they were elected (instances of election), as some individuals may have been elected multiple times. In terms of regional distribution, the datasets contain more information on central and southern Taiwan, while the representation of the northern, eastern, and offshore regions is limited. Nonetheless, the distribution pattern is similar in both datasets (see Table 1 for more details).

Table 1: Regional distribution of the local councils in the dataset.

	Japanese colonial period (no. of councils)	%	Postwar period (no. of councils)	%
Northern Taiwan	700	22%	243	28%
Central Taiwan	1,244	39%	314	36%
Southern Taiwan	1,117	35%	289	34%
Eastern Taiwan	107	3%	0	0
Offshore	24	1%	16	2%
Total	3,197		827	

As for biographical information, TBIO includes mainly information on elites of Taiwanese origin. Therefore, there is nearly no information on elites who came to Taiwan together with the KMT government after 1945, and especially in 1949. This data bias will hopefully be remedied in the future.

Analysis

In this section, I examine the two groups of politicians, those from the Japanese colonial period and the postwar period, in terms of age, gender, educational background, and regional mobility. I also added aspects of their unique activities in different fields to determine their habitus. The findings will be compared to the habitus of their parents, siblings, and children to uncover the impact of individuals' council membership on their families' status trajectories (social mobility). Two case studies will shed light on social mobility and the ability to retain individual and family status, viewed through the prism of council members' marital network and their interactions with the local gentry (i.e., the old prominent families).

1 Age of Getting Function

The practice of appointing council members during the Japanese colonial period did not adhere to a concrete schedule. Members were appointed continually; just from 1935, a certain number of local politicians could have been elected. To create comparable samples, I grouped findings in five-year periods. Except for the 1940–1944 period, the size varies from 83 to 195 people for each five-year period/election. To address the relatively uneven distribution of data points, data in Table 2 represent percentages for each time slot.

Table 2: Age distribution of council members at the time of their election/appointment.

Years/age	20–29	30–39	40–49	50–59	60–	No. of people
1920–1924	25.13	48.21	23.07	2.56	1.02	195
1925–1929	20.51	44.87	28.2	5.12	1.28	78
1930–1934	18.1	45.9	28.6	6.58	0.82	122
1935–1939	8.43	44.57	37.34	9.63	0	83
1940–1944	0	33.33	50	12.5	4.1	24
1946	1.6	19.51	46.34	24.39	8.13	123
1951	8.33	53.33	28.33	28.33	10	120
1953	0	2.67	43.75	46.42	7.14	112
1997	1.1	12.1	39.5	30.1	16.4	n/k
2001	1	10.2	40.7	31.8	16.3	n/k

Data represent the percentage for each period. The shades emphasize the dominant age cohort for each period. The figures for the years 1997 and 2001 are quoted from Liao Daqi for reference. Liao Daqi, “Taiwan difang zhengzhi bianqian chutan.”

During the Japanese colonial period, there was a consistent recruitment of council members from the 30–39 age group. This suggests that the Japanese colonial government recognized the potential for cooperation and influence among the younger generation, who had received a Japanese education. Simultaneously, for the younger generation, participating in local councils presented an opportunity for upward social mobility. The cohort for the WWII period (1940–1945) is relatively small due to data limitations and is not considered in this analysis.¹⁹ However, a shift to the 40–49 age bracket in the postwar period aligns with the observations made by Wu-Chen and other scholars regarding the continuity of local elites across

¹⁹ The biographical information used for this study is primarily sourced from biographical dictionaries published by the colonial government. However, it should be noted that these dictionaries do not cover the last period of individuals’ lives after the war.

the 1945 divide.²⁰ The sudden change in average age in the 1951 election further supports the notion that Taiwanese local elites withdrew from political life, allowing a new group of politicians to emerge.²¹ Following the establishment of the KMT government in Taiwan after 1949, mainlanders occupied many positions, potentially resulting in the recruitment of older individuals for the later postwar periods. Liao's study also observed a significant decrease in average age during the late 1980s when the democratization process began, indicating the entry of a younger generation into the political scene. These shifts in average age reflect structural changes in Taiwanese society and its political landscape.

2 Gender

Figure 1 illustrates the gender distribution among council members. As expected, there were no women serving as council members during the Japanese colonial period. However, with the advent of the first local elections in 1946, the situation began to change. The TBIO database records the first elected woman as Xie E (謝娥) (1918–1995), a pioneering female surgeon who received her education in Japan. Xie E was imprisoned on allegations of conspiring against the Japanese, and after the war, she became a member of the Kuomintang party, holding various significant positions within women's organizations. In 1946, she was elected as the first female council member in the Taipei City Council. Following the 2.28 Incident, she emigrated to the USA, where she embarked on a new career as a medical doctor. The trajectory of Xie E's career sheds light on the transition between the 1946 and 1951 elections, when a new generation of local politicians emerged. According to TBIO, there were ten women elected to local councils in 1950, and this number increased to twenty-one in 1951. While this upward trend is apparent in the sample, it is important to note the persistent gender imbalance in terms of male and female participation. In a future study, I intend to focus on the experiences and life trajectories of female councilors.

3 Educational Background

Education played a crucial role in shaping both professional and political careers during the first half of the twentieth century. In this era, the accessibility of education

²⁰ Wu Naide and Chen Míngtong, “Zhengquan zhuan yi he jingying liudong.”

²¹ Lo Kuo-chu, *Lun zhanhou chuqi Taiwan difang zhengzhi jingying de yanxu huo duanceng.*

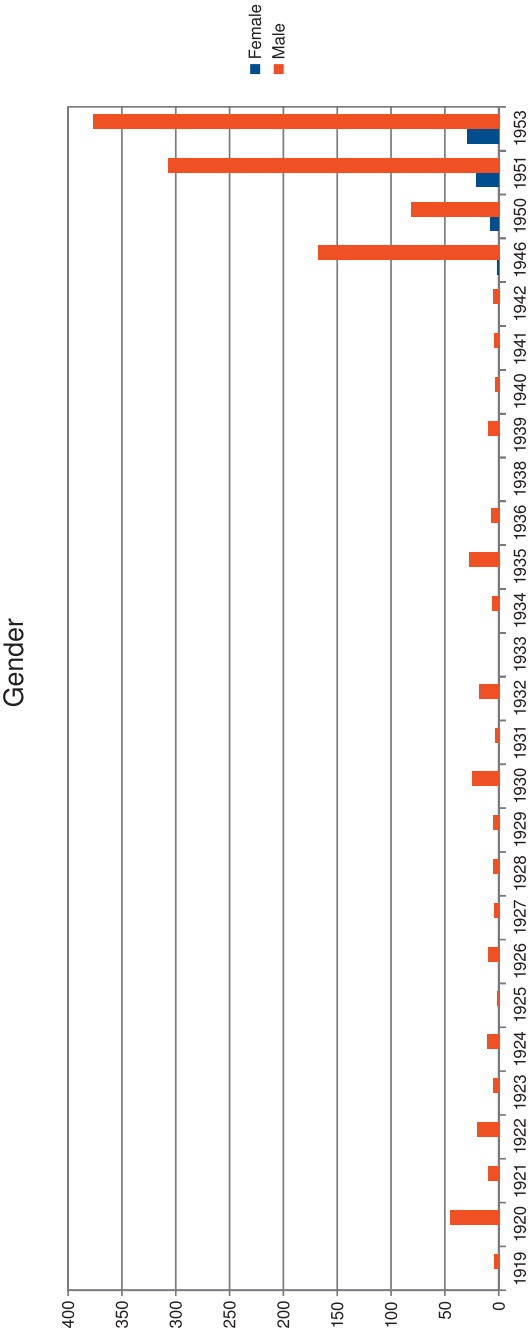


Figure 1: The gender distribution of council members in TBIO starting from 1919 (collapsing the earlier years of analysis without any readings).

underwent various transformations. Initially, traditional education dominated at the turn of the nineteenth century. However, in the early twentieth century, modern education emerged, including common schools (公學校) that prepared students for jobs as clerks or interpreters. Graduates of these schools could further their education in high schools, which offered higher education in two professions: teaching and medicine.²²

To categorize the schools, I classified them into traditional,²³ primary, secondary,²⁴ higher, and university education.²⁵ Notably, higher education, especially from the Japanese colonial period, is treated separately from university education, as it featured shorter curricula compared to Japan and had been the most accessible type of education in Taiwan. Among the schools from both periods, I listed normal schools (師範學校), general colleges (高等普通學校), vocational schools (工業學校),²⁶ medical schools (醫學專門學校),²⁷ and state Japanese language schools (國語學校) in various Taiwanese cities, all contributing to preparing new generations of

22 Patricia E. Tsurumi, *Japanese Colonial Education in Taiwan, 1895–1945* (Cambridge Mass.: Harvard University Press, 1977), 22.

