The Journal of
HISTORICAL
NETWORK
RESEARCH

5 | 2021
special issue

Beyond *Guanxi*: Chinese Historical Networks

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LUXEMBOURG CENTRE FOR
CONTEMPORARY AND DIGITAL HISTORY

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DOAJ DIRECTORY OF OPEN ACCESS JOURNALS

Imprint

Université du Luxembourg 2021

Luxembourg Centre for Contemporary and Digital History (C²DH)
Université du Luxembourg
Belval Campus
Maison des Sciences Humaines
11, Porte des Sciences
L-4366 Esch-sur-Alzette

The publication of this special issue was in part supported by the Max Weber Foundation and the Fritz Thyssen Foundation.

ISSN 2535-8863

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Typesetting
text plus form, Dresden, Germany
Cover image
Chinese star chart, British Library, Or.8210/S.3326 recto,
https://www.bl.uk/collection-items/chinese-star-chart
Copyediting
Andy Redwood, Barcelona, Spain

Published online at
https://doi.org/10.25517/jhnr.v5i1

The Journal of HISTORICAL NETWORK RESEARCH

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Post WWI Chinese Revolutionary Leaders in Europe

Journal of Historical Network Research 5 (2021) 187–232

Keywords Chinese Communist Party, Zhou Enlai, Liu Shaoqi, Deng Xiaoping, Soviet Returned Leaders, network analysis

Abstract This article is an exploration of a leadership network of 133 Chinese revolutionary leaders who were trained in Western Europe and the Soviet Union during the 1920s. These leaders are in a dataset called Soviet Returned Leaders (SRL). The article utilizes quantitative, geospatial, and network analytical methods as well as proposing two approaches to expand network visualization utility and understanding. The results demonstrate that there are two groups within the SRL, namely those who went to both Western Europe and the Soviet Union (the Euro-Soviet Group) and those who went solely to the Soviet Union (the Soviet Group). The new network dissection techniques and network graphs reveal the importance of both well-known and relatively unknown individuals who may be potentially influential actors indicating that this initial historical network approach to biographical data affords an additional means of studying these important historical individuals.

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I. Introduction*

As he lay ill in 1923, Vladimir Lenin dictated his last published article which concerned his hopes for continuing the revolution. Disappointed in the prospects for revolution in the western countries, Lenin's new faith was in the eastern countries who were already "drawn into the revolutionary movement."[1] Thousands of miles away, writing in February 1945 at the end of another World War, Zheng Chaolin (鄭超麟 1901–1998), recounted his time in the Soviet Union in 1923 while Lenin was alive. Zheng was in Moscow for training in 1923, after three years in France as a worker-student.[2] His written account of twelve Chinese traveling to the land of revolution and the experiences they had in Moscow is compelling reading.[3] It was Zheng Chaolin's generational cohort who adopted communist ideology with a focus on Leninism. They led the Chinese revolution for three decades and ruled a nation for another four decades after the 1949 revolution. The Soviet experience was a dynamic episode in Chinese Communist Party (CCP) political history. Important revolutionaries among the Soviet Returned Leaders who are studied in this article include early CCP martyrs like Cai Hesen (蔡和森 1895–1931), Zhao Shiyan (趙世炎 1901–1927), Xiang Jingyu (向警予 1895–1928), Qu Qiubai (瞿秋白 1899–1935), and Zhang Tailei (張太雷 1898–1927). It also includes longer lived, powerful leaders such as Zhou Enlai (周恩來 1898–1976), Liu Shaoqi (劉少奇 1898–1969), Zhu De (朱德 1886–1976), Deng Xiaoping (鄧小平 1904–1997), Nie Rongzhen (聶榮臻 1899–1992), Cai Chang (蔡暢 1900–1990), Li Fuchun (李富春 1900–1975), Zhang Wentian (張聞天 1900–1976), Wang Ming (王明 1904–1974), Qin Bangxian (秦邦憲 1907–1946), Ye Jianying (葉劍英 1897–1986), Wang Jiaxiang (王稼祥 1906–1974), and Yang Shangkun (楊尚昆 1907–1998).

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* **Acknowledgements:** I would like to acknowledge two grants that allowed the initial creation of the Chinese Biographical Database which is the source of the SRL data subset. These grants are from the Chiang Ching-kuo Foundation and the Idaho Higher Education Major Research Grant program. I benefited from collaborations and help from Chen San-ching, Yves Chevrier, Christian Henriot, Jean-Louis Boully, Liu Guisheng, and Zhu Yuhe. For original entry in the CBD, the help of Zhou Baodi and Eric Barnes was excellent and in updating the database I am indebted to Howie X. Lan, John Bowen, Tan Hongxing, and Wu Yiwei.
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1 Vladimir Il'ich Lenin, *The Lenin Anthology,* trans. Robert C Tucker (New York: WW Norton & Company, 1975), 745–55.

