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Network of Words: A Co-Occurrence Analysis of Nation-Building Terms in the Writings of Liang Qichao and Chen Duxiu

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Abstract Liang Qichao (1873–1929) and Chen Duxiu (1879–1942) were two of the most brilliant writers and influential public intellectuals in the late nineteenth, early twentieth century China. Born six years apart, both men electrified the country with their publications of *New Citizen's Journal* and *New Youth*, respectively, and heralded the character of a new and modern citizen, befitting a new century and a new China. Central to both men's concerns is the relationship between the citizen and the state. Liang, at the end of his checkered political career, concluded that the uninformed Chinese population would best be governed by enlightened autocracy. Chen, after his expulsion from the Chinese Communist Party and alienation from the Chinese Trotskyists, wavered between the dictatorship of the proletariat and democratic socialism. Did both men seemingly opt for authoritarian rule for China, and reject their ideal of liberty and democracy from their younger days? Our paper aims to test this hypothesis, that Chen and Liang both saw the need for a centralized power, albeit in different political frameworks, by using quantitative literature analysis. We examined the similarities and differences between their writings on the pairwise co-occurrence of thirty terms related to the topic of nation-building. We created a network with these thirty terms, where an edge between a pair of terms indicates significant relationship. The relationship is defined as the proportion of writings where both terms co-occurred. The visualization yields information on some preliminary differences in the writings of both men, to be further examined.

1. Introduction*

In the waning years of the Qing dynasty (1644–1912), and during the first decade of the Republic of China, two men used their well-honed pens to excoriate, cajole, and teach their readers on how to act as members of a “modern” nation. Liang Qichao 梁啟超 (1873–1929) and Chen Duxiu 陳獨秀 (1879–1942) were arguably the two most influential public intellectuals of their times. Liang’s *Xinmin Congbao* 新民叢報 [New People’s Miscellany], published from 1902 to 1907,¹ enjoyed a circulation of 10,000 copies at the height of its popularity,² and had a huge impact on generations of readers, including the younger, so-called May Fourth generation. He wrote at length on how to construct a new China with a new citizenry, and introduced to his readers new political theories and new terminology from the West. While six years younger, Chen Duxiu (1879–1942) stands in equal stature to Liang in terms of influence and writing productivity. Publisher of the influential journal, *Xin Qingnian* 新青年 [New Youth] (1915 to 1922),³ and widely considered leader of the New Culture movement (ca. 1915–1923), Chen admitted that he became a “Kang-Liang” [Kang Youwei and Liang Qichao] convert when he first traveled to Nanking for the civil service exam at the age of 19: “[I switched] from the study of witches and monsters to the Kang-Liang camp.”⁴ Hu Shi, a renowned scholar and diplomat, hailed the *New People’s Miscellany* and *New Youth* as two of the three most influential journals of the century. *New Youth* featured progressive journalism of the sort pioneered so brilliantly by Liang Qichao a decade or so before.⁵ The success of their publications propelled them to political

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1 This was published in Japan during Liang’s exile, but made its way to China without resistance.

2 Philip C. Huang, *Liang Ch’i-ch’ao and Modern Chinese Liberalism* (Seattle: University of Washington Press, 1972), 5.

3 *Xin Qingnian*’s last issue as a monthly ended with vol. 9, no. 6, published on July 1, 1922. Thereafter it became a quarterly publication. See Baoming Zhang 張寶明, *Duowei shiye xia de 《Xin Qingnian》 yanjiu* 多維視野下的《新青年》研究 [A multi-perspective study of *Xin Qingnian*] (Beijing: Shangwu yinshu guan, 2007), 319.

4 “Wo you xuanxue yaonie bian dao Kang, Liang pai” 我由選學妖孽變到康梁派。See Shen Ji, “Xinhai geming shiqi de Chen Duxiu” 辛亥革命時期的陳獨秀 [Chen Duxiu during the 1911 Revolution], *Jianghuai luntan* 江淮論壇 [Yantze and Huai River Forum], no.2 (Dec. 1979): 56–63, and “Shi’an zizhuan” 實庵自傳 [The autobiography of Shi’an], in *Chen Duxiu zhuzuo xuanbian* 陳獨秀著作選編 [A selected edition of the works of Chen Duxiu], ed. Ren Jianshu 任建樹 (Shanghai: Shanghai renmin chubanshe, 2008), vol. 5, 211. Henceforth ZZXB.

5 Hu Shi 胡適 enumerated three journals: Liang Qichao’s *The China Progress* [時務報], *New People’s Miscellany* [新民叢報], and Chen’s *New Youth* [新青年]. Chen Pingyuan called it the most influential journal of the century. See Chen Pingyuan 陳平原, *Chumo lishi: wusi renwu yu xiandai Zhongguo* 觸摸歷史: 五四人物與現代中國 [Touching history: The people of the May Fourth and modern China] (Guangzhou: Guangzhou chubanshe, 1999), 39, 61.

prominence. Both men engaged in political activities with the idealistic goal of saving China, but both came away disillusioned by their experiences. Toward the end of their lives, they both changed their minds about the pursuit of Western-style democracy, opting for a far more authoritarian system of political rule, albeit of very different political persuasions.

With the passage of time, Liang's iconoclasm, which initially inspired the May Fourth generation, was superseded and ignored by the latter. As Joseph Levenson observed: "The 'new youth' of *Xin Qingnian*, when they seemed to speak the same language as Liang, spoke so little of it with him. For the language was not really the same, 'identical' ideas were not identical."⁶

To explore what lies behind the differences in the seemingly identical language that represents dissimilar ideas, we turn to network analysis. We aim to understand the contextual change surrounding the "identical ideas," or key terms, by the use of word co-occurrence networks. We selected thirty key terms related to the theme of nation-building in the writing of both men and tracked them over three different time periods.

2. Historical Background

Several striking parallels appeared in the lives of the two intellectuals, and a brief biography of each is useful in order to contextualize their writing. Liang Qichao, born into an educated family near Guangzhou, passed the first level of the civil service exam for the *xiuca*i degree in 1883. He studied in the famous *Xuehai Tang* 學海堂 [Sea of Learning Hall] in Guangzhou, and successfully passed the second level, earning the distinction of being the youngest holder of the *juren* degree in 1889.⁷ A year later, he traveled to Beijing for the next level of examinations and came across a copy of Xu Jiyu's (1795–1873) *Yinghuan zhilüe* 瀛寰志略 [A short account of the maritime circuit, 1840]. The book introduced him to knowledge about other countries in the world.⁸ Having failed the exam, Liang became Kang's student and taught in the latter's academy, the Thousand Thatched Hall 萬木草堂 (*Wanmucao tang*).⁹ Kang, who succeeded in obtaining a *jinshi* degree in 1895, but did not receive an official appointment due to the discrimination of an examiner, developed an eclectic philosophy in the early 1890s that was grounded in New

6 Joseph R. Levenson, *Liang Ch'i-ch'ao and the Mind of Modern China*. Cambridge, MA: Harvard University Press, 1965, 10–11.

7 Julia C. Schneider, *Nation and Ethnicity: Chinese Discourses on History, Historiography, and Nationalism (1900s–1920s)*, (Leiden: Brill, 2017), 68.

8 Schneider, 69.

9 Schneider, 69.

Text scholarship but which also drew upon Buddhist and Western ideas.¹⁰ Kang borrowed ideas from the ancient texts to argue that reforms and changes were inevitable, and that Confucius was a reformer.¹¹

Under Kang's tutelage, Liang engaged in reform advocacy on multiple fronts. In 1895, together with Kang, they collected almost a thousand examinees' signatures in a ten-thousand-word petition to the throne. The famous "Memorial of the Candidates" (*gongche shangshu*) 公車上書 protested against the Qing government's acceptance of the humiliating terms of the Treaty of Shimonoseki after China's defeat in the Sino-Japanese war of 1894–95, and urged the emperor to implement reforms. During this period, Liang failed the *jinshi* examination three more times. He became the secretary of Kang's study-society, the *Qiangxue hui* 強學會 (China Strengthening Society), and chief editor of the paper affiliated with the society, the *Qiangxue bao* 強學報. This paper was later renamed *Shiwu bao* 時務報 (China Progress) and was extremely influential. The visibility afforded by the paper led to Liang's appointment as director of a translation bureau in the Qing bureaucracy.¹² By 1898, Kang and Liang's reform efforts had reached the ear of the emperor Guangxu (1871–1908), who acted upon their recommendations over a period of a hundred days during the summer, from June 11 to September 20 (called the Hundred Days Reform). The drastic reforms included the abolition of the eight-legged essay, the dismissal of sinecure offices, the appointment of progressive-minded officials, and the creation of administrative bureaus, among other radical practices.¹³ Threatened by the Emperor's new direction, Empress Dowager Cixi placed the Emperor under house arrest, ordered the death warrants for Kang and Liang, and executed their colleagues.

Kang and Liang fled to Japan, their passage and living expenses initially funded by the office of the Japanese prime minister Matsukata Masayoshi.¹⁴ In Japan, Liang learned to read Japanese and became acquainted with Japanese scholars and politicians.¹⁵ Liang greatly admired the reforms initiated by the Meiji emperor, which he understood as the reason for Japan's strength and power. Living in Japan during the years from 1898 to 1912, Liang first founded the newspaper, *Qingyi bao* 清議報 [*Pure Discussion Paper*], and later the *New People's Miscellany*. During this time he traveled to Hong Kong, Singapore, Ceylon, Australia, Taiwan,

10 Anne S. Chao, "Chen Duxiu's Early Years: The Importance of Personal Connections in the Social and Intellectual Transformation of China 1895–1920" (Ph.D. diss., Rice University, 2009), 43.

11 Immanuel C. Y. Hsu, *The Rise of Modern China* (New York: Oxford University Press, 2000), 365.

12 Schneider, 70.

13 Hsu, 365–379.

14 Schneider, 71.

15 Peter Zarrow, *After Empire: The Conceptual Transformation of the Chinese State, 1885–1924* (Stanford: Stanford University Press, 2012), 69.