23 For the purpose of this study, traditional education refers to the educational background obtained at (Chinese) private schools, known as shobō (書房) during the Japanese period, and academies that emphasized premodern education with a focus on the Confucian classics. Additionally, the TBIO database includes records of individuals who held academic titles earned through state exams, and these cases are also categorized within the traditional education category.

24 Secondary education in Taiwan was introduced relatively late. The first secondary school offering vocational subjects in agriculture and commerce was established in Taizhong in 1915, with financial support from Taiwanese local elites. This initiative aimed to provide Taiwanese common school graduates with opportunities to pursue higher-ranking jobs in companies and administration. Tsurumi, *Japanese Colonial Education in Taiwan*, 69.

25 Taihoku Imperial University was established in 1928 in Taiwan. Prior to its opening, aspiring university students had to travel to Japan to pursue their degrees. The admission to certain disciplines at the university was subject to quotas, and students were required to obtain permission from the colonial government before pursuing higher education.

26 Opportunities outside of teaching and medicine were relatively limited during the early period. Some experimental stations focusing on the production of sugar and other agricultural products were established in the 1890s. Additionally, from 1902 to 1907, the Japanese Language School offered vocational classes. However, it was not until around 1915, with the increasing emphasis on infrastructural projects and agricultural development, that vocational education was introduced within the primary education level to meet the growing demand for skilled workers. Tsurumi, *Japanese Colonial Education in Taiwan*, 25.

27 The first medical center to train Taiwanese doctors was established in 1897 as an attachment to the Japanese hospital in Taipei. Subsequently, in 1899, the Taiwan Government General Medical School was opened. However, the academic standards for medical education in Taiwan were lower than those in Japan. Taiwanese medical graduates spent six years in common school, followed by one year in a preparatory course, and then four years in the regular medical course. Tsurumi, *Japanese Colonial Education in Taiwan*, 25.

professionals.²⁸ Additionally, the category “Other” encompasses language courses during both periods under examination.

Table 3: Education of council members.

Types of Education/ Period	Japanese period, no. of instances	Japanese period (%)	Postwar period, no. of instances	Postwar period (%)
University Education	66	22%	127	9%
Higher Education	113	37%	580	40%
Secondary Education	63	21%	130	9%
Primary Education	55	18%	452	30%
Traditional Education	5	2%	139	10%
Other Education	3	0%	35	2%

The findings reveal that a significant portion of the local political elites were graduates from institutions of higher education in Taiwan (37% during the Japanese period).²⁹ As a result, many members of the regional political elites did not have exposure to the cosmopolitan center during their studies and instead benefited from a colonial education specifically developed for the periphery of the empire. This pattern persisted even in the postwar period, as most council members who enjoyed higher education were educated during the war period (40%).

Contrary to the generally acknowledged limited access to university education in Taiwan during the Japanese colonial period, the local politicians as a specific group still displayed a different pattern. A significant proportion of council members (21%) in the Japanese colonial period had received a university education, often in Japan. Six politicians studied at the medical school of the Imperial University in Taipei, one studied at Columbia University, and fifty-nine council members studied in Japan. This finding indicates that a) these members came from more privileged families who could afford to send their children abroad, and b) these local political elites were highly educated, benefiting from a cosmopolitan educational experience. Council members primarily held degrees in medicine (36%) and law (36%), with others in business (12%), politics and economics (12%), engineering (2%), humanities (2%), and education (2%). The existence of council members

²⁸ The first three schools opened in Taipei, Taichung, and Tainan in 1899 but were closed after 1902, when the first Japanese Language School was opened in Taipei. Tsurumi, *Japanese Colonial Education in Taiwan*, 22–23.

²⁹ The table provides an overview of the education of council members, accompanied by the number of instances to highlight the sample's significance. It's worth noting that there is a disparity in the number of instances of education events between the two samples in the dataset. As a result, the percentage within each sample is discussed for clarity.

with degrees in disciplines like law and economics challenges previous claims that Taiwanese generally did not have access to such fields of study during the colonial period.³⁰ It suggests that these local political elites constituted a special social group with access to knowledge that enabled them to excel in the field of politics. Additionally, the fact that many council members were appointed rather than elected demonstrates that the colonial administration acknowledged the expertise of these graduates, even though their chosen subjects of study were not widely supported.

In the postwar group, there are two visible tendencies. While there is a considerable decrease in secondary and university education in comparison to the Japanese group (by 12% and 13% respectively) and an increase in primary and traditional education (by 12% and 8% respectively). These structural changes may illustrate an influx of a new group of politicians who did not share the same educational pattern as the previous politicians, i.e., the structural “gap” mentioned above.

The dataset shows that all council members with university education (except for one who studied in Taiwan) pursued their studies abroad: two in Germany, two in the USA, one in Hong Kong, and 121 in Japan. Studying abroad served as a status marker, and most of the politicians in the database came from the gentry class, which could afford to send their sons for education abroad. Another contributing factor was that certain disciplines, apart from medicine, were not encouraged to be studied in Taiwan itself. Regarding their fields of study, the majority graduated in law (36%), followed by economics and politics (22%), medicine (18%), business (10%), humanities (5%), and education, engineering, and science (1% each). Law graduates and experts in politics and economics maintained a similar proportion as before, while there was a decrease in the representation of medical graduates among elected local council members in the postwar period. Notably, both groups lacked graduates in sciences, technical engineering, and humanities. The employment of lawyers and economists can be attributed to the instability of the postwar era, during which societies were being rebuilt and new legal frameworks were introduced. These graduates likely benefited from their expertise in navigating the evolving political and economic landscape.

4 Regional Inertia

Given the local nature of the councils, it is expected that their members would primarily come from the same local regions. However, the available data for this analysis is limited, mainly focusing on Taiwanese local elites in TBIO. During the

30 Patricia E. Tsurumi, *Japanese Colonial Education*, 89.

Japanese colonial period, most local political leaders were appointed and elected within their home regions (93%). Even if a candidate was elected to a higher administrative unit, they would remain in the same region (100%). In the postwar period, the data is somewhat scattered, but there is comprehensive data available for the Council of Zhanghua County. In this case, all 490 council members were born either in Zhanghua County or Zhanghua City. When elected to a higher administrative level, they predominantly moved to the nearest regional city. This observation supports Liao Dagi's finding that local political elites tend to be elected in their home regions. However, it appears that regional mobility slightly increased over time.

5 Portfolios of Prestige

Previously, researchers have primarily examined the individual positions held by local politicians. In contrast, my focus was on societal sectors of the two groups of politicians, and I categorized organizations accordingly in the TBIO to map the politicians' involvement in different fields of activity (see Table 4). The distribution of these involvements serves as a proxy for their habitus. It is important to note that the count is cumulative. In this study, I treat each repeated position in each institution as one instance (e.g., re-election in a board of directors would be counted twice).

Table 4: Involvement of council members.

Fields of Activities	Japanese period (%)	Postwar period (%)
Academia Education	4	3
Armed Forces	0	0
Cultural Organization	0	0
Firefighters Station	0	0
Hokō	6	2
Mass Media	0	1
Medical Sector	3	2
Police	1	0
Politics	42	54
Private Business	23	21
Public Administration	12	7
Religious Organization	0	0
State Business	1	0
Unknown Sector	0	0
Voluntary Association	8	8
Total number of instances	20.566	3.705

The local political elites were primarily engaged in three fields of activity, combining politics, private business, and public administration, which gave rise to various forms of political, economic, and social capital. These three fields characterize the local elites as power elites in the sense described by Mills.³¹

In the Japanese colonial period, economic success in private business can be considered a precondition for a political career. The types of companies in which politicians were involved varied, but they mainly consisted of joint-stock companies in different fields of business, followed by cooperatives focusing mainly on agricultural production (livestock and food production) and infrastructural projects (like building and managing water canals and dams) encouraged by the government, and finally credit associations which acted like private banks (Table 5). These became popular in the second half of Japanese colonial rule.³² Politicians usually held positions at the top of the business hierarchy. Table 6 shows 16 most frequent positions within the business sector, representing 74% of all data.