2 Zheng Chaolin, Interview, Shanghai, interview by Marilyn Levine and Zhu Yuhe, October 29, 1985; Zheng Chaolin, Interview, Shanghai, interview by Marilyn Levine and Zhu Yuhe, June 18, 1990.

3 Zheng Chaolin, *An Oppositionist for Life: Memoirs of the Chinese Revolutionary Zheng Chaolin,* trans. Gregor Benton (Atlantic Highlands, N.J.: Humanity Books, 1997), xxii.

This article will first present a historical introduction to the Western European and Soviet Union experiences of these Chinese leaders. Second, there will be an introduction to a Soviet Returned Leaders data subset (hereafter called SRL dataset), with 133 individuals, including its composition, features, attributes, and limitations. Third, the article will share results from quantitative, geospatial, and network analyses, followed by some conclusions. The research questions that underlie this study are twofold. First, what can these kinds of research approaches contribute to a new understanding of Chinese revolutionary leaders? Second, can historians develop methods that offer better clarity and visualization of an overall network and its internal structure-function?

2. Historical Context of the Soviet Returned Leaders

2.1 From Worker-Students to Communist Party Members, 1919–1923

In the early twentieth century, the Chinese youth were challenged as a generation at several key historical turning points. The civil service examination, the path to an official career, was abolished in 1905, alongside other reforms under the Qing Dynasty. The major challenge for the youth was to save the nation by "finding a new path" as the nascent republic that emerged after the 1911 Revolution was not robust and devolved into warlordism and intrusive foreign imperialism. Debates on eastern and western philosophies and exploration of ideologies were framed in a larger conversation about commitment to social reform or political revolution. To put it simply, the significance of selecting a life purpose during this era affected this generation in new ways, which expanded their options.[4] The post-WWI youth activism culminated in the nationwide May Fourth movement to protest against China signing the Versailles Treaty. Students were galvanized as activists to seek a better future by following new ideas. They could not rely on the older generation to lead them and felt a strong sense of zeal to resolve the fate of the nation.

4 Chow Tse-tung, *The May 4th Movement: Intellectual Revolution in Modern China,* 5th Printing edition (Cambridge, Mass.: Harvard University Press, 1960); Wang Y. C., *Chinese Intellectuals and the West, 1872–1949* (The University of North Carolina Press, 1794); Lin Yusheng, *The Crisis of Chinese Consciousness: Radical Antitraditionalism in the May Fourth Era* (Ann Arbor, Mich.: University of Michigan Press, 2000); Arif Dirlik, *The Origins of Chinese Communism* (New York: Oxford University Press, 1989); Alexander Pantsov, *Bolsheviks and the Chinese Revolution 1919–1927* (Honolulu: University of Hawai'i Press, 2000); Peter Gue Zarrow, *Anarchism and Chinese Political Culture* (New York: Columbia University Press, 1990); Hans J Van de Ven, *From Friend to Comrade: The Founding of the Chinese Communist Party, 1920–1927* (Berkeley Calif.: University of California Press, 1991).

Among the many paths of exploration, the idea of study abroad was the vision of four prominent educational leaders, Li Shizeng (李石曾 1881–1973), Cai Yuanpei (蔡元培 1868–1940), Wu Zhihui (吳稚暉 1865–1953), and Wang Jingwei (汪精衛 1883–1944) who promoted the Travel to France Diligent-Work Frugal-Study Movement (赴法勤工儉學運動, work-study movement). At the end of WWI, the work-study movement was advanced due to the decimation of the French male population, which led these educational leaders to believe that there would be multiple openings in French factories. The idea was to encourage the Chinese youth to work with their hands alongside the oppressed laborers, earn money for a college education, and gain technical and scientific degrees to return to China and modernize the nation. Beginning in 1919, over 1,800 youth heeded this call and provincial governments even set up stipends and preparatory schools to encourage this path.