Canada, the United States and the Philippines, as well as penning his most influential tracts, such as *Xin Shixue* 新史學 [New historiography] and *Xinmin shuo* 新民說 [Discourse on the new citizen]. Liang's vision of a new citizenry took the imagination of his readers by storm. Education, Liang argued, would produce a new people that was informed, empowered, responsible and capable of disinterested action."¹⁶

By 1912 the Qing dynasty has been overthrown, and Liang was able to return to the newly formed Republic of China. His renown was such that both Sun Yatsen and Yuan Shikai courted him aggressively. He sided with Yuan by merging his political party, *Minzhu dang* 民主黨 (Democratic party) with Yuan's *Gonghe dang* 共和黨 (Republican party), and the *Tongyi dang* 統一黨 (United party). The new entity was named *Jinbu dang* 進步黨 (Progressive party).¹⁷ Liang became Minister of Justice and later the first Director of the Monetary Bureau in Yuan's government. After Yuan's death in 1916, he assumed the post of Minister of Finance in the new administration led by Li Yuanhong and Duan Qirui. He also formed a new study group, the *Xianfa yanjiu hui* 憲法研究會 (Association for constitutional research), also known as *Yanjiu xi* 研究系 (Research clique). Liang's group was embroiled in bitter political struggles between the Anhui and the Communications cliques. When his party lost the majority in the national assembly, Liang decided to leave politics. He raised enough funds to travel to the Paris Peace Conference in May 1919 as an unofficial adviser. The disheartening outcome of China losing the previously German-held territory in Shandong to Japan, and the lack of Western support in this dispute, thoroughly alienated Liang, leading to his complete renunciation of politics.¹⁸ From 1919 until his death, Liang took teaching positions at Dongnan and Tsinghua universities, and wrote little about politics. He died in 1929 at the age of 55.

Chen Duxiu, six years younger than Liang, was born in Anqing, Anhui province, to a family with a long line of tutors. Educated at home by his grandfather and his older brother, he gained first place in the *xiuca* exam at the relatively young age of seventeen. By his own account, he intentionally failed at the next level, the *juren* exam, which took place in the provincial capital of Nanjing. As mentioned earlier, he was instantly captivated by the writings of Kang and Liang. In fact, his first publication, "An Account of the Topography of the Yangzi River" 揚子江形勢論略 [Yangzi jiang xingshi lunlüe] was an essay adapted from two articles in Liang's *China Progress*, which were written by Germans and translated into Chinese: "A Discussion of the Defense of the Yangzi River"

16 Peter Zarrow, "Liang Qichao and the Notion of Civil Society in Republican China," in *Imagining the People: Chinese Intellectuals and the Concept of Citizenship, 1890–1920*, ed. Joshua A. Fogel and Peter G. Zarrow (Armonk, N.Y., M. E. Sharpe: 1997), 232–257.

17 Schneider, 73.

18 Schneider, 75.

揚子江籌防芻議 [Yangzi jiang choufang chuyi] and “An Examination of the Cannon Bulwarks Along the [Yangzi] River” 查閱沿江砲臺稟 [Chayue yanjiang paotai bing]. He supplemented this twelve-page tract with details about his hometown and references to passages in the historical novel, *Romance of the Three Kingdoms*.¹⁹ After spending a few years in Northeast China working with his uncle, and having witnessed first-hand the Russian mistreatment of the Chinese, Chen left China to study in Japan in 1901. In Japan, Chen, like Liang, encountered a world of new Western political philosophy, history, and social theories via Japanese translations. Although no mention was made of Chen and Liang being in touch, we know that Liang’s *New People Miscellany* was widely read by Chinese readers in Japan and in China. Ironically, while just a few years before Chen had respected Liang as a progressive political thinker, now Chen joined radical student societies, and soon regarded Liang as reactionary.

While Liang occupied cabinet positions in Yuan’s government, Chen served as secretary of the provisional government of Anhui province, and plotted to overthrow Yuan. When the attempt, as part of the “Second revolution,” failed, Chen’s attention turned to writing, predicting that his pen would have a “great impact” on Chinese society within a decade.²⁰ The publication that Chen created in 1915, *New Youth*, was wildly successful, and introduced iconoclastic and revolutionary ideas to young intellectuals in China in much the same way that Liang’s publication did a decade ago. Chen was invited to become the Dean of the School of Letters at Peking University by the venerable scholar/revolutionary, Cai Yuanpei. With a new cast of powerful intellectuals as contributors, Chen and the magazine brought about the New Culture movement, forever changing the cultural and social landscape of China.

With the debacle of the Paris Peace Conference in 1919, and undoubtedly influenced by the pessimistic tone of Liang’s reporting from Paris, Chen’s disillusionment with Western democracy deepened. Within two years, he formed the Chinese Communist Party (CCP) with the help of Russian Comintern agents and turned his attention to running a political organization. Politics proved to be too treacherous, however, and Chen was ousted from the CCP in 1929. Jailed by Chiang Kaishek from 1932 to 1937, Chen spent his time in prison writing and researching philology, a scholarly interest that he maintained throughout his life. He was released from jail at the onset of the Resist Japan war, but became a polit-

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- 19 Lü Xiaopo 閻小波, *Zhongguo zaoqi xiandaihua zhong de chuanbo meijie* 中國早期現代化中的傳播媒介 [The communication media in China’s early modernization] (Shanghai: Shenghuo, dushu, xinzhi, sanlian shudian, 1995), 227. The two articles are from *Shiwu bao* 時務報 no. 21–26, and no. 28–30, respectively.
- 20 Shen Ji 沈寂, “Wang Mengzou yu Chen Duxiu” 汪孟鄒與陳獨秀 [Wang Mengzou and Chen Duxiu], in *Chen Duxiu yanjiu* 陳獨秀研究 [The study of Chen Duxiu] (Beijing: Dongfang chubanshe, 1999), vol. 1, 380.

ical pariah whose writings few dared to publish. However, he continued to comment on the state of Chinese politics and died in penurious circumstances in 1942.

There were many similarities in the lives of Liang and Chen: both men attained national fame initially from their publications, both were deeply concerned with the problems facing China and explored ways to save the country, both engaged in politics by founding political parties, and both were rebuffed by the political machinations that robbed them of their offices. The difference lies in the fact that Liang came to national prominence before the fall of the Qing dynasty, and wrote his most influential essays in exile in Japan. Returning to China to assume political office in the various warlord governments, Liang concluded that China was not ready for democracy, but that constitutional monarchism may not be the best course for the country either. Chen began writing when the dynasty was moving toward a constitutional monarchy, but concluded that the only way to save China was to overthrow the system. He gained prominence on the national stage after the 1911 revolution, and his tenure as Dean of the School of Letters at Peking University elevated the stature and quality of his journal, *New Youth*, and of his own reputation. Interestingly, his subsequent role as secretary-general of the CCP, and later his expulsion from the party, led him to conclude that until China was ready for the democratic rule of the proletariat, a bourgeois democracy was better than Soviet and fascist autocracy.²¹ The differences in the meaning of their “identical ideas” are partly a result of their divergent political convictions, and partly the changing political climate in which each man operated.

We applied a combination of text analysis and network analysis on the writings of the two men, looking for differences and similarities in their use of 30 terms related to their ideas on how to save China, a central concern in both men’s writing. We selected 391 pieces of Liang’s writing (essays, op-eds and letters) from the complete set of *Liang Qichao quanji* 梁启超全集 [The complete collection of Liang Qichao], and 491 pieces of Chen’s writing, from the six volumes of *Chen Duxiu zhuzuo xuanbian* 陳獨秀著作選編 [A selected edition of Chen Duxiu’s writings]; the selection criteria was based on the articles’ relevance to the theme of nation-building.²²

The 30 terms are words that are judged to be seminal in the writings of both men, and that have the potential to generate different interpretations under each man’s pen. It is not a comprehensive list of keywords in the concept of nation-building, but rather a representative list that highlights the building blocks of both intellectuals’ approach to nation-building. The differences in the length of each piece of writing are normalized by the use of relative word frequency, as

21 Chen, “Gei Xiliu de xin” 給西流的信 [Letter to Xiliu], *ZZXB* vol. 5, 352–357

22 This selected edition is the most comprehensive collection of Chen’s writing to date.

we do not rely on the absolute number of times a word has appeared. Capturing synonyms for a key term is a challenge; in this paper we include “woman” and “women,” as well as “democracy” and “democratic,” as examples of how to capture as many expressions for these two keywords as possible.²³ The use of terms in a negative context is detectable because once the bag of words is generated, the author reads the 150 characters on either side of the keyword, thereby ensuring that the true meaning of the passage is detected.

“資產階級” – capitalist	“國民” – citizen
“憲政” – constitutional rule	“立憲” – constitutionalism
“民主” – democratic	“民主主義” – democracy
“生計” – economy	“進化” – evolution
“財政” – finance	“國政” – governance
“法律” – law	“自由” – liberty
“權限” – limit to power	“君政” – monarchy
“道德” – morality	“國會” – national assembly
“民族主義” – nationalism	“人民” – people
“國民會議” – people’s assembly	“民政” – people’s rule
“民權” – people’s power	“無產階級” – proletariat
“共和” – republic	“革命” – revolution
“社會主義” – socialism	“主制” – sovereignty
“主權” – sovereign rule	“蘇維埃” – soviet
“婦人” – woman	“婦女” – women

Chronologically, we have divided the writing of both men into three separate time periods, each corresponding approximately to changes in their careers. For Liang Qichao, the three periods are: 1892–1898, 1899–1912, and 1913–1920. The analysis begins with Liang’s earliest writing on nation-building up to 1898, when he escaped to Japan after the failure of the Hundred Day Reforms. The next period was the most prolific of Liang’s writing career, and he authored some of his most influential tracts. The third period begins with Liang’s active engagement in politics and ends with his leaving office for academia.²⁴

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- 23 The use of embedding methods can partially address the use of synonyms in text analysis. The embedding method represents each distinct word with a list of numerical numbers. The value of the number is chosen carefully so that words with semantic similarity are closer to each other when simple distance functions are applied, such as cosine similarity. However, due to the rapid change in Chinese modern vocabulary, the embedding method is likely to require a large corpus of text to learn word associations. Thus, we prefer not to use the embedding method in this paper.
- 24 After 1920, Liang devoted his energy to academic issues and wrote few articles on nation-building. We therefore ended the third period in 1920, and not in 1929 when he passed away.

For Chen Duxiu, the three periods are: 1897–1919, 1920–1929, and 1930–1942. We begin our analysis in the first period with the publication of “An Account of the Topography of the Yangzi River,” and end with Chen’s departure from Peking University and taking a turn toward socialism and Marxism. The second period begins with Chen’s establishing the first cell of the Chinese Communist Party (CCP) and ends with his expulsion from the CCP. The third period begins with Chen’s advocacy of Trotskyism and ends with his death.