Table 5: The council members' private businesses in the Japanese colonial period.

Type of company	Japanese terms	No. of companies	No. of involvements
Joint-stock company	株式會社	391	576
Cooperatives (agricultural and infrastructural businesses)	組合	386	542
Credit Association (Private banks)	信用組合	178	353
Total no. of instances		1.362	2.021

Table 6: The most frequent politicians positions within the business sector.

Position	Term	Japanese period (%)	Postwar period (%)
Director	理事	21	23
Director of a Bank Branch	銀行組長	14	16
Supervisor	監事	11	10
Member of a Board of Directors	董事	10	8
Director	社長	7	5

³¹ According to C. Wright Mills, the power elites encompass those in positions of authority within the political order and the military establishment, as well as individuals from the corporate elite. Elites, in any society, constitute a distinct social group that consolidates wealth, power, and prestige, while simultaneously embodying specific ways of life in which symbolic prestige and actual power are interconnected. See C. Wright Mills, *The Power Elite* (New York: Oxford University Press, 2000 [1956]).

³² Huang, Fu-san, "The Character of Gentry Power in Qing Taiwan."

Table 6 (continued)

Position	Term	Japanese period (%)	Postwar period (%)
Advisor	評論員	7	5
Managing Director	常務理事	6	8
Boss	老闆	6	6
Member of a Supervisory Board	監察委員	4	3
Secretary	書記	3	3
Managing Director	常務董事	3	4
Director of a Cooperative	組合長	2	3
Board member	委員	2	0
Representative (of a company/branch)	代表	2	2
Secretary	主事	1	3
Member of a Board of Trustees	評議員	0	2
Total number of instances		3.208	513

The nature of these positions indicates that they were less managerial (e.g., director 社長, boss 老闆, director of a cooperative 組合長) and more participative (e.g., member of a board of directors 董事, member of the supervisory board 監察委員) with financial involvement. The overlaps in the board participation will be further explored in a network analysis in the future.³³ Only a minimal number of politicians were employees in these companies in lower administrative positions (e.g., at the positions of representatives or secretaries).

Many politicians were involved in the public administrative sector. The difference between the two sectors is understood in that the politician was elected or named (in the case of the Japanese colonial period) based on their social and political capital to represent certain groups in local councils. These positions were not paid and did not involve any concrete tasks. Involvement in the public administrative sector could have been either paid (at a lower level) or representative but performing certain administrative tasks (e.g., information gathering for the state).

The involvement of politicians in the public administrative sector (here rather service than employment) was quite diverse, encompassing roles in lower and middle-level administrative organizations such as village and town halls (役場). In these positions, politicians served as heads (長), secretaries (書記), and assistants (助手 or 助役) (See Tables 7 and 8). Additionally, during the Japanese colonial period, local political elites held roles in various committees appointed by the colonial administration. These prestigious appointments aimed at conducting land surveys, tax collection (e.g., Committee for the Tax Survey 得稅調查委員會), infrastructure mainte-

³³ I would like to thank Christian Henriot for pointing out this observation.

nance (e.g., Committee for Agriculture and Storage 農業倉庫委員會), and policy implementation (e.g., the Committee for Education 教化委員會). These bodies operated at various administrative levels and were instrumental in mapping and controlling various aspects of people's lives, as well as building a strong bureaucratic infrastructure to establish the colonial state's authority. These positions can be seen as a way to co-opt local elites and ensure a smooth transition of power during the early years of the colony.³⁴ Among the registered positions of political elites within the public administration sector in TBIO, about one-third were members of committees, indicating the significant importance of these roles. The order in which individuals assumed these positions is noteworthy. Preliminary evidence suggests that individuals with higher social and economic prestige were initially invited to become members of such committees in the public administration and only later took on roles as local council members, suggesting that economic and social prestige was a precondition, but the administrative positions generated new prestige leading to political capital. The involvement in these committees was more dominant until the 1920s when the state was still consolidating its power. However, since the 1930s, Taiwanese politicians were more engaged in voluntary associations, which were often organized by the authorities.

Table 7: Regional distribution of identified employment in public administration during the Japanese colonial period.

Level	Japanese term	No. of organizations	No. of involvements	No. of organizations per level	No. of involvements per level
Village	庄	61	80	191	357
Township	街	57	84		
Town	市	73	193		
District (1895–1901)	縣	11	13	200	229
District (1901–1920)	區	161	183		
District (1920–1945)	郡	28	33		
Prefecture (1901–1920)	廳	21	79	83	166
Prefecture (1920–1945)	州	62	87		
Central level		38	102	38	102
Total no. of employments		996		996	

34 Wu, Wenxing 吳文星, “Rizhi shiqi Taiwan difang shizheng yu xin lingdao jiecheng zhi xingcheng” 日治時期臺灣地方施政與新領導階層之形成, *Taiwanxue yanjiu* 臺灣學研究, no. 24 (2019), 25.

Table 8: The most frequent positions of politicians in the public administration during the Japanese colonial period.

Position	Original term	No. of instances
Member of a committee	委員	219
District leader	區長	107
Temporary member of a committee	臨時委員	106
Member of an assembly	會員	54
Mayor of a village	村長	48
Councilor	參事	44
Secretary	書記	30
<u>Mayor of a village</u> [1]	庄長	32
Clerk	助手(助理)	21
Employee	雇員	21
Translator	譯員	18
Reviewer	評論員	17
Assistant	助役	12
Director (of a committee)	理事	10
Total no. of positions		996

[1] The position of a village mayor in Taiwan is denoted by two terms: 村長 (*cunzhang*) and 庄長 (*shōchō*). The distinction arises from the administrative division and terminologies employed by the ruling regimes. In the Japanese colonial period, the term *shō* 庄 was utilized to designate a village unit, while the Republic of China used *cun* 村 for the same administrative purpose.

The specific character of voluntary associations during the Japanese colonial period is noteworthy. Approximately 8% of all politicians were involved in such associations (see Table 4). As Xu Xueji highlights, many of these associations served to promote the ideological message of the colonial government, particularly after 1937.³⁵ One such example is the Kōmin Hōkōkai (皇民奉公會), which continues to be a subject of discussion among scholars. Some researchers point out the de facto involuntary nature of these so-called “voluntary organizations,” as their participation was often influenced by various social and political pressures.³⁶ These associations were more prevalent during the Japanese colonial period and experienced a considerable decline in the postwar era, but it was not reflected in the postwar

35 Xu Xueji 許雪姬, “Huangmin feng gong hui de yanjiu: Yi Lin Xiantang de canyu weili” 皇民奉公會的研究—以林獻堂的參與為例, *Jindai shi yanjiusuo jikan* 近代史研究所集刊, no. 31 (1999): 167–211.

36 Among other organizations during that period were the Association of Like-Minded Individuals (同風會), established in 1925, and the Promotion Association (振興會), both advocating for cultural and governmental regulations. Additionally, professional organizations like local branches of the Farmers’ Association (農會) and the Chamber of Commerce (商會) were also prominent.

politicians' portfolios of prestige, as they shared similar *habitus* to the prewar politicians.

Another pathway to climb the societal ladder was through involvement in *hokō* units and their militia. As mentioned earlier, the *hokō* system comprised appointed local headsmen who served as both guards of public order and administrators.³⁷ This system represented a field situated between the realms of police, public administration, and politics at the lowest administrative level. The combination of these roles allowed individuals to gain local support and recognition from authorities for their political positions. This intermediate field provided opportunities for individuals of modest backgrounds to rise in social standing and venture into the world of politics and private business. Therefore, participation in *hokō* units was common among individuals with lower social status, and we do not find any members of the old Taiwanese families holding such positions in TBIO. These were relatively lower positions compared to those in various committees within the public administration sector. The system served as a stepping stone for individuals who were not typically involved in private business but might have had professions such as teachers or clerks.

In the postwar period, there were some changes in the portfolios of prestige among local politicians. While the three power fields – politics, public administration, and business – remained significant, their relative importance shifted. Notably, there was a remarkable increase in political involvement, indicating the emergence of professional politicians. Out of the 308 postwar politicians in TBIO, 137 had served during both periods, explaining the persistence of their *habitus* across the 1945 divide. Additionally, many postwar politicians were associated with Japanese-era companies, which formed a substantial portion of their involvement in the business sector (Table 6). Out of a total of 770 involvements in 574 private companies, 616 occurred during the Japanese era. While economic success still contributed to political success, it appeared to play a diminished role for the newly established politicians. Most of those wielding economic power had already established themselves as businessmen in the previous era, suggesting the persisting legacy of the colonial period and continuity in local political personnel.