3. Methodology

To build a network that is related to the topic of nation-building (i.e. 30 terms) for each man, we propose a novel two-stage analytical framework based on word occurrences. First, we generate an n -by- m bag-of-word count matrix C based on one man’s selected writings (i.e. 391 pieces for Liang and 491 pieces for Chen), where n is the number of writings and m is the number of terms. Each row of C corresponds to a piece of writing, each column corresponds to a term, and each entry $c_{ij} \in N$ records the absolute frequency of term j in writing i , where we use i and j to index writings and terms. The count matrix usually suffers from sparsity, heterogeneity, and unknown mean-variance relationship, leading to a challenging task. To alleviate these problems, we dichotomize this matrix C to a binary matrix B with the same dimensionality, named the keyword indicator matrix. Each entry in B , i.e. $b_{ij} \in \{0,1\}$, indicates if term j is a keyword in writing i . This could be done via specifying an empirical threshold $t \in Z^+$ and let $b_{ij} = I(c_{ij} \geq t)$, where $I(\cdot)$ is an indicator function. For our analysis, we chose $t = 3$, which means if a selected term occurs three or more times in a piece of writing, then we consider it as a keyword within the text. To adjust for the length of each piece of writing, we could also consider setting $b_{ij} = I(c_{ij}/l_i \geq \tilde{t})$, where l_i is the length of writing i and $\tilde{t} \in (0,1)$ is the normalized cutoff. We choose to use the absolute number of appearances, for the sake of simplicity.

The second step is to construct a network that reflects the dependency between each pair of terms based on their co-occurrences as keywords. Specifically, we first summarize a 2-by-2 contingency table $O_{jj'}$ for each pair of terms j and j' . Here $o_{jj'}^{00} = \sum_{i=1}^n I(b_{ij} = 0)I(b_{ij'} = 0)$, $o_{jj'}^{01} = \sum_{i=1}^n I(b_{ij} = 0)I(b_{ij'} = 1)$, $o_{jj'}^{10} = \sum_{i=1}^n I(b_{ij} = 1)I(b_{ij'} = 0)$, and $o_{jj'}^{11} = \sum_{i=1}^n I(b_{ij} = 1)I(b_{ij'} = 1)$, corresponding to the number of writings where neither term j nor j' are the keywords, only term j' is a keyword but not j , only term j is a keyword but not j' , and where both of them are the keywords, respectively. Based on table $o_{jj'}$, we conduct a Pearson’s chi-squared test for independence, which is used to determine whether there is a statistically significant difference between the expected and the observed frequencies in one or more entries in a contingency table. The null hypothesis is that these two terms are independent in terms of being keyword to any writings. If the resulting p -value is smaller than a pre-specified significance level, then we reject the null hypothesis. For instance, if $o_{jj'}^{00} + o_{jj'}^{11} \gg o_{jj'}^{01} + o_{jj'}^{10}$, indicating their co-occurrences/

co-occurrences as keywords are more frequently observed than the opposite scenarios, then we expect an extremely small p -value, revealing they are less likely to be independent. We repeat the above statistical inferences simultaneously for all $m(m - 1)/2$ pairs of terms. To prevent the inflation of false positive rates that occur with multiple statistical tests, we use the Benjamini-Hochberg procedure to control for the false discovery rate.²⁵

A graph summary $G = (V, E)$ of the set of terms V used by each author can be constructed by linking any two terms for which their adjusted p -value is smaller than a significance level α . The value of α is empirically set at a value of 0.001, or any value that results in an interpretable and meaningful network. An edge in E connects a pair of terms only if both terms are significantly interdependent, as quantified by the Pearson's chi-squared test. Note that the edge is undirected and thus the graph G does not have directionality. We further highlight their common edges and unique edges to compare the two men's networks.

Taking the keyword co-occurrence graph, we could extend the pairwise interaction defined by the co-occurrence of any two terms into a higher-order interaction among all the m terms. To understand these higher-order interactions, we adopted several commonly used graph metrics, such as node degree and betweenness centrality from graph theory.

The node degree is defined as the number of edges extending from a given node. In our context, it measures the number of direct terms that showed up in the same article as keywords. A higher node degree indicates that the term is often used with other terms together as keywords. The betweenness centrality measures the influence of a node over the flow of information between all possible pairs of nodes in a network, with the assumption that information flows through the shortest path connecting any two nodes. Mathematically, it is computed using the following three steps: 1) compute the shortest paths between all pairs of nodes in our graph G ; 2) for a pair of nodes (s, t) compute the fraction of shortest paths that pass through the vertex v ; 3) sum this fraction over all pairs of vertices (s, t) . In our context, it measures to what degree a key term links all the other terms together to form a semantic concept. Note that a higher node degree does not necessarily mean a higher betweenness centrality. To understand how a graph is organized, we applied a community detection algorithm, the Louvain algorithm, to search for modules.²⁶ Resolution is a tuning parameter used to con-

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- 25 Benjamini, Y. and Hochberg, Y. "Controlling the False Discovery Rate: a Practical and Powerful Approach to Multiple Testing." *Journal of the Royal Statistical Society: series B (Methodological)* 57, no. 1 (1995): 289–300.
 - 26 Vincent D. Blondel, Jean-Loup Guillaume, Renaud Lambiotte, Etienne Lefebvre, "Fast Unfolding of Communities in Large Networks." *Journal of Statistical Mechanics: Theory and Experiment* 10 (2008): 155–68.

trol the size of each module. We empirically set the tuning parameter to 1.0 which is also the default value based on visual inspection of the detected modules in each graph. Modularity was designed to measure the strength of a network's division into groups, clusters, or communities. Networks with high modularity have dense connections between the nodes within modules, but sparse connections between nodes in different modules. A modularity score can be computed based on the differences in the density of links within modules compared to links between modules. The modularity score ranges from -0.5 to 1.0 with a higher value indicating nodes in a graph are densely connected within the same module and sparsely connected between modules. In our context, each module is composed of multiple terms that significantly co-occurred in each author's writings. Terms in a module often represent a cohesive topic or concept. We used node degree and betweenness centrality to understand the structure of the term network. Specifically, a term with a high node degree indicates that this term is frequently used with other linked terms in the author's writing. While a term with high betweenness centrality indicates that different concepts within a single network are connected through this node.

Once these calculations have revealed community modules of keywords, as well as identified keywords with the highest degree and betweenness centrality, we then conduct a close reading of the relevant passages containing these keywords. Our interpretation of the meaning of these keywords is derived from a close reading of the text based on the above calculations. For a visual representation of the workflow, please see the chart in Appendix B.²⁷

4. Results

We chose over sixty-five articles written by Liang in the six-year period from 1892 to 1898, a time when he became a disciple and fellow political activist of Kang Youwei. Liang considered these to be the foundational years of his intellectual awakening.²⁸ Authoring these in China before his exile to Japan, Liang laid the groundwork for his discourse on nation-building. The network visualization shows three modules of words that are closely tied together. The blue module contains words primarily focused around personhood (woman, citizen, people, etc.). The orange module is anchored by words such as "national assembly" and "governance," and the green module is concerned with "power," both in terms of the people's power and the limits to power. At the same time, keywords "economy" and "people" ranked highest in degree and betweenness centrality [see Appendix A], followed by "governance," "national assembly," "law," "people's rule,"

27 The data can be found on this website: <https://jyl-2.shinyapps.io/shiny/>

28 Chang, Hao. *Liang Ch'i-ch'ao and Intellectual Transition in China, 1890-1907* (Cambridge, MA: Harvard University Press, 1971), 60.

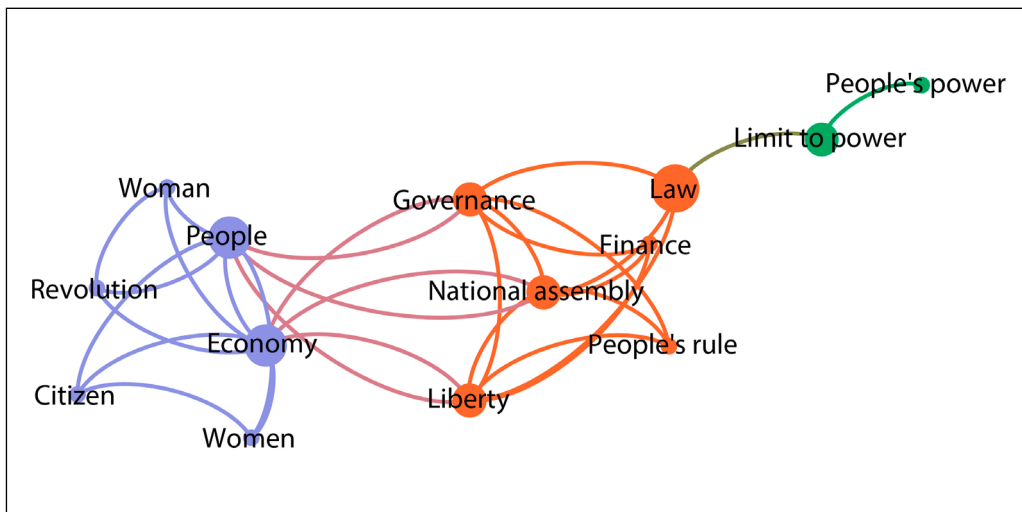


Fig. 1 Liang Qichao 1st period 1892–1898. Three modules are detected in this period. Each node is colored by its module membership and the node size is proportional to its betweenness centrality. Modules were detected using the Louvain algorithm with resolution set to 1.0, which controls the number of modules. Our network has a modularity score of 0.3.

and “limit to power.” Translated into lay terms, it means that the words “economy” and “people” were most often paired with eight different keywords, but that all of the keywords above served as a popular route through which other keywords would pass. Liang introduced the concept of democracy as first practiced in ancient Greece and Rome, and explained that democracy could only succeed if the people had high education attainment and strong capabilities.²⁹ The people must learn how to self-rule, to practice governance in local settings, the better to prepare for participating in provincial and national assemblies.³⁰ Like all civilized nations, China needed to create a national assembly to tend to national affairs, but at the same time he warned that limits must be imposed on people’s rights.³¹ Liang observed that the more complex the legal system of a country, the more

29 Liang Qichao 梁啟超, “Lun junzheng minzheng xiangshan zhi li” 論君政民政相嬗之理 [On the reason for the change from monarchy to people’s rule], *Liang Qichao quanji* 梁啟超全集 [The complete collection of Liang Qichao], (Beijing: Beijing chubanshe, 1999), vol. 1, 96–98. Henceforth *LQCQJ*.

30 Liang, “Wuxu zhengbian ji” 戊戌政變記 [An account of the Hundred Days reform], *LQCQJ*, vol. 1, 181–256.

31 Liang, “Wuxu zhengbian ji” 戊戌政變記 [An account of the Hundred Days reform], *LQCQJ*, vol. 1, 181–256; and “Lun Hunan ying ban zhishi” 論湖南應辦之事 [On tasks Hunan should accomplish], *LQCQJ*, vol. 1, 177–180.

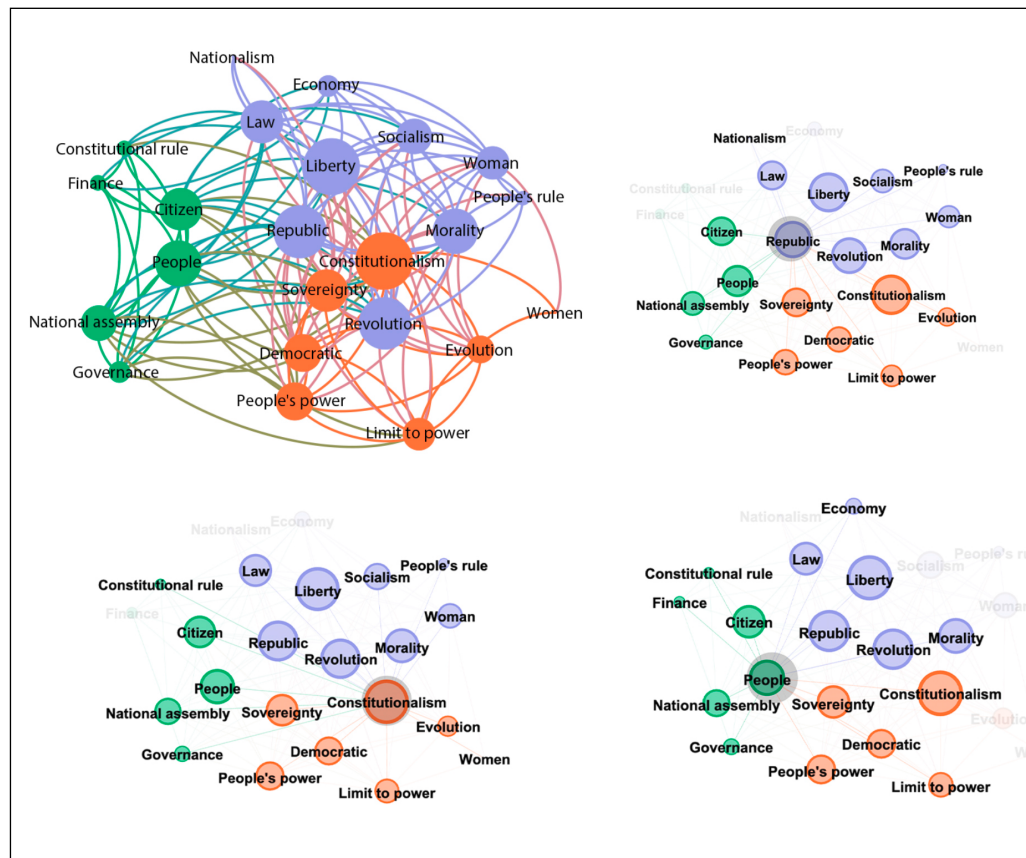


Fig. 2 Liang Qichao 2nd period, 1898–1912. Three modules are detected for this period. Nodes are heavily connected to each other both within each module and across different modules. Resolution is set to 1.0 and the modularity score is 0.1.

civilized that country would be.³² He also highlighted the importance of a strong economy, of involving women in producing a livelihood, and pointed to the drain on the Qing coffer of the outlay for the Eight Banner troops.³³ The general impression of this period of writing is that Liang was preparing his readers to engage in governance, and to understand the strength and limits of democracy.

In the second period of our analysis (1899–1912), we selected 233 articles that dealt with the theme of nation-building. Liang was in Japan during these years, and visited the United States in 1906. This was a time when Liang absorbed a

32 Liang, “Wuxu zhengbian ji” 戊戌政變記 [An account of the Hundred Days reform], *LQCQJ*, vol. 1, 181–256; and “Lun Zhongguo yi jiangqiu falü zhixue” 論中國宜講求法律之學 [On China’s need to study law], *LQCQJ*, vol. 1, 60.

33 Liang, “Bianfa tongyi” 變法通議 [General discussion on reform], *LQCQJ*, vol. 1, 10–59.

torrent of ideas on Western political philosophy, Western history, Japanese governance and all sorts of concepts on political governance, from his readings and his travels. The network visualization reflects the intricate inter-connectedness of his words. As we see in Figure 3, the three modules are heavily connected, both within each module and with other modules. It is by finding the betweenness centrality and degree centrality of these modules that we can determine the hierarchy among the keywords. There are three words with a high degree of betweenness and centrality: “constitutionalism,” “liberty,” and “people,” and each keyword happens to be the central node in each module. Diving into the text, we learn that Liang favored constitutional monarchy with a division of power into three branches: the legislative, the executive, and the judiciary.³⁴ He observed the American presidential election process during his tour of the United States and concluded that the constitutional monarchy countenanced less abuse and was more flexible in implementation than a republican system.³⁵ China must begin with enlightened despotism for a short duration, then transition to constitutional monarchy, and definitely not become a republic at the time of his writing (1905). If China regressed from enlightened despotism, it would become a barbaric state, and regress to revolution. Then the cycle would begin again with enlightened despotism. By 1907, Liang was advocating for constitutional monarchy and the convening of the national assembly, at a time when the Qing court finally agreed to start preparing for a constitutional government, and as provincial assemblies began to appear around the country. With the success of the 1911 revolution, Liang worried that the Chinese people, after thousands of years of despotic rule, would not understand the obligations and responsibilities of a republican state.³⁶

While text-mining the word “liberty” during this period, the most striking statement emerged when Liang toured the United States. He considered the San Francisco Chinatown to be a microcosm of China with a higher literacy rate and better developed governance system, but nevertheless one that was rife with violence and lawlessness. If the more politically advanced Chinese in America still abused their liberty, Liang reasoned, then the more backward Chinese in their home country could not possibly behave as responsible citizens in a republic.³⁷

34 Liang, “Lixian fayi” 立憲法議 [Discussion on establishing the constitution], *LQCQJ*, vol. 2, 405–408; and “Geguo xianfa yitong lun” 各國憲法異同論 [Theory on the differences and similarities of other nations’ constitutions], *LQCQJ*, vol. 2, 318–322.

35 Liang, “Xin dalu youji jielu” 新大陸遊記節錄 [Excerpts from a tour of the New World], *LQCQJ*, vol. 4, 1125–1228.

36 Liang, “Zhongguo liguo da fangzhen” 中國立國大方針 [Major policy for the establishment of China], *LQCQJ*, vol. 8, 2488–2507.

37 Liang, “Xin dalu youji jielu” 新大陸遊記節錄 [Excerpts from a tour of the New World], *LQCQJ*, vol. 4, 1125–1228.

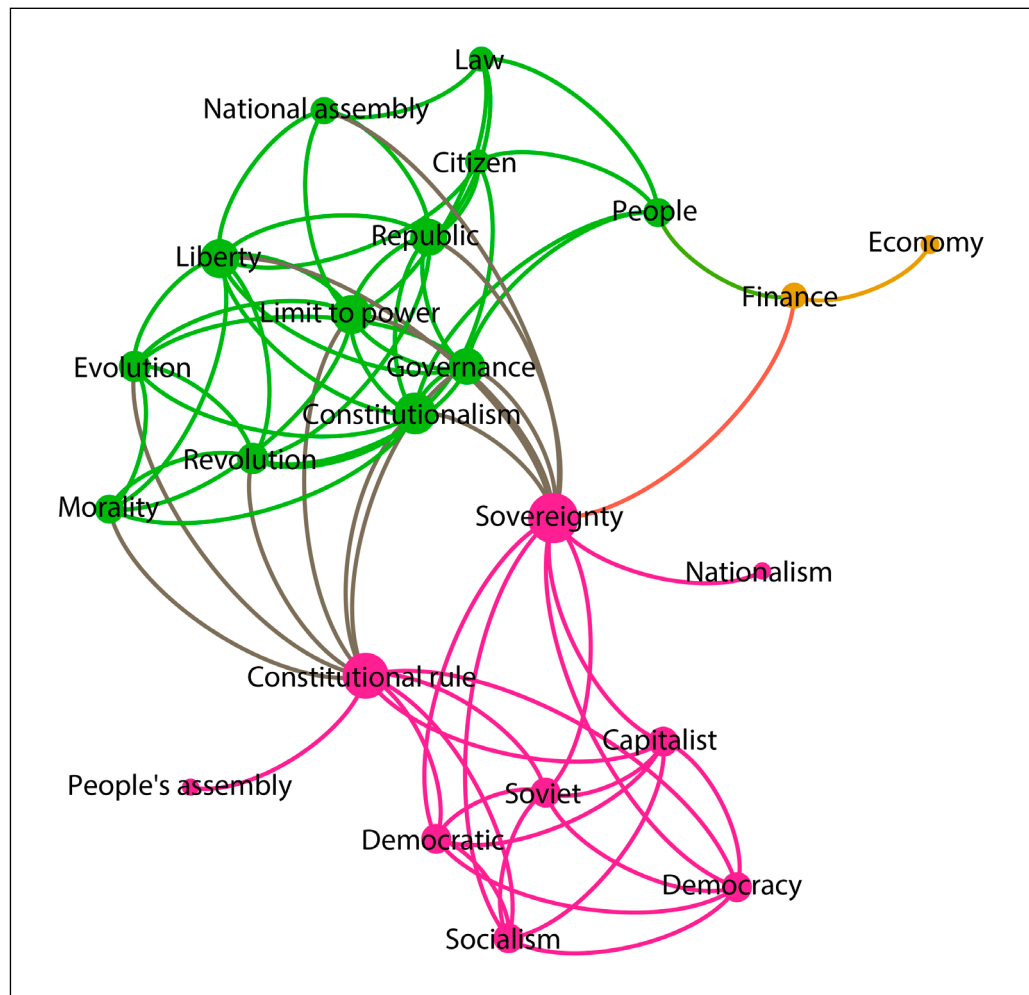


Fig. 3 Liang Qichao 3rd Period, 1913–1920. The modularity score is 0.3. Two major modules are detected for this period. The red and green modules are clearly separated by “Constitutional rule” and “Sovereignty”.

Limits to liberty must be imposed, Liang argued: the people must agree to a social compact,³⁸ to obey the law and follow majority rule.³⁹

The network ties for “people” during this period demonstrate that Liang was educating his readers on the duties and responsibilities of a new citizen: how to participate in parliament and how to supervise the government.⁴⁰ This was the time of his most influential publication, *Xinmin Shuo* [Discourse on the new citizen]. Warning that without limiting the respective powers of the state and the people, the nation could descend into despotism or anarchy, Liang called for clearly defined limits to the power of the state over the people, as well as imposing limits on individual liberty.⁴¹ After the 1911 revolution, Liang worried that the people’s bonds to the state were weak, because the state never prepared its people to learn the duties and rights of a modern citizenry.⁴² In these years of exile, Liang wrote hundreds of articles on the role of the state, the duties of citizens, and the preparations necessary to transition China into a republic.