The involvement of local politicians in the public administration sector experienced a significant decrease. As with the private business sector, a considerable number of involvements in this field occurred in the previous era (applicable to 91 politicians who served in the local council across the 1945 divide). This indicates a growing separation between the field of political power and public administration.

37 Chen Ching-Chih, "The Japanese Adaptation of the Pao-Chia System in Taiwan, 1895–1945," 403–406.

It is crucial to acknowledge that Taiwanese individuals aspiring to administrative positions faced significant obstacles in the postwar period. The incoming mainlanders cultivated a certain suspicion towards those who had served under the Japanese and favored their own countrymen. Moreover, new language policies made Mandarin Chinese the obligatory administrative language in late 1946, which severely limited the prospects of local aspirants. These social and political upheavals disrupted the strong symbiosis between the fields of politics, public administration, and private business that had characterized the *habitus* of Japanese-era politicians. Consequently, the postwar elites predominantly derived their prestige from politics, giving rise to a new type of politician. This observation aligns with scholars who have concluded that the exclusion of traditional local Taiwanese elites (whose prestige stemmed from business, politics, and public administration) from politics in the postwar era created space for the emergence of a new type of elite.³⁸

To conclude, the local political elites can be characterized by their strong involvement in the fields of politics, public administration, and private business. However, it is interesting to note that they had minimal engagement in fields such as education and medicine, despite the majority being graduates of high schools with specializations in these areas in Taiwan. Typically, professions like teaching and medicine are associated with high social capital, but local politics seemed to attract mainly local businessmen and public administrators. Additionally, the local political elites showed little connection to cultural organizations, like poetry associations, which were more typical for the gentry class or progressive intellectuals. Moreover, their association with mass media appeared to be limited, likely reserved for progressive intellectuals or writers who primarily operated in this domain since the 1920s. In summary, the local political elites exhibited specific patterns of involvement, emphasizing politics, public administration, and business, while showing limited interest in certain fields like education, medicine, cultural organizations, and mass media. This unique composition sheds light on the distinct characteristics of this group within Taiwanese society during the periods under study.³⁹

³⁸ Wu Naide and Chen Mingtong, “Zhengquan zhuanyi he jingying liudong”; Lo Kuo-chu, *Lun zhanhou chuqi Taiwan difang zhengzhi jingying de yanxue huo duanceng*.”

³⁹ Here I refer to my unpublished research on professionalization of Taiwanese literature, presented at EATS Annual Conference, “Taiwan Studies in Twenty Years: Retrospect, Prospect” (SOAS, London, June 26–28, 2023).

6 Social Mobility Across Generations

Social mobility involves the movement of individuals, families, or groups across different social strata. Typically, scholars compare an individual's position or occupation with that of their father to assess such movements. As TBIO lacks categorization of positions for different professions, this analysis compares the proportions of parents' involvement in various types of activities, representing their *habitus*. Additionally, the study considers the situations of siblings, particularly younger sons and children, hypothesizing that they may have experienced less pressure and could have become involved in activities outside the fields of power.

Table 9: Involvement of fathers, siblings, and children of politicians in different fields of activity.

	Father (%)	Politicians (%)	Siblings (%)	Children (%)
Academia Education	7	4	3	4
Armed Forces	1		1	1
Cultural Organization	1		5	4
Hokō	3	6	1	
Medical Sector	1	3	3	2
Mass Media			2	3
Police	1	1	1	2
Politics	26	42	28	25
Private Business	25	23	29	35
Public Administration	18	12	11	8
Religious Organization				
State Business	1	1	1	1
Voluntary Association	17	8	16	15

Table 9 examines the evolution of prestige portfolios among politicians over three generations during the Japanese colonial period. Just like the politicians themselves, their fathers also belonged to the power elites and relied on the fields of politics, private business, and public administration to establish their social status. Comparatively, parents tended to focus more on private business, while the other two fields played secondary roles. Additionally, parents were more actively involved in voluntary associations, mainly due to the expectations imposed by the Japanese colonial authorities during that period.

Even though quite a considerable number of Taiwanese local elites were trained in fields such as medicine, which could open a path to a professional career, neither the generation of fathers nor politicians usually worked in their professions. In other words, they did not become professional elites. The situation slightly differs in the groups of siblings and children. As remarked elsewhere, the professional

careers of teachers were typically a springboard for social mobility and often led to careers in politics or public administration, and eventually private business.⁴⁰

Siblings displayed a distinct pattern. It is important to note that the sample size for siblings is smaller compared to politicians,⁴¹ which means that the conclusions may be subject to change with more data. Table 9 shows that the most common fields for brothers of politicians were local politics, private business, public administration (mainly in committees and higher levels of the administration during the Japanese period), and voluntary organizations. On the other hand, the portfolios of the siblings, much like the children of politicians, were more diverse. They were not limited to the three power fields like their fathers or politician-brothers. Instead, they were slightly more interested in pursuing professions such as teaching and medicine and engaged in mass media, a field more closely associated with progressive intellectuals and writers. This suggests that the siblings and children experienced less pressure to follow fields conducive to social success and had more opportunities (and less pressure) to engage in leisure activities and community-oriented pursuits.

Another interesting trend is that while interest in local politics and public administration remained important across generations, its significance decreased over time. In contrast, involvement in private business increased. This suggests that the political sector could have brought certain business opportunities for the family. These processes need to be studied further in the future. While discussing social mobility and the order in which different types of prestige were typically attained, one must remember that the candidates during the Japanese colonial period were comparatively young. Entering politics may have looked like a promising path to build social status and personal networks that would later lead to business success. But the data also show that the council members usually came from families with experience in politics and public administration who were involved in business.

But involvement in politics across generations did not involve only individuals coming from comparatively lower strata hoping to rise. Many cases in Table 9 actually represent members of the so-called five prominent families (臺灣五大家族). These families are considered both by secondary scholarship and by public understanding as the core Taiwanese elites. Among these families were the Lins from Wufeng, the Lins from Banqiao, the Yan family from Jilong, the Gu family from Lugang, and the Chen family from Kaohsiung, which will be discussed in more detail below. Their family history started in the Qing dynasty, and they stayed influential until the postwar period. These families' presence in the political sphere ran through

40 Dluhošová, "Marital Networks and Portfolios of Prestige: Digital Humanities Perspectives on the Study of Taiwanese Elites."

41 The data for this analysis includes 102 children, 280 siblings, 211 fathers, and 2,704 politicians (Table 4).

at least two generations, but they were represented horizontally as well (i.e., not only the head of the family was appointed, but also brothers were involved). Let's take the Wufeng Lin family as an example. Lin Xiantang 林獻堂 (1881–1956, no. 6 in Figure 3), a representative of the upper branch of the family, was a well-known politician advocating Taiwanese political autonomy and a proponent of the modernization of Taiwanese society, and his son Lin Yunlong (林雲龍) (1907–1959) was also active in the local councils. Other members of the lower branch of the family involved in politics were, for example, Lin Zhongheng (林仲衡) (1887–1940), his brother Lin Ruiteng (林瑞騰), and their cousin Lin Youchun (林幼春) (1880–1939).⁴² In the lower branch, Lin Laiwang (林來旺) (1899–1963),⁴³ from a younger generation, Lin Hanzhong (林漢忠),⁴⁴ and Lin Yixing (林益興)⁴⁵ all served as local politicians.

Among these politically active gentry members were also the Yan and Gu families, which appear in the case study below. Among active politicians were the famous businessman Gu Xianrong (辜顯榮) (1866–1937) and his first son Gu Jiedi (辜皆的). As for the Jilong Yan family, there were Yan Yunnian (顏雲年) (1874–1923; no. 5 in Figure 3) and his son Yan Qinxian (顏欽賢) (1902–1983), or Yan Guonian (顏國年) (1886–1937, brother of Yan Yunnian; no. 1 in Figure 3) and his son Yan Canghai (顏滄海) (1902–1983). These examples illustrate that active involvement in public political life was not deemed unacceptable by the upper echelons of Taiwanese society, and politicians emerged from various generations of elite families.

7 Social Mobility and Marital Network

In the context of modernity's introduction to Taiwan during the Japanese colonial period, certain social customs displayed remarkable inertia. Among them was the

⁴² Lin Youchun, a native of Wufeng, held the position of a landlord and actively participated in the Wufeng village council. He also served as a counselor at the local credit association (霧峰信用組合) and later took on the role of director in the publishing company responsible for producing the periodical *Taiwan minbao* (台灣民報).