In the third period of his writing, 1913–1920, Liang had returned to China from exile. He dove headlong into politics, hoping to use his knowledge and expertise to fortify the nascent republic. Liang served first as the Minister of Justice and director of the Monetary Bureau under Yuan Shikai’s government, and later as Minister of Finance in the Beiyang government and mastermind behind the Research Clique. We chose 88 articles from this period, and found that two keywords, “sovereignty” and “constitutional rule,” occupy gatekeeper positions bridging two community modules of keywords. In general, the module in fuchsia indicates broad concepts of political systems while the green module involves concepts dealing with the mechanics of governance. “Sovereignty” and “constitutional rule” both have the highest degree centrality (19) and betweenness centrality [See Appendix A]. If we look at the context surrounding the keyword “sovereignty,” we find that over time, Liang shifted his position on the locus of political power. In 1913, at the beginning of Yuan Shikai’s rule, Liang argued that sovereignty should reside in the hands of the government. By 1920, deeply hurt by the political infighting between warlord cliques, Liang concluded that sovereignty should only be in the hands of the citizens, because “if the people did not take it up themselves, the constitution would never be realized.”

38 Liang, “Zhongguo liguo da fangzhen” 中國立國大方針 [Major policy for the establishment of China], *LQCQJ*, vol. 8, 2488–2507.

39 Liang, “Shizhong dexing xiangcheng xiangfan yi” 十種德性相成相反議 [Discourse on the ten instances where virtue complement or contradict], *LQCQJ*, vol. 2, 428–432.

40 Liang, “Xinmin shuo” 新民說 [Discourse on the new citizen], *LQCQJ*, vol. 3, 655–735.

41 Liang, “Lun zhengfu yu renmin zhi quanxian” 論政府與人民之權限 [On the limit of power of the government and the people], *LQCQJ*, vol. 4, 881–883.

42 Liang, “Zhongguo liguo da fangzhen” 中國立國大方針 [Major policy for the establishment of China], *LQCQJ*, vol. 8, 2488–2507.

Analyzing the context of the keyword “constitutional rule,” we find that Liang was at his most pessimistic in assessing the future of the republic. Liang at first explained the need for constitutional rule, as it brings transparency to governance and imposes discipline on the behavior of the officials. But soon he determined that no good would come from citizens whose understanding of democracy was infantile. He lamented that the people behaved irresponsibly and were unfit to deliberate abstract political issues. By 1916, with the debacle of Yuan’s bid to monarchism, Liang was increasingly doubtful and critical of China’s attempt to establish a constitutional republic. He observed, “from the head of state to the officials, both in China and overseas, high and low, all abhorred the restrictions imposed by the law. They often paid lip service as they pleased. This is one big obstacle to constitutional rule... The people do not have an interest in politics nor an understanding of politics; their morality and capability cannot organize a real political party... In our country the majority of people lack the basic understanding of politics and their weakness in political ability makes it impossible to establish the foundations of constitutional rule.” Writing in 1916, Liang reverted back to his position in 1903, when he invoked German statist philosophers Johann Kaspar Bluntschli and Gustav Bornhak’s argument that a republic is an unstable form of government, subject to the whims and contentiousness of the different social groups. Deploring the immaturity of the Chinese people, and despairing of the corruption of the officials, Liang believed that China still needed an authoritarian mode of governance.

Chen Duxiu began his illustrious publishing career with the 1904–5 *Anhui Suhua bao* 安徽俗話報 [Anhui vernacular paper] and achieved national fame with the publication of *Xin Qingnian* [New Youth]. The keywords fall into five small community modules linked to the theme of nation-building. As with Liang’s first period, Chen is educating his readers on the building blocks of a republican system. But his position is more radical. In reading the passages around the keyword “constitutionalism,” we find that in 1914 Chen refuted Liang by saying “if the people did not have the intelligence to establish a republic, it does not follow that they could function better in a constitutional monarchy!”⁴³ In 1916, Chen shared Liang’s frustration with Yuan’s pretense to the throne, and agreed with Liang that the initiative to establish constitutionalism must come from the people, and not from the government. But ever the iconoclast, Chen blamed the root of China’s weakness on the Confucian tradition and called for the eradication of Confucian tenets such as the “three bonds and five relationships.”⁴⁴ Only then, he

43 Chen Duxiu 陳獨秀, “Aiguo xin yu zijue xin” 愛國心與自覺心 [Patriotism and Self-Consciousness]. In *ZZXB* vol. 1, 146–150; and “Da Wang Yonggong (guoti)” 答王庸工(國體) [Response to Wang Yonggong (national system)]. In *ZZXB* vol. 1, 167.

44 For an explanation of the Confucian three bonds and five relationships, see Richard J. Smith, *The Qing Dynasty and Traditional Chinese Culture* (Lanham, MD: Rowman & Littlefield, 2015), 222–223.

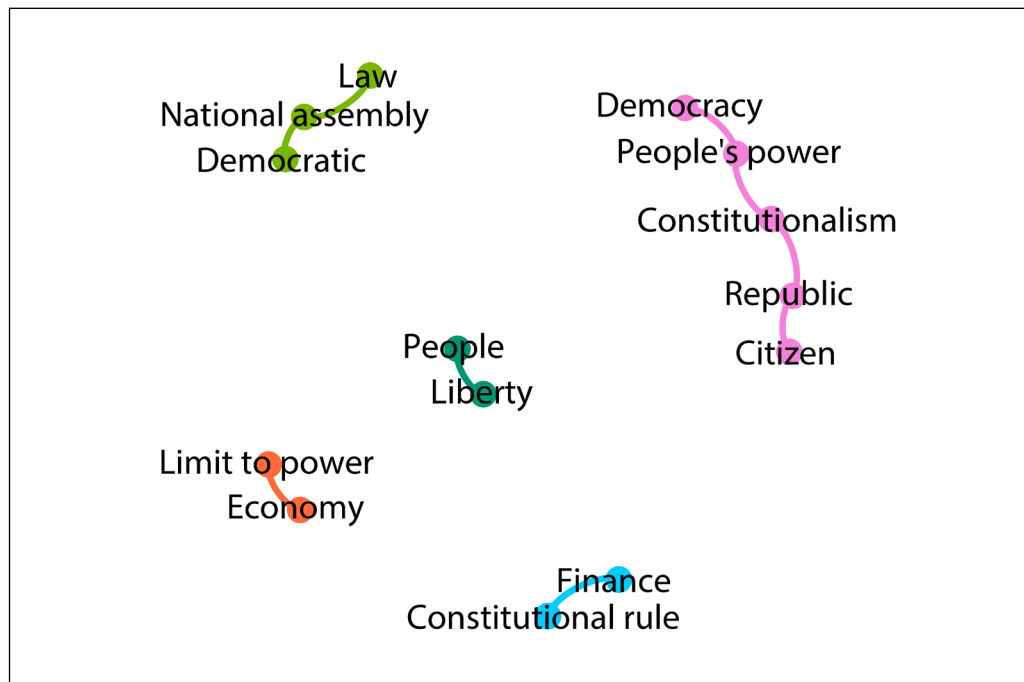


Fig. 4 Chen Duxiu, 1st period, 1897–1919. The modularity score is 0.7. Five modules are detected in this period, where each module is a sparse chain graph.

argued, could a constitutional republic be based on the principles of independence, equality and freedom.⁴⁵ Writing a month after the May Fourth demonstration, in which thousands of students protested against the Beiyang government's betrayal over the lease of the Shandong peninsula, Chen was shifting away from republicanism. Chen expressed his rejection of constitutional rule and party politics: "Whether it's a constitutional monarchy or a republic, neither can guarantee our people the three big freedoms of religion, assembly and speech... We must not put blind faith in them."⁴⁶

On the topic of national assembly Chen, like Liang, agreed that its most important function is to check the activities of the executive branch of the government, for instance to stop the Beiyang government from illegally pledging national resources to Japan in exchange for funding their private wars.⁴⁷ Another point of convergence occurred in Liang's and Chen's view on self-rule. Liang wrote in 1898 that the people must practice self-rule in preparation for participa-

45 Chen, "Wuren zhuihou zhi juewu" 吾人最後之覺悟 [My last awakening]. In ZZXB vol. 1, 201–204.

46 Chen, "Suigan lu" 隨感錄 [Collection of random thoughts]. In ZZXB vol. 2, III–II3.

47 Chen, "Suigan lu" 隨感錄 [Collection of random thoughts]. In ZZXB vol. 1, 407–409.

tion in provincial and national assemblies; in 1919, Chen called on the people to create their own popular assemblies, to take up issues dealing with public health, education, transportation, and then to bring these deliberations to the national assembly.⁴⁸ Both men pinned their hopes on the national assembly following a setback in their political activities. Liang's essay appeared after the failure of the Hundred Days Reform, while Chen penned his article upon his release from jail by the Beiyang government for distributing subversive pamphlets. On the topic of people's power, while both men agreed that a constitutional republic must be based on guaranteeing people's freedom,⁴⁹ Chen went one step further and suggested to his readers that refusing to pay tax was the most potent weapon Europeans had to rein in their government.⁵⁰ At this time, Chen's idea of the national assembly was very similar to Liang's: class division had not entered his vocabulary, but we will see that in the next period, Chen has a very definite understanding of what constitutes a proper national assembly.

The years 1920 to 1929 were a tumultuous time in Chen's life. He co-founded the CCP in 1920–21, only to be expelled nine years later. He transitioned from an intellectual whose chief occupation was teaching and writing, to a political activist who took orders from the Communist International and who tried to subvert the Nationalist Party (also known as the Guomindang, henceforth GMD) all the while claiming to be engaged in a United Front with them. Ultimately he took the blame for the CCP's failed revolution, resigned from the leadership, and was expelled from the party he founded. Three of the four modules are inter-linked, and we will examine the context around two keywords with the highest degree and betweenness centrality: "proletariat," and "revolution," as well as two words that anchor the two inter-linked modules: "evolution," and "people."