⁴³ Lin Laiwang, a landowner, held the position of headman in Longjing village (龍井庄) in 1926. Subsequently, he continued his service on the village council.

⁴⁴ Lin Hanzhong, a medical doctor who was elected to Taizhong city council in 1951.

⁴⁵ Lin Yixing began his career as a clerk at the village of Daping (大平庄) and was later elected to the village council. He actively participated in various local businesses, holding positions such as director at Daping Motor Company (大平汽車株式會社) and executive director at the cooperative (大平興產組合). Lin also served as the representative for the Green Fruit Cooperative for Taizhong Prefecture (台中州青果同業組合) and subsequently became a board member of its provincial headquarters (台灣青果同業組合聯合會). Additionally, he was involved in several companies in Xiamen.

practice of arranged marriages or the necessity of obtaining family approval for marital unions. Finding suitable matches for one's children served as a means of maintaining family status and securing positions within intricate family networks. From this perspective, social mobility can be examined through the lens of marrying into established elites, particularly five prominent families considered the highest echelon of Taiwanese society. In a previous article, I observed that members of these prominent families rarely intermarried directly among themselves and showed limited connections to the new economic elites. Exceptions were found in the Gu family from Lugang and the Yan family from Jilong, whose portfolios resembled those of the emerging economic elites.⁴⁶ Utilizing network analysis, I will illustrate the clusters of families and the politicians within them. Through the case studies within this network, we will explore the social stability of a prominent family and the social mobility of a merchant family achieved by marrying into two of the old elite families. This analysis will pay particular attention to the career trajectories of the grandfather and son, highlighting the path of their social mobility.

In this study, the network analysis was based on the lists of politicians from the Japanese and postwar periods obtained in the previous analysis. Using the TBIO database, family relationships were searched for these politicians, including one-step relationships such as father-son, father-daughter, husband-wife, and brother-sister, among others. This process extended to encompass all family members of the local politicians, resulting in a total of 8,447 individuals with 15,770 connections in the marital network.

To facilitate visual clarity, the network was filtered with the giant component filter and limited to connections with at least six links. The Gephi software allowed for the calculation of clusters with higher densities, highlighting closer family connections among the families.⁴⁷ To prevent the network from being fragmented into individual families, the lowest possible number of clusters was set at fifteen (as shown in Figure 2). This network analysis provides valuable insights into the interconnectedness and familial relationships among local politicians and their extended families.⁴⁸

46 Dluhošová, "Marital Networks and Portfolios of Prestige: Digital Humanities Perspectives on the Study of Taiwanese Elites."

47 M. Bastian, S. Heymann, and M. Jacomy, "Gephi: an open source software for exploring and manipulating networks," International AAAI Conference on Weblogs and Social Media, 2009.

48 The number of clusters was determined through experiments with the Gephi algorithm. Various settings were tested, and it was found that other configurations resulted in either a high number of clusters, each representing individual families, or bigger monolithic clusters, which were not suitable for the analysis. The chosen number of clusters strikes a balance, allowing for meaningful groupings of families while avoiding excessive fragmentation.

The node size, representing the betweenness centrality, indicates which nodes play a crucial role in maintaining the cohesion of the network. Interestingly, the majority of politicians are not significant in this regard, as they do not act as key connectors between otherwise dispersed clusters. However, there are exceptions among members of prominent families who exhibit higher betweenness centrality, highlighting their importance in network cohesion. The central part of the network, as illustrated in an enlarged view in Figure 3, includes a significant number of politicians highlighted in red. Notably, many of these politicians were members of prominent families.⁴⁹ For instance, Figure 3 highlights several key figures, including Yan Guonian from the Jilong Yan family, Lin Lietang (林烈堂) (1876–1947, no. 2 in Figure 2) from the Wufeng Lin family, and Lin Xiongzheng (林熊徵) (1888–1946, no. 3 in Figure 3) from the Banqiao Lin family. These individuals play significant roles in linking various clusters together, underscoring their central position in maintaining social connections within the network. As members of influential families, they hold considerable social capital and serve as vital bridges between different segments of the network.

The marital network revolves around sixty-six politicians, with forty-six having served during the Japanese period, six in both periods, and fourteen involved in the postwar councils. They are dispersed across thirteen out of fifteen clusters. The three clusters most heavily represented among politicians include cluster no. 4 of the Kaohsiung Chen (for more about the family, see below), cluster no. 12 of the Upper Branch Wufeng Lin family, and cluster no. 14 of the Jilong Yan family, each boasting ten politicians. Within the latter cluster, notable members include those from the Jilong Yan family active in the Japanese period,⁵⁰ father and son figures from the Wei family,⁵¹ and father and son from the Chen family (whom we will detail below).

However, the network can provide insights into its internal dynamics. Examining eigenvector centrality, also known as prestige score, reveals the importance of a node based on its connections to other significant nodes. When interpreting the top twenty politicians with high scores in this metric within the network, it's essential

⁴⁹ In Figures 2 and 3, it is evident that the core cluster primarily comprises old prominent families, such as the Yan family from Jilong, both branches of the Wufeng Lin family, and the Banqiao Lin family. However, interestingly, the two branches of the Wufeng Lin family do not form separate clusters but are instead linked to other families. One possible explanation for this phenomenon could be that the branches of these families operated as independent business units, leading to distinct collective decision-making processes, including marriage strategies, that were not closely aligned.

⁵⁰ Brothers Yan Guonian and Yan Yunnian, Yunnian's son Yan Qinxian 顏欽賢 (1902–1983), and Guonian's eldest son Yan Canghai 顏滄海.

⁵¹ Wei Qingde 魏清德 (1887–1964) known journalist (editor-in-chief for *Taiwan News Daily* 台灣日日新報), writer, and collector; and his son known medical doctor and professor of medicine Wei Huoyao 魏火曜 (1908–1995).



Figure 2: Extended marital networks of local political elites.

Filter: Giant component, Degree filter limit 6, modularity class: 15 clusters; node size: betweenness centrality. Detail on the central cluster with the highest concentration of political elites in clusters, politicians in red. Families in bold represent Taiwan's old families.

to consider the network's construction. It represents a marital and family network that traces family connections. Therefore, individuals with many offspring or siblings who marry into influential families will appear as important nodes with high degree scores, influencing the eigenvector centrality reading. However, this alone does not necessarily denote their personal importance.

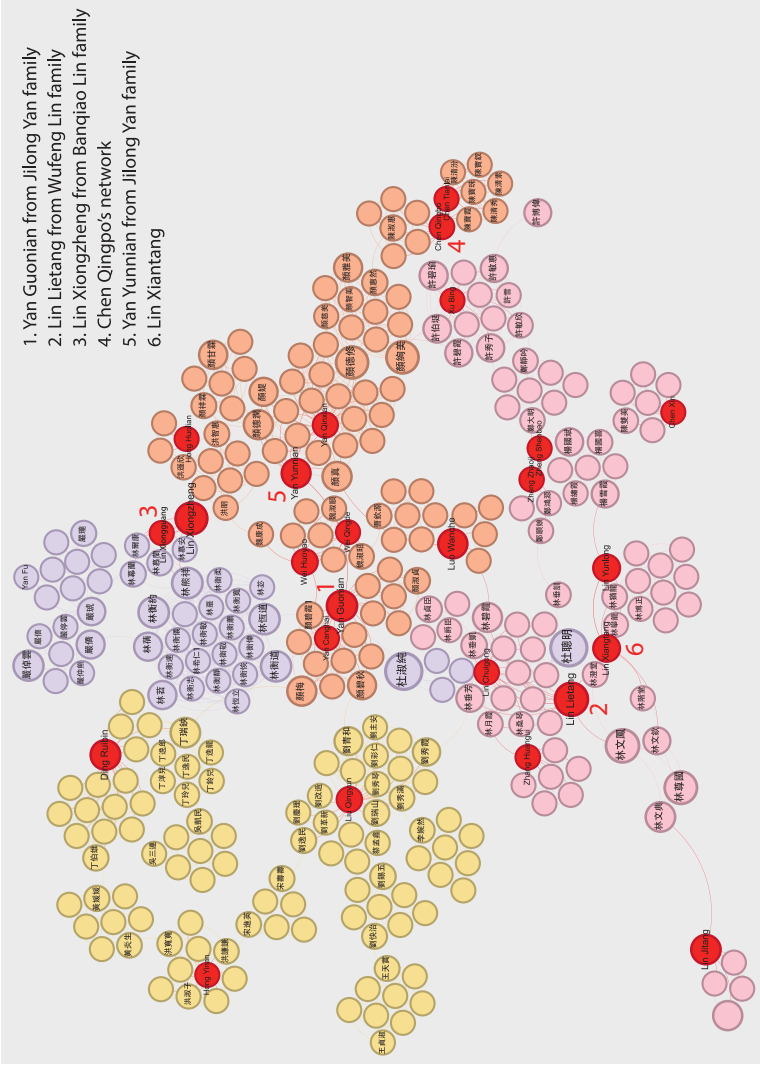


Figure 3: Detail on the central clusters with the highest concentration of the political elites. The numbers introduce politicians mentioned in the text. The graph is filtering out low-degree nodes for clarity of visualization, also showing that politicians (in red) acquired higher readings in betweenness centrality, showing their importance.