A rich context surrounds the keyword "proletariat." In his early days as leader of the CCP, Chen believed in a two-stage class struggle for China: the bourgeoisie versus the feudal warlords, and later the proletariat versus the bourgeoisie.⁵¹ He repeatedly pointed out that because the Chinese industrial base is small, there is not a large enough proletariat class to realize a dictatorship of the proletariat.⁵² The Communist International (Comintern) ordered the CCP to join the GMD, overruling Chen's opposition that the powerful GMD would overwhelm the nascent CCP. In order to justify this move to his cadres, Chen classified the Nation-

48 Chen, "Shixing minzhi de jichu" 實行民治的基礎 [Implementing the basis of people's rule]. In *ZZXB* vol. 2, 118–126.

49 Chen, "Minquan zhiyu ziyou" 民權之與自由 [People's rights and freedom]. In *ZZXB* vol. 1, 431–436.

50 Chen, "Suigan lu" 隨感錄 [Collection of random thoughts]. In *ZZXB* vol. 2, 66–68.

51 Chen, "Duiyu xianzai zhongguo zhengzhi wenti de wojian" 對於現在中國政治問題的我見 [About my views on today's Chinese political problem], *ZZXB* vol. 2, 467–470.

52 Chen, "Zao guolun" 造國論 [Discourse on nation-building], *ZZXB* vol. 2, 480–482.

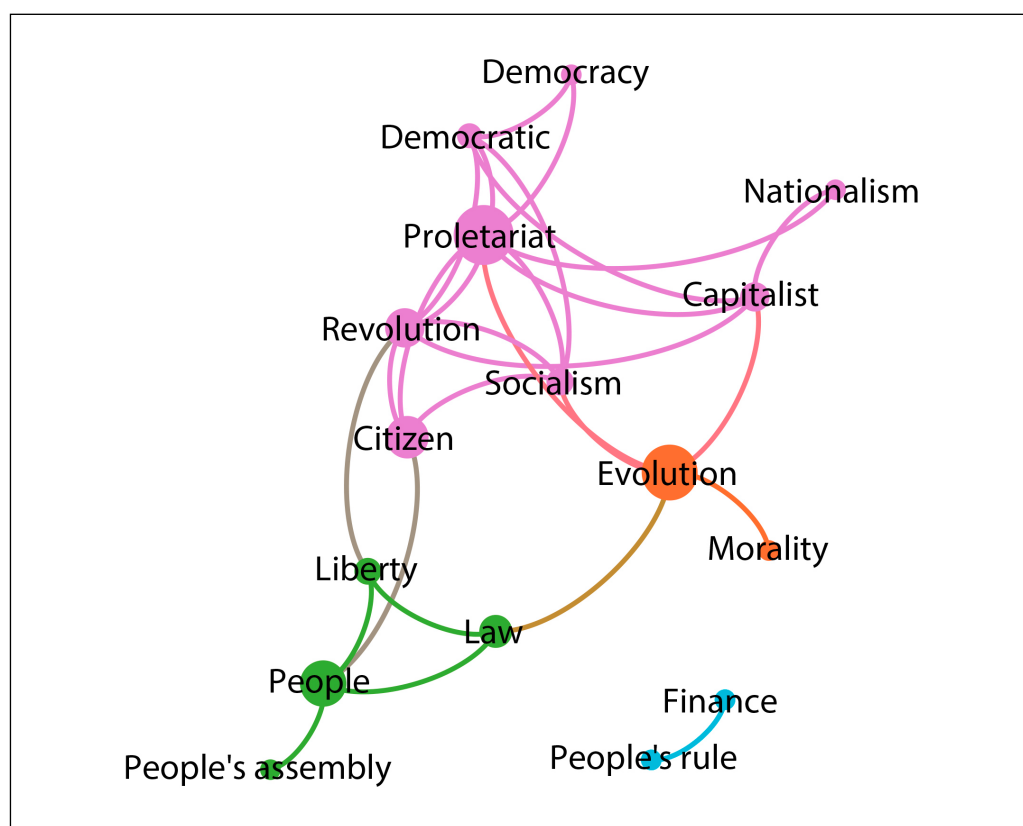


Fig. 5 Chen Duxiu 2nd period 1920–1929. Four modules are detected with a modularity score of 0.3.

alist Party as a party for all classes, and not just for the bourgeoisie.⁵³ Written at a time when the CCP was financially and technically supported by the Comintern, Chen reasoned that the peasants were half-proletariat, that China as a semi-colonial state could not become a revolutionary force, and that the people's immediate task was to support the GMD's national revolution, not to conduct a proletarian revolution.⁵⁴ He did not classify peasants as proletariat, and in order to appease the GMD, went so far as to suggest that China might not need the dictatorship of the proletariat to attain a socialist state.⁵⁵

53 Chen, "Guomindang shi shenmo?" 國民黨是什麼 [What is the Guomindang?], *ZZXB* vol. 2, 483–484.

54 Chen, "Zhongguo geming yu shehui ge jieji" 中國革命與社會各階級 [Chinese revolution and all classes in society], *ZZXB* vol. 3, 153–161.

55 Chen, "Da Shen Binqi, Zhu Jinchi (Minguo geming zhi gui qu)" 答沈濱祈, 朱進赤 (民國革命之歸趨) [In response to Shen Binqi, Zhu Jinchi (Direction of the national revolution)], *ZZXB* vol. 4, 268–270.

Chen believed that the only way for the proletariat class to gain power was to conduct a violent revolution, but one guided by organized laborers, not by thugs.⁵⁶ Since the current regime did not guarantee the people freedom of speech, assembly, association, publication or religion, it was up to the people to rise up and seize power.⁵⁷ Forced into a United Front alliance with GMD by Comintern, Chen declared that now was the time of the GMD-led national revolution, and that the revolutionary proletariat class should ally with the bourgeoisie.⁵⁸ The peasants, Chen explained, were a massive force, but uneducated and therefore difficult to mobilize. It was the task of the proletariat to lead the peasants in the revolution.⁵⁹ By 1927, with the breakdown of the United Front and the massacre of thousands of CCP members by the right-wing GMD, Chen dropped the pretense of agreeing with the Comintern orders, and accused Chiang Kaishek of being an anti-revolutionary.⁶⁰ Declaring the failure of the “anti-imperialist” and “anti-feudal” revolution under the GMD, Chen called for the alliance of the proletariat and for the peasants to lead the next revolution.⁶¹

In the module with the keyword “evolution” as a central node, Chen considered the change of political systems to be evolutionary and natural, “From feudalism to republicanism, from republicanism to socialism,[it] is a natural evolutionary trajectory for society, and China is no exception.”⁶² In addition, Chen explained that Marx views revolution as the natural outcome of socio-economic evolutionary forces.⁶³ Chen further elaborated that all races of people in the world would demand freedoms of speech, assembly and religion once they had achieved economic development and urban growth. And at that point, the political evolutionary force would generate a movement toward democratic constitutional rule.⁶⁴ In the module anchored by the keyword “people,” Chen spoke mostly of the powerless masses. He called for the government to convene a national assembly by the

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- 56 Chen, “Tan zhengzhi” 談政治 [Speaking of politics], *ZZXB*, vol. 2, 249–257; and “Suigan lu” 隨感錄 [Collection of ruminations], *ZZSB*, vol. 2, 311–316.
- 57 Chen, “Benbao xuanyan- *Xiangdao* fakanci” 本報宣言-《嚮導》發刊詞 [Our paper’s manifesto-Preamble to *Xiangdao*’s publication], *ZZXB*, vol. 2, 477–478.
- 58 Chen, “Zichan jieji de geming yu geming de zichan jieji” 資產階級的革命與革命的資產階級 [The revolution of the bourgeoisie and the revolutionary bourgeoisie], *ZZXB*, vol. 3, 33–37.
- 59 Chen, “Letter to Safarov” 給薩法羅夫的信 [Letter to Safarov], *ZZXB*, vol. 3, 108–109.
- 60 Chen, “Jiang Jieshi fandong yu Zhongguo geming” 蔣介石反動與中國革命 [Reactionary Chiang Kaishek and the Chinese revolution], *ZZXB*, vol. 4, 303–308.
- 61 Chen, “Cuntie” 寸鐵 [Inch of iron], *ZZXB*, vol. 4, 370–372.
- 62 Chen, “Guqing jinian de jiazhi” 國慶紀念的價值 [The value of national independence celebration], *ZZXB* vol. 2, 277–80.
- 63 Chen, “Makesi xueshuo” 馬克思學說 [The theory of Marxism], *ZZXB* vol. 2, 441–449.
- 64 Chen, “Benbao xuanyan- <*Xiangdao*> fakanci” 本報宣言-《嚮導》發刊詞 [Our paper’s manifesto-Preamble to *Xiangdao*’s publication], *ZZXB*, vol. 2, 477–478.

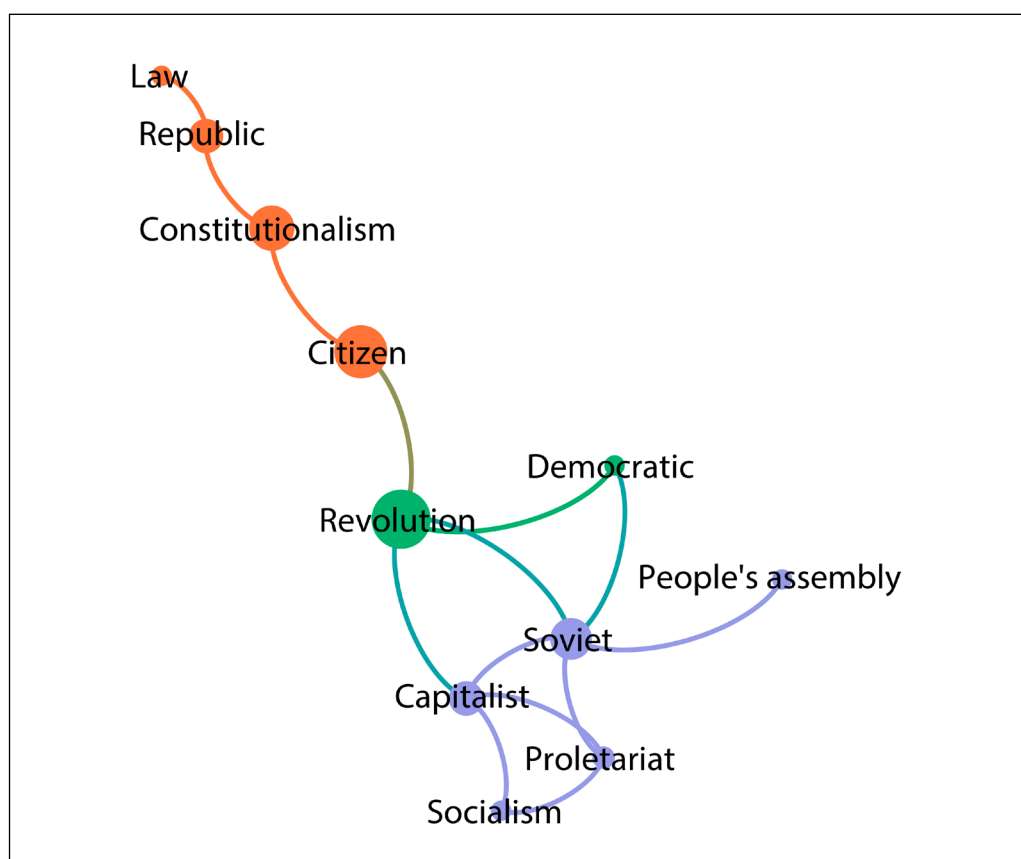


Fig. 6 Chen Duxiu 3rd period 1930–1942. The modularity score is 0.36.

people, and not one led by factions of warlords.⁶⁵ The writings of this period reflect Chen’s focus on leading the CCP and accommodating the erroneous directives of Stalin through the agents of the Comintern. In the third period of our analysis, we will see a reversal in Chen’s perspective on politics.