In TBIO, information about these individuals' children or siblings is sourced from contemporary biographical dictionaries such as those of the Taiwanese gentry (士紳名鑑) or *Biographies of Contemporaries in Taiwan*.⁵² These dictionaries were commissioned by the regional government during both the Japanese colonial and postwar periods. Thus, having detailed information about one's extended family is indicative of their significance within official circles at that time.

Politicians do not typically have the highest eigenvector centrality readings. Table 10 presents the politicians with the highest scores in this category. These individuals are predominantly representatives of prominent old families, most active during the Japanese colonial period. Notably, the highest positions in this table are held by the Chen family from Kaohsiung. We can use this family to examine the marital strategies of one of the so-called prominent old families.

Table 10: Top-twenty Taiwanese politicians with the highest eigenvector centrality readings.

Name	Chinese characters	Family	Politically active in (period)
Chen Qichuan	陳啓川	Kaohsiung Chen family	both
Lin Zhongheng	林仲衡	Wufeng Lin family, Lower branch	pre-1945
Chen Qifeng	陳啓峰	Kaohsiung Chen family	pre-1945
Chen Qizhen	陳啓貞	Kaohsiung Chen family	pre-1945
Chen Zhonghe	陳中和	Kaohsiung Chen family	pre-1945
Yan Qixian	顏欽賢	Jilong Yan family	both
Lin Ruiteng	林瑞騰	Wufeng Lin family, Lower branch	pre-1945
Chen Binjun	陳炳俊	network of Lugang Gu family	both
Chen Daijiang	陳大江	network of Lugang Gu family	post-1945
Gu Jiede	辜皆的	Lugang Gu family	pre-1945
Gu Xianrong	辜顯榮	Lugang Gu family	pre-1945
Liu Qingyun	劉青雲	Tainan Liu family	pre-1945
Ding Ruibin	丁瑞彬	Lugang Ding family	post-1945
Cai Wanchun	蔡萬春	Guotai Cai family (New families)	both
Yan Guonian	顏國年	Jilong Yan family	pre-1945
Yan Yunjian	顏雲年	Jilong Yan family	pre-1945
Xu Bin	許丙	related Wufeng Lin family, Upper branch	pre-1945
Hou Quancheng	侯全成	related to Peng Mingmin family	post-1945
Huang Xin	黃欣	Tainan Huang family	pre-1945
Lin Xiongcheng	林熊徵	Banqiao Lin family	pre-1945

Families in bold signify the members of the old, prominent families.

52 Zhang Zihui 章子惠編 (ed.), *Taiwan shiren zhi* 臺灣時人誌 (Taipei: Taiwan Sheng Xingzheng zhangguan gongshu 台灣省行政長官公署, 1947).

7.1 Case Study: The Strategies for Stability of an Old Prominent Family

Kaohsiung Chen family is one of five old families. Chen Zhonghe 陳中和 (1853–1930) was involved in the export of rice and sugar, and he invested in the sugar industry during the Japanese colonial era through the Taiwan Sugar Corporation (臺灣製糖株式會社). He also established the Chen Zhonghe Corporation (陳中和物產株式會社), the Wushulin Salt Company (烏樹林製鹽株式會社), and the Takao Land Development Corporation (打狗整地株式會社), among others, and served as a councilor in the first Kaohsiung Prefecture Council. Chen Zhonghe eventually became a prominent figure in Taiwan's economic landscape, making significant contributions to trade and industry. His endeavors paved the way for the development of various sectors, including sugar production and salt manufacturing. Among his ten sons, we found several politicians like Chen Qifeng (陳啓峰) (1892–1984), Chen Qichuan (陳啓川) (1899–1993), and Chen Qiqing (陳啓清) (1903–1989), both serving in both periods, and also his adoptive son Chen Qizhen (陳啓貞).

Chen Qichuan, who ranks highest among politicians in eigenvector centrality readings, had five wives, seven sons, and eight daughters. It is unsurprising that, along with his nine brothers and four sisters, he has a high degree score. Chen Qichuan attended local primary school before studying in Japan. He enrolled at Keio University, where he excelled in sports and academics. After returning to Taiwan, Chen Qichuan became involved in the family business and served in various administrative roles, including as a counselor in Kaohsiung City. His political career, however, flourished under the Nationalist government, eventually leading to his election as mayor of Kaohsiung (1960–1968). Chen Qichuan's contributions to education, including the founding of medical schools and high schools, were notable during his tenure.⁵³

Within his immediate 1-step network, there are four politicians (his brothers and father), along with other members of his immediate family and five wives from other families for which we lack further information. The 2-step network, which includes spouses and children of Chen Qichuan's siblings and spouses of his own children, reveals another politician, Li Kairong (李開榮). Li Kairong was the son of a renowned local landlord, Li Nan (李南) (1868–1935), in Wandan Township, who amassed wealth in sugar and rice production. His family was known for patronizing art and architecture. Both Li Kairong and his brother Li Kaishan (李開山) were local politicians and served as mayors in their settlements. Li Kairong married

⁵³ Chen Qichuan's legacy as a pioneer in Taiwanese politics and education continues to be recognized, as evidenced by posthumous honors conferred upon him by the Taiwanese government in the years following his passing. For more see: <https://web.archive.org/web/20211115012649/https://www.frank-chen.org.tw/啟川先生傳略>.

Chen Qiquan's sister, Chen Ying (陳英), while Li Kairong's sister, Li Kai'e (李開娥), married Chen Qiquan's brother, Chen Qiqing.

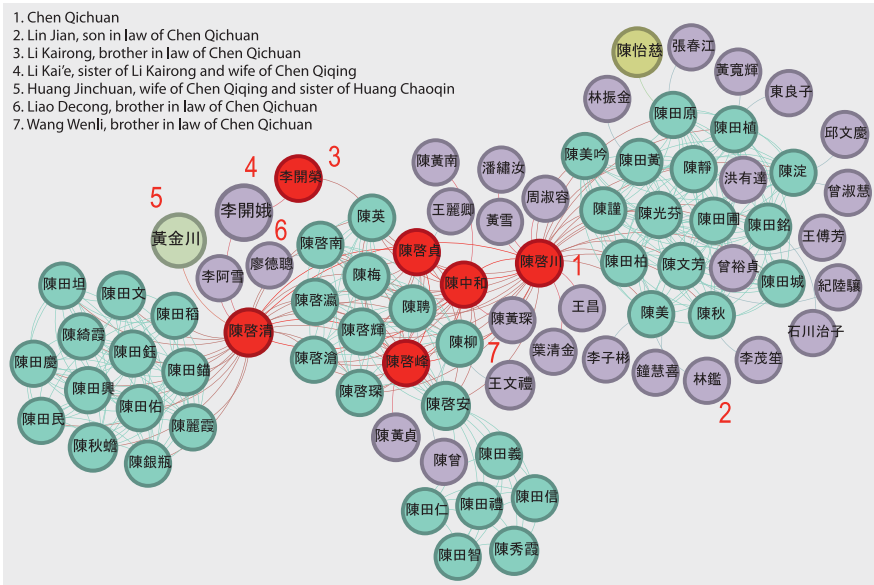


Figure 4: Two-step network of Chen Qichuan.

Nodes highlighted in red represent politicians, while colors indicate affiliation with different clusters, as detailed in Figure 2.

One of Chen Qichuan's sisters-in-law was Huang Jinchuan (黃金川), another wife of Chen Qiqing. She was a sister of the famous Taiwanese politician Huang Chaoqin (黃朝琴) (1897–1972). We will delve into Huang Jinchuan's background using her brother's biography. Huang Chaoqin's trajectory is particularly interesting. After completing his primary education, he first worked in his father's business. Only later did he pursue further studies in Japan, where he founded the important Taiwanese periodical *Taiwan min bao* (台灣民報) and became one of the leading Taiwanese intellectuals advocating for the modernization movement and the use of spoken Chinese as a written language in the early 1920s. He joined the Kuomintang (KMT) in 1925 after he moved to China and served as a diplomat for the Chinese Republic from 1928. After 1945, he was among the Taiwanese who migrated to China and returned to Taiwan during its retrocession, so-called "half-mountain

people” (半山人).⁵⁴ He became Taipei's first mayor after the war and served as the speaker of the Provincial Assembly. He also held various managerial positions in the Bank of Taiwan.

Comparing the portfolio of Chen Qichuan, the most important politician according to the eigenvector reading, to that of his brothers-in-law and son-in-law reveals the family background that attracted the Chen family (Figure 5). Private business played a significant role, as evidenced by the examples of the Li and Huang families, where wealth was inherited and expanded by the sons. Politics was also crucial, helping to grow the family's private business. Chen Qichuan and Huang Chaoqin were prominent politicians mainly in the postwar period, serving as mayors of Kaohsiung and Taipei, respectively, which gave them both political and social capital. Public administration played a less significant role among this group, while academia and education, and mass media were diversifying factors in Chen's and partly also Huang's portfolio, making these two politicians different from other members of the 2-step network. Chen Qichuan, in particular, exhibited a more diverse portfolio, which resembles those of the members of old elite families.⁵⁵

Due to the limited availability of data on many of the in-laws, drawing definitive conclusions proves challenging. However, this case study highlights that the stability and significance of an already established family were more readily secured if the family was extensive, with numerous offspring capable of forging connections with similarly affluent families. While the brothers-in-law may not have directly contributed wealth to the core family, their social status and connections played a vital role in maintaining the family's standing. Analysis of collected biographies reveals that the in-laws hailed from financially secure backgrounds, affirming that the Chen family's social stability was rooted in financial security, reinforced by political ties. Apart from Huang Chaoqin, who operated at the provincial level, all other in-laws, including the central figure, Chen Qichuan, were primarily engaged in local-level activities, aligning with the locations of their businesses. Within families like the Chens, Lis, and Huangs, elite status was demonstrated across generations through patronage efforts, such as the establishment of memorial halls, schools, or temples. These initiatives not only bolstered social capital but also contributed to the broader social stability of the elite network.

⁵⁴ For more on “half-mountain people” see Bruce Jacobs, “Taiwan ren yu Zhongguo Guomindang 1937–1945: Taiwan ‘banshan ren’ de qiyuan” 臺灣人與中國國民黨1937–1945：臺灣「半山人」的起源, *Taiwan fengwu* 臺灣風物 40,2 (1990), 17–54.

⁵⁵ Chen Qichuan consulted for *Taiwan xinmin bao* 台灣新民報 during the Japanese period. In the postwar period, he donated land and supported Medical School in Kaohsiung and Korean primary school. For the portfolios of the prominent families see Dluhošová, “Marital Networks and Portfolios of Prestige.”

Portfolios of Prestige: Chen Qichuan and his 2-step Network

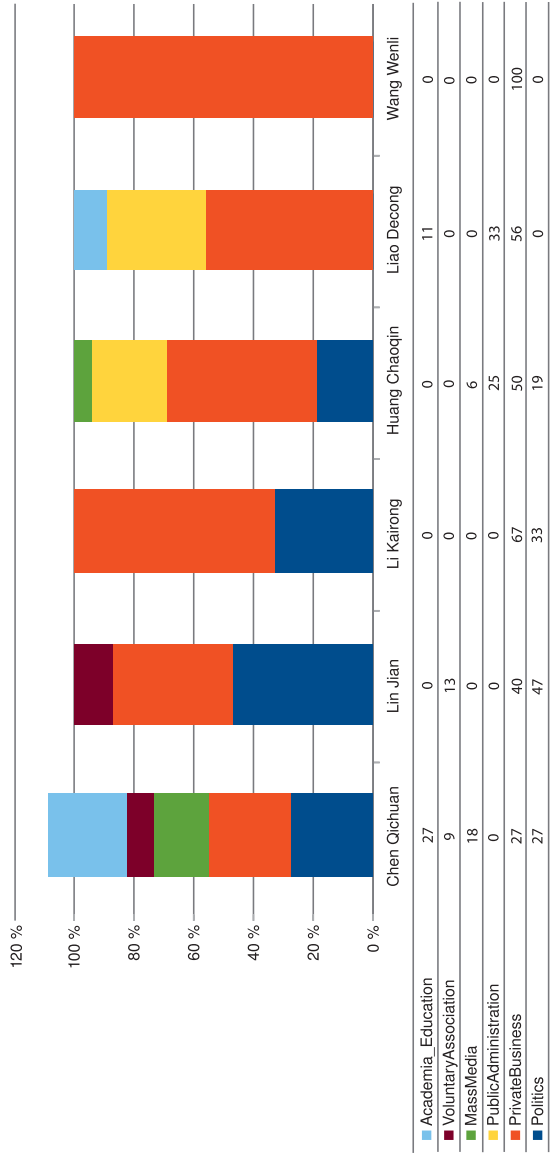


Figure 5: Chen Qichuan's portfolio of prestige compared to some of his brothers-in-law (Li Kairong, Liao Decong, Wang Wenli, and Huang Chaoqing who are related to Chen's sister-in-law) and a son-in-law (Lin Jian).

- 1. Chen Qichuan
- 2. Lin Jian, son-in-law of Chen Qichuan
- 3. Li Kairong, brother-in-law of Chen Qichuan
- 4. Li Kai'e, sister of Li Kairong and wife of Chen Qiqing
- 5. Huang Jinchuan, wife of Chen Qiqing and sister of Huang Chaoqin
- 6. Liao Decong, brother-in-law of Chen Qichuan
- 7. Wang Wenli, brother-in-law of Chen Qichuan

7.2 Case Study 2: Inter-generational Social Mobility

For the second case study, I have selected the family of Chen Tianlai (陳天來) (1859–1945), a tea tycoon who immigrated from Fujian province. His father initially established a small business dealing with charcoal used to dry tea leaves. In 1891, Chen Tianlai opened his tea shop, the Gen Kee Tea House (錦記茶行), and rapidly rose to prominence in the tea business of Dadaocheng, a district in present-day Taipei. From 1920 to 1925, he served on the Taipei City Council (臺北州臺北市協議會) as a local representative and on the Taipei Prefectural Council (臺北州州協議會) from 1926 to 1933. Chen Tianlai's stature gradually increased as he became a member of various merchant associations, credit associations, and tea cooperatives in the 1930s. In 1935, he also became a patron in the cultural scene by founding two theaters in Dadaocheng.⁵⁶

Chen Qingbo (陳清波) (1872–1939), the third son of Chen Tianlai, serves as a compelling example of social mobility during the Japanese colonial period. He began his educational journey by graduating from Dadaocheng General School (大稻埕公學校) in 1919 and then pursued studies at Taiwan Vocational School (台灣商工學校). In 1924, he completed his education at Chinese Secondary School in Xiamen (中華中學), where he studied both Malay and standard Chinese. From the same year, he became involved in managing the family business in Malaysia and Xiamen. By 1926, he held the position of managing director at the family company and made several visits to Java, indicating the family's growing financial standing. Additionally, his father was already serving on the prefectural council at this time. In 1928, Chen Qingbo entered the realm of public service in the policing area. Initially, he served in the *hokō* militia as the chief of the Dadaocheng united militia unit (大稻埕第一聯合壯丁團長).⁵⁷ While this was an unpaid position, only household heads or designated representatives of households were eligible to engage in the *hokō* system. This indicates that he held a leading position within his own family and was approved by local police authorities. Simultaneously, he became the chief of the Dadaocheng Youth Association unit (大稻埕青年團長) and a council member for the *hokō* council at the Taipei police bureau (北警察署管內保甲協會評議員). In the 1930s, he began working in public administration, specifically on the Committee for Hygiene in Taipei City, while also advancing in the *hokō* system's hierarchy. His dual service in both policing and administration likely brought new business opportunities with significant responsibility, leading to his appointment

⁵⁶ See his life trajectory at <http://tbio.orient.cas.cz/people/陳天來>.