In this period, three modules were detected. The red module contains words such as “law,” “republic,” “constitutionalism” and “citizen,” forming a theme around state-building. The purple module contains words such as “socialism,” “capitalist,” “people’s assembly,” “proletariat,” and “soviet”, reflecting his late conversion to Trotskyism and his debate with the Stalinists of the CCP. The green module contains two words, “revolution” and “democratic,” with “revolution” having a high betweenness centrality value. “Revolution” is the keyword linking

65 Chen, “Guomin huiyi cucheng hui yu Zhongguo zhengju” 國民會議促成會與中國政局 [Preparatory meeting for convening the national assembly and Chinese political situation], *ZZXB* vol. 3, 399.

the topics represented by the red and purple modules. We will examine the context surrounding “soviet” and “revolution” to understand Chen’s last views.

The 1930s saw Chen convert to Trotskyism, then jailed for almost five years by the GMD, and finally released when the Resist Japan war began in 1937. He was a political pariah and was unable to publish many of his writings. He lived in penurious circumstances until his death in 1942. Even though he declared that his political views were no longer partisan and reflected only his personal opinion, his loyal Trotskyist followers still claimed that he remained a Trotskyist till the end.

“Soviet” is a trope for both the Stalinists the Trotskyists; both sides agree that at some point during the proletariat revolution, it should be used as a “slogan” to rally the base and a strategy to conduct mass movement. But the two camps disagree on when to use this instrument, and who belongs in the soviet.⁶⁶ Chen believed that the constituent assembly and the soviet were two complementary vehicles for fighting the Japanese imperialists, as well as to wrestle power away from the GMD. Chen maintained that a successful soviet should be led by a democratic coalition of the proletariat, the peasants, and the soldiers, which would rally the masses to bring about the revolution. The Stalinists called for a soviet that was composed of a dictatorship of the proletariat and the peasants, which Chen viewed as a mistake.⁶⁷ At the time of writing, the peasants had already created soviets in the countryside, but Chen did not think they had the power to control the urban centers.⁶⁸ Chen regarded the soviet as the highest form of democratic rule and the most powerful and flexible stage in the evolution to a people’s democracy.⁶⁹

Chen evoked the keyword “revolution” when he recast the Resist Japan war as a revolutionary act against an imperialist power. He also used the word to describe the masses, as in “the revolutionary masses must arm themselves and join the war against imperialism.”⁷⁰ The revolutionary national assembly that Chen championed was to be organized by representatives of all anti-Japanese patriots,

66 Gregor Benton ed. *Prophets Unarmed: Chinese Trotskyists in Revolution, War, Jail, and the Return from Limbo* (Leiden: Brill, 2015), 24.

67 Chen, “Gao quandang tongzhi shu” 告全黨同志書 [Letter to all Party comrades], ZZXB, vol. 4, 414–429; and “Yige jinji de zhengzhi wenti” 一個緊急的政治問題 [An urgent political problem], ZZXB, vol. 5, 10–19.

68 Chen, “Yige jinji de zhengzhi wenti” 一個緊急的政治問題 [An urgent political problem], ZZXB, vol. 5, 10–19.

69 Chen, “Women ya zeyang de minzhuzhengzhi?” 我們要怎樣的民主政治 [What kind of democratic rule do we want?], ZZXB vol. 5, 22–27.

70 Chen, “Cici kangri jiuguo yundongde kangzhuang dadao” 此次抗日救國運動的康莊大道 [The healthy and proper way to the Resist Japan National Salvation movement], ZZXB vol. 4, 518–525.

and not by bourgeois elements appointed by the GMD. Under those conditions, the revolutionary national assembly would rise to lead the anti-Japanese war effort for the whole country.⁷¹ Indeed, Chen declared, the Resist Japan war was the beginning of a new revolution, a culmination of the revolutions that began with the Self-Strengthening movement of the 1860s, the Hundred Days Reform, the 1911 Revolution, and the Northern Expedition. Chen called for the revolutionary masses around the world to come to the aid of the Chinese people and help them overthrow the Japanese imperialists.⁷² Chen also cautioned that not all historic times were conducive to stage revolutions. He condemned the Comintern's deceitful depiction of a revolutionary high tide after the massacre of Communists at the hands of the GMD in 1927, which subsequently mobilized more Communist cadres into deadly encounters with the GMD.⁷³

In the final years of his life, Chen opposed any kind of dictatorship, including that of the proletariat. In the five big countries in the world in 1940, Chen singled out three dictatorships: Russia, Germany and Italy. "Any struggle in the world today must be linked to destroying these three bastions... otherwise any euphemism, such as proletariat revolution, people's revolution, would all inadvertently help these three bastions aggrandize their power. If we consider destroying these three powers to be the most important struggle, then we first must admit that the not-so-thoroughly democratic systems of Britain, France, and the United States deserve to be preserved."⁷⁴ He cited the positive and negative aspects of these regimes: in Britain, France and the U.S., national assemblies are elected by the people; opposition parties are allowed to exist, and there is debate during meetings. In those countries, people cannot be arrested or killed without court order. The people enjoy extensive freedom of thought, speech and publication; and waging a strike is not a crime. The opposite is true for Russia, Germany and Italy. In the end, Chen called for a "democracy of the proletariat," and pointed out that political democracy and economic socialism are complementary systems for a country.⁷⁵

71 Chen, "Zhongguo minzu yinggai zeyang jiuguo ji ziji" 中國民族應該怎樣就國及自救 [How should the Chinese people save the country and themselves], *ZZXB* vol. 5, 1–4.

72 Chen, "Kangri zhanzheng zhi yiyi" 抗日戰爭之意義 [The meaning of the Resist Japan war], *ZZXB* vol. 5, 176–180.

73 Chen, "Wo de genben yijian" 我的根本意見 [My fundamental views], *ZZXB* vol. 5, 358–361.

74 Chen, "Gei Xiliu de xin" 給西流的信 [Letter to Xiliu], *ZZXB* vol. 5, 352–357.

75 Chen, "Wo de genben yijian" 我的根本意見 [My fundamental views], *ZZXB* vol. 5, 358–361.

5. Conclusion

In the process of creating the global networks of all keywords, for all the years of both men, we unexpectedly found that Liang had a richer and more varied vocabulary, especially during his second period, whereas Chen used a smaller set of keywords but repeated them often. (See Fig. 7. The red edges in both diagrams indicate commonly paired keywords in both men's writing). Stylistically, this indicates that Chen relied on the rhetorical device of using the same key terms repeatedly to drive home a point. Liang wrote on a broad range of topics and delved deeply into each area, as for example when he discussed finance, where he analyzed topics such as public debt, bonds and currency in great detail. By contrast, Chen's writing reflects his intent to use succinct ideas in order to persuade his readers to pursue a particular set of actions. Further study would undoubtedly yield interesting implications about this difference.

We began our inquiry with the hypothesis that both Liang and Chen, after a lifetime of advocating for a more open political system, reverted back to a more restrictive governance at the end of their respective lives. Our methodology produced keywords with the highest co-occurrence frequency, and thereby identified passages in both men's writings, which were then subject to a close-reading process. This process is supplemented by frequent fact-checking with secondary historical sources and occasional reading of the entire article, as a way to ensure maximum accuracy.

For Liang Qichao, who at first advocated constitutional monarchy, and who later worked in the Republican government, our finding reflects his pessimistic assessment that China was not ready for a constitutional republic. However, rejecting China's return to monarchism, Liang opted for a limited form of "democratic rule" in which the government and the people were both subject to checks and balances. As Peter Zarrow concluded, Liang's idea "... is not democracy conceived in terms of participation and direct decision making... [It] places the practical realm of politics at some distance from the people."⁷⁶ In the case of Chen Duxiu, his last few articles reflect a certain ambivalence on the feasibility of the democracy of the proletariat. Historians have debated at length whether Chen, at the end of his life, reverted to his younger idealism for Western democracy. His praise for the "not-so-thoroughly democratic" countries of Britain, France and the United States harkens back to his May Fourth proclamation that the French civilization gifted mankind with three major ideas: "human rights, biological evolution, and socialism."⁷⁷ However, his Trotskyist comrades insisted