⁵⁷ Militias were established in 1896 as “self-rule police,” a variation of the *hokō* system. Chen Ching-Chih, “The Japanese Adaptation of the Pao-Chia System in Taiwan, 1895–1945,” 394.

as a designated dealer for opium in 1931.⁵⁸ This position served as a certification of his social capital derived from involvement in these two fields.

By 1932, he had become the managing director of the family business while serving on the boards of directors of various credit cooperatives, public committees, and professional associations. This further multiplied his social and economic capital. In 1934, he was elected as a member of the Taipei City Council, reflecting his rising social standing. By 1935, he held key leadership positions as the chairman of the Taiwan Local System Reform Promotion Association (台灣地方制度改正促進會委員長), chairman of the Taiwan Economic and Diplomatic Association (台灣經濟外交會會長), and chairman of the Chen Clan of the northern region. His influence within the local community continued to grow, and in 1937, he took over his father's company, transforming it into a joint-stock company. Tragically, he passed away in 1939 at the age of 67.⁵⁹ Within just two generations, the Chens had risen to become influential businessmen, politicians, and patrons within the local community.

In the third generation, after establishing themselves in various fields including business, politics, public administration, charity, and culture, the Chen family made significant marital connections with two old prominent families. Chen Shoushi (陳壽實) married Gu Liqing (辜麗卿), who was a granddaughter of Gu Xianrong from the Lugang Gu family. Likewise, Chen Shuhui (陳淑惠) married Yan Huiran (顏惠然), who was a grandson of Yang Guoyun from the Jilong Yan family (as depicted in Figure 6 for clarity). Indeed, these marriages can be seen as the culmination of the Chen family's social mobility. By marrying into families like the Gu and Yan families, which were regarded as belonging to the highest strata of Taiwanese society, the Chen family's descendants solidified their position and status within the elite community. These marriages represented a significant achievement in terms of social recognition and integration into the upper echelons of the local elite network. They symbolized the successful culmination of the family's multi-generational efforts to establish themselves as influential businessmen, politicians, and patrons within the local community.

The Gu and Yan families, despite being considered old prominent families, displayed a more open approach towards marriage alliances with newly affluent families like Chen Tianlai's family.⁶⁰ Interestingly, both Gu and Yan families can be

58 Chen Ching-Chih remarked that serving in the as *hokō* headsman could lead to many business opportunities or positions in the public administration. Chen Ching-Chih, "The Japanese Adaptation of the Pao-Chia System in Taiwan, 1895–1945," 399.

59 See his life trajectory at <http://tbio.orient.cas.cz/people/陳清波>.

60 In my previous observations, I examined intermarriages between the five old families and the five new families, while also observing the role of families in intermediary positions. The

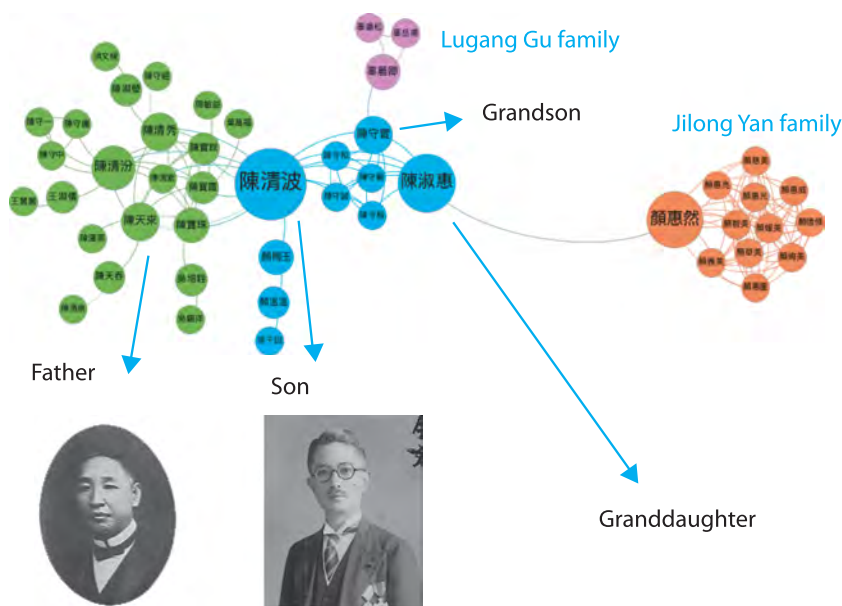


Figure 6: Chen Qingbo's family network (three steps): Chen Tianlai's generation in green; Chen Qingpo's family in turquoise.

categorized as “border” families of the highest strata of Taiwanese society, as their portfolios of prestige indicate a greater involvement in power-related fields and less in the cultural domain – which is typically associated with the “new elites.”⁶¹ This structural similarity between Gu, Yan, and the emerging new economic elites facilitated the upward social mobility observed in the case of Chen Tianlai's family. This shared pattern of participation further contributed to their mutual permeability and facilitated the process of upward social mobility within the local elite network.

Concluding Remarks

The year 1945 marked a crucial turning point in Taiwanese history, with the end of the Second Sino-Japanese War and the 50-year Japanese colonial rule in Taiwan. During the Japanese era, a sophisticated system utilized existing and emerging

summarized findings are presented in footnote 16. Dluhošová, “Marital Networks and Portfolios of Prestige: Digital Humanities Perspectives on the Study of Taiwanese Elites.”

⁶¹ Ibid.

Taiwanese elites, controlling them through the *hokō* system and various committees, with limited power in local councils. The postwar period brought new challenges, including mistrust from the incoming Chinese administration due to cultural and language barriers, leading to tensions and the 2.28 Incident impacting Taiwanese intellectuals' political aspirations.

This paper compared two groups of local politicians active in local councils during the Japanese colonial and early postwar periods, analyzing their collective habitus – their involvement in various fields generating distinct types of capital. The Japanese government favored a younger generation educated under the colonial regime with fewer ties to China. Many of these new politicians were sons of wealthy families established in business, politics, or public administration. According to my data, the generational change occurred in the early 1950s after mainland elites arrived in Taiwan, which does not contradict an earlier observation stating a gap in Taiwanese political representation after the 2.28 Incident. Both pre- and postwar local politicians were mainly high school graduates. If educated at university, they often obtained their education abroad, particularly in Japan, in subjects not commonly encouraged in Taiwan by the Japanese colonial government (i.e., economics, political science, law).

Regardless of the period, local Taiwanese politicians and their fathers shared a common habitus characteristic of power elites, drawing prestige from economic, political, and social capital. The postwar generation showed less involvement in public administration, suggesting a gradual autonomy of the political field and a potential trend towards the professionalization of politicians. From the perspective of habitus, there is no change within the group of local politicians, which may also reflect the high degree of continuity over the 1945 divide. Notably, siblings and children of politicians experienced less pressure to engage in power-related fields, instead enjoying more involvement in other spheres, which played a legitimizing role in gaining acceptance among the old elites. Overall, the paper demonstrates a continuity in the habitus of local politicians and sheds light on the dynamics of social mobility within Taiwanese elite circles.

The study illuminates how established families like Chen Zhonghe's employed various strategies to maintain their status, including extensive marital networks that attracted equally affluent families, thereby bolstering economic wealth through political involvement and the subsequent generation of social capital. For example, Chen Qichuan's participation in Kuomintang support, as well as his patronage of schools, contributed to Chen Zhonghe's family's social standing, reaffirming their elevated position in society also in the postwar period.

Although there were no significant differences in the habitus between fathers and their politician sons, the intermarriage with prominent families indicated that achieving a respectable status acceptable to the old, established families required

efforts spanning several generations. The case study of Chen Tianlai's family further highlighted how involvement in the *hokō* system could serve as a stepping stone to higher standing positions in business and other social organizations – an observation which might not be generally accepted by the current scholarship. Social mobility was not solely determined by economic and political capital; social capital generated through various fields of other activities also played a crucial role.

The study revealed that the significant event of 1945, a turning point in East Asian political history, did not entirely upend the elite structures in Taiwan. The existing political elites continued to have access to resources and wield power. However, in the 1950s, a new generation of politicians emerged as the island came under the consolidated rule of the Kuomintang authoritarian regime, which lasted until democratization in the 1980s. The evolving political landscape and the presence of these new elites played a crucial role in shaping the trajectory of Taiwanese politics in the postwar era. Investigations into the period will be undertaken in the near future to further complicate the picture of political involvement of postwar Taiwanese elites.

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