76 Zarrow, "Liang Qichao and the Notion of Civil Society," 252.

77 Chen, "Falanxi ren yu jinshi wenming" 法蘭西人與近世文明 [The French and Modern Civilization], *ZZXB* vol. 1, 164–166.

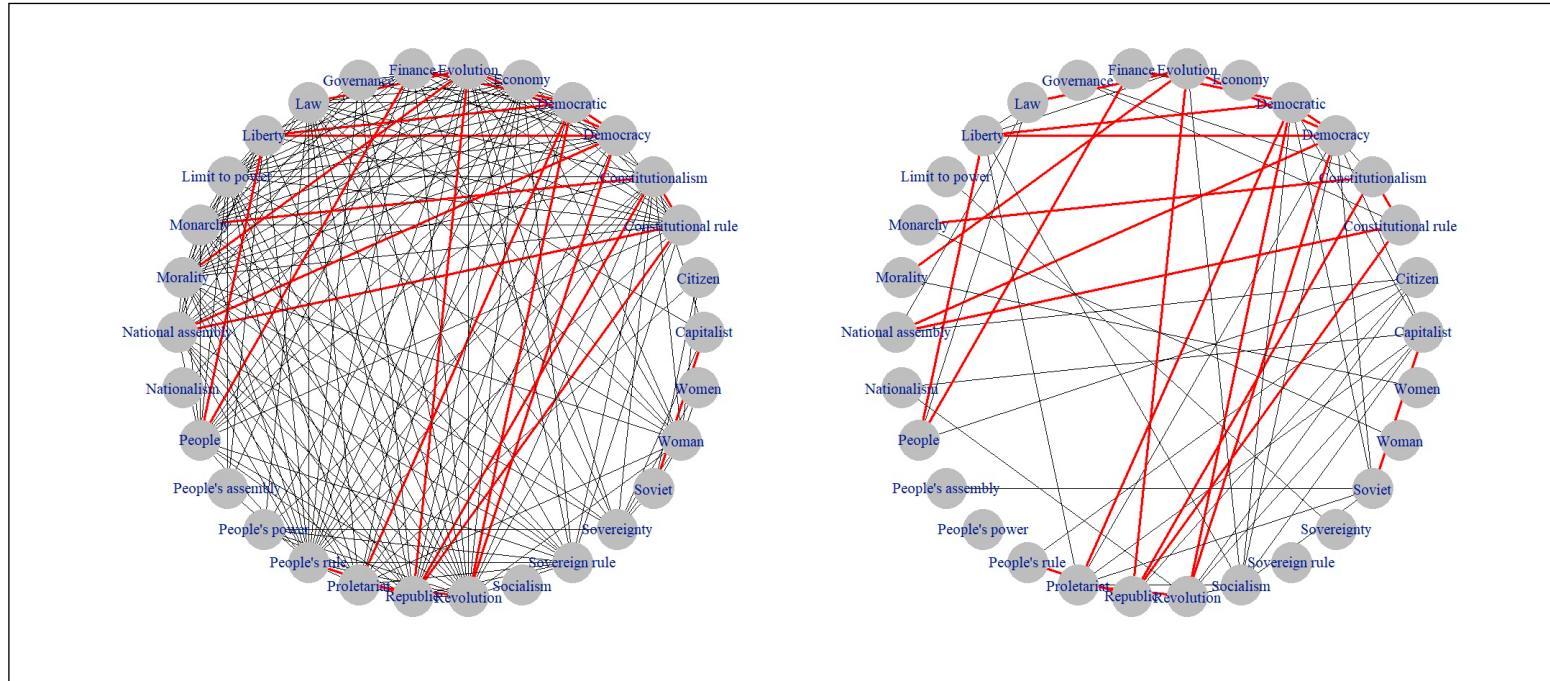


Fig. 7 The global networks of Liang Qichao (left) and Chen Duxiu (right). Each node in the network is a curated term. Two nodes are connected by an edge if the p -value of Pearson's chi-squared test is less than 0.001. This means the probability is less than 0.1% based on the observed writing, if it is assumed that the two terms independently occurred as keywords among all the writing. The edges in red are shared by both men.

that Chen remained a true Trotskyist until the end of his days, and that Chen's ultimate goal was not a proletariat dictatorship nor a capitalist democracy, but a socialist democracy.⁷⁸

6. References

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78 Zheng Chaolin, "Chen Duxiu and the Trotskyists," in Gregor Benton ed., *Prophets Unarmed: Chinese Trotskyists in Revolution, War, and Return from Limbo* (Chicago: Haymarket Books, 2017), 681.

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7. Appendix

Time	Betweenness Centrality	Degree Centrality
LQC 1st period (1892–1898)		
Economy	0.044334975	8
People	0.044334975	8
Governance	0.030377668	7
National Assembly	0.030377668	7
Law	0.054187192	4
Limit to Power	0.02955665	2
LQC 2nd period (1899–1912)		
Constitutionalism	0.044922927	19
Liberty	0.034782288	19
Republic	0.026061903	18
Revolution	0.018253169	18
Morality	0.010895194	16
People	0.017464405	16
Citizen	0.013883202	15
Sovereignty	0.014930178	15
Law	0.018377388	15
Democratic	0.003775883	14
People's power	0.005309339	14

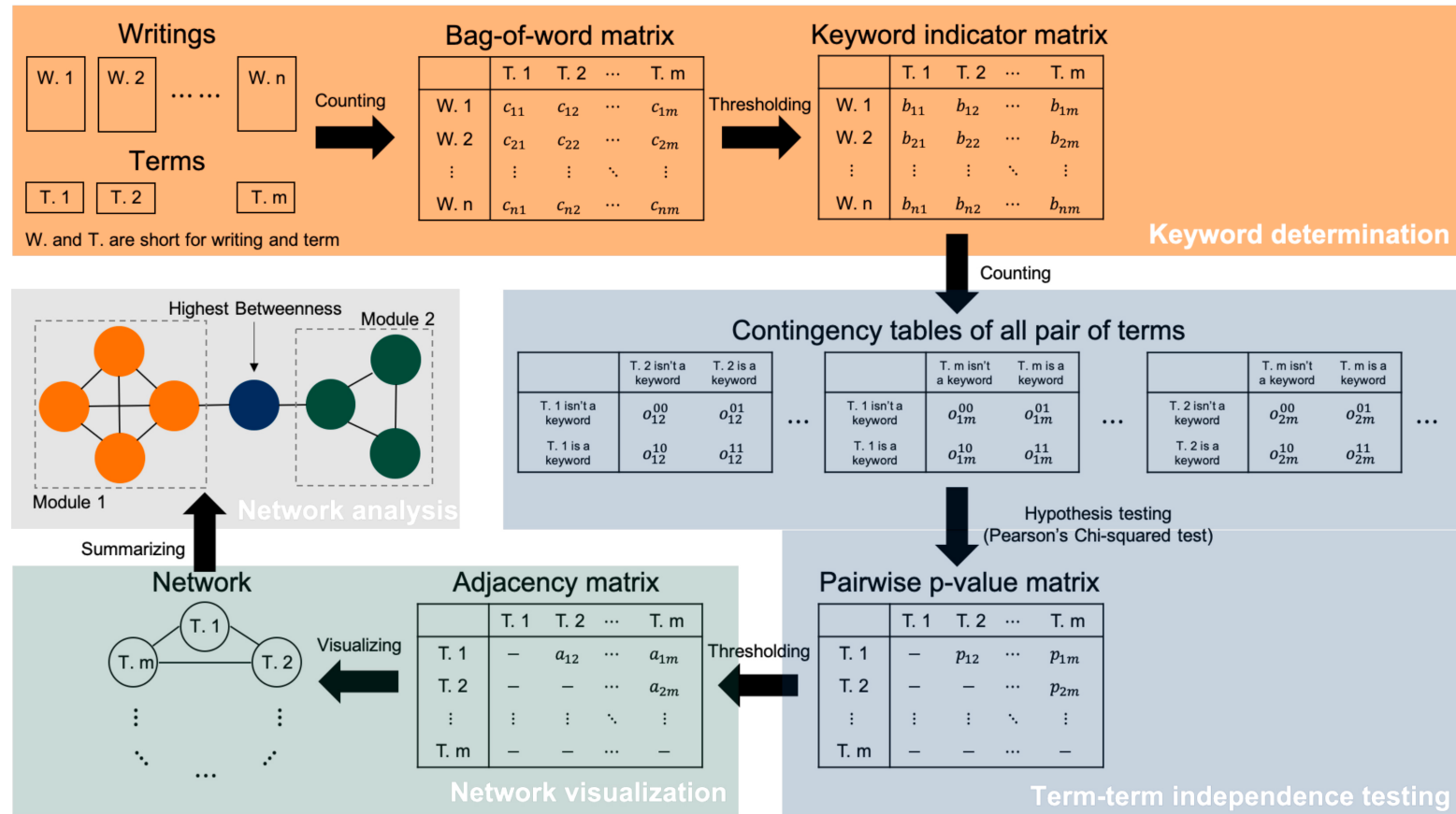
Time	Betweenness Centrality	Degree Centrality
National assembly	0.010232515	13
Socialism	0.015845737	13
Limit to Power	0.012112327	12
Woman	0.016059078	12
Evolution	0.001443623	11
Governance	0.003343783	9
Economy	0.004679803	9
Finance	0.003920361	7
Constitutional rule	0.001724138	7
Women	0.000307882	3
LQC 3rd period (1913–1920)		
Sovereignty	0.201642036	13
Constitutional rule	0.118988975	12
Constitutionalism	0.050639221	11
Limit to Power	0.039449918	10
Liberty	0.024448745	10
Governance	0.02559817	9
Republic	0.023956134	9
Evolution	0.001583392	7
Revolution	0.003571429	7
Capitalist	0.002216749	6
Socialism	0.002216749	6
Morality	0.001172883	6
Democracy	0.002216749	6
Democratic	0.002216749	6
Soviet	0.002216749	6
Finance	0.055829228	3
National assembly	0.005541872	5
People	0.024753695	5

Time	Betweenness Centrality	Degree Centrality
Law	0.003899836	4
Citizen	0.001436782	4
LQC Global (1892–1920)		
Morality	0.071705107	19
Revolution	0.084526735	17
Sovereign rule	0.065035601	17
Constitutional rule	0.031406228	16
Constitutionalism	0.071610575	16
Republic	0.018140722	15
Evolution	0.014900996	14
Democratic	0.008729762	14
Monarchy	0.024818548	14
People	0.017100007	14
People's rule	0.021361808	14
Proletariat	0.003849446	12
Law	0.068090905	12
Limit to Power	0.011714273	11
National assembly	0.002256729	10
Liberty	0.064350122	8
Democracy	0.003974884	8
Finance	0.021337945	7
Woman	0.067763018	7
Sovereignty	0.009461256	6
Economy	0.00249814	5
Soviet	0.009537965	3
Governance	0.000410509	2
CDX 1st period (1897–1919)		
Constitutionalism	0.009852217	2
National assembly	0.002463054	2

Time	Betweenness Centrality	Degree Centrality
People's power	0.007389163	2
Republic	0.007389163	2
CDX 2nd period (1920–1929)		
Proletariat	0.05090312	8
Revolution	0.024220033	6
Capitalist	0.011288998	5
Democratic	0.005541872	5
Evolution	0.045566502	5
Socialism	0.008415435	5
Citizen	0.028325123	4
People	0.033251232	4
Liberty	0.008004926	3
Law	0.016009852	3
CDX 3rd period (1930–1942)		
Soviet	0.033661741	5
Capitalist	0.022577997	4
Revolution	0.061165846	4
Proletariat	0.003284072	3
Republic	0.022167488	2
Citizen	0.051724138	2
Constitutionalism	0.039408867	2
Global (1897–1942)		
Democracy	0.017423	8
Capitalist	0.017171	7
Democratic	0.0251	7
Liberty	0.053249	7
Proletariat	0.017171	7
Soviet	0.03908	7

Time	Betweenness Centrality	Degree Centrality
Constitutionalism	0.036166	6
Revolution	0.019171	6
Socialism	0.009905	6
Evolution	0.055665	5
People	0.017734	5
Citizen	0.018227	4
Law	0.039702	3
Republic	0.014368	3
People's assembly	0.000821	2
National assembly	0.00821	2

Appendix A: Table of high betweenness centrality and degree centrality of LQC and CDX keywords, arranged in order of degree size.



Appendix B: Workflow chart.