Although these four leaders had solid connections in France, Germany, and Belgium, the success of this scheme was limited by post-war economic realities in France. The worker-students lived in dire poverty and were politicized by several events, as well as their exploration of ideologies, particularly anarchism, communism, nationalism, and social democracy. During 1921, at the nadir of their impoverished living conditions, there were three political struggles that involved the worker-students: in February, led by Cai Hesen, a faction in the city of Montargis mobilized the February 28th Movement that advocated Chinese government stipends for the worker-students so that they could pursue studies and live adequately. The Montargis faction were the most progressive Marxists, and were opposed by a group led by Zhao Shiyan who believed in the work-study ethos of mutual-aid and self-sufficiency. Both factions organized others into Marxist study societies and other youth groups, and due to the unification efforts by Zhao Shiyan, the two factions merged to fight the government in the second struggle of 1921 – the Loan Struggle, where they successfully opposed a French loan to the Chinese warlord government of Xu Shichang (徐世昌 1855–1939). The Loan Struggle was notable for the public physical beating of the Chinese Foreign Minister's secretary who was forced into signing a renunciation of a possible loan. The *contretemps* with the Chinese Minister in both of these struggles did not bode well for the third struggle, known as the Lyons Incident in the fall of 1921, where the increasingly desperate worker-students were sidelined by the founders of the work-study movement who brought over 100 students from China to matriculate at the newly created Sino-French Institute at the University of Lyon. The angry worker-students mobilized and occupied a dormitory at Lyon University, whereupon over 100 of them were arrested and shortly thereafter deported back to China. The deported worker-students included Cai Hesen, Chen Yi (陳毅 1901–1972), and Li Lisan (李立三 1899–1967). Among the leaders who escaped from this imprisonment was Zhao Shiyan, who organized the European Branches of the Chinese Communist Organizations (旅歐中國共產主義組織, est. 1922, ECCO) during the summer and winter of 1922. The ECCO had branches in France, Germany, and Belgium. Most of the members belonged to the Youth

Corps, and members had to be formally reviewed for their ideological commitment in order to enter the Communist party.[5] These radicalized worker-students, particularly those who joined the ECCO, had an entire cohort of their membership return to China via study in the Soviet Union. As mentioned above, they contributed some of the most important CCP leaders of the Chinese revolution and post-revolution period.

The development of the ECCO needs to be contextualized by understanding several historical trends: the deterioration of the work-study movement, the Three Struggles of 1921, and the unique political milieu of Chinese youth activism in France and other European countries. Altogether these five political parties formed between 1922 and 1924. The five parties were the Anarchist Party or Surplus Society, (工餘社, est. 1922, GYS), the ECCO, the Chinese Social Democratic Party (中國社會民主黨, est. 1922, SDP), the European Branch of the Chinese Nationalist Party (中國國民黨旅歐支部, est. 1923, EGMD), and the Chinese Youth Party (青年黨, est. 1923, QND).[6]

Chinese political party activists were able to learn about Western ideologies, and to conduct recruitment, propaganda, and agitation activities in an environment with more access to materials and greater freedom. Chinese activists of all five parties were, however, closely watched by the French Sûreté. The extensive French surveillance on the Chinese activist community includes political analyses, reports from Asian and French agents in the field, and captured documents

5 Marilyn A. Levine, *The Found Generation: Chinese Communists in Europe during the Twenties* (Seattle: University of Washington Press, 1993); Paul Bailey, "The Chinese Work-Study Movement in France," *The China Quarterly,* no. 115 (1988): 441–61, http://www.jstor.org/stable/654865; Thomas Kampen, "Chinese Communists in Austria and Germany and Their Later Activities in China," *Asian and African Studies* XI, no. 1–2 (2007): 21–30; Tsinghua University Faculty Research Unit on the History of the Communist Party, *Fu Fa Qingong jianxue yundong shiliao* 赴法勤工儉學運動史料 *[Documents on the Travel to France Work-study movement]* (Beijing: Beijing chubanshe, 1979); Zhang Yunhou 張允侯, Yin Xuyi 殷敘彝, and Li Junchen 李峻晨, *Liu Fa Qingong jianxue yundong* 留法勤工儉學運動 *[The Travel to France Work-study movement],* 2 vols. (Shanghai: Shanghai renmin chubanshe, 1980); Chen San-ching 陳三井, *Qingong jianxue yundong* 勤工儉學運動 *[The Diligent-Work Frugal-Study Movement]* (Taipei: Zhengzhong shuju, 1981).

6 Marilyn A. Levine and Chen San-ching, *The Guomindang in Europe: A Sourcebook of Documents* (Berkeley, Calif.: Institute of East Asian Studies, University of California, Berkeley, Center for Chinese Studies, 2000); Marilyn A. Levine and Chen San-ching, "Communist-Leftist Control of the European Branch of the Guomindang, 1923–1927," *Modern China* 22, no. 1 (1996): 62–92, http://www.jstor.org/stable/189290; Shiu Wentang, "Les Organisations Politiques Des Étudiants Chinois En France Dans l'entre-Deux Guerres." (Paris, Université de Paris VII, 1990).

(letters, political agendas and meeting minutes, as well as other confiscated materials).[7]

In terms of the ECCO members, they saw their activities in France as training for their own revolution in China. Beginning in 1923 the CCP ordered several rounds of ECCO members to return to China through the Soviet Union, where the intention was to gain greater ideological depth and activist training in the cauldron of contemporary revolution. There were also more than a dozen Chinese activists in France who returned directly to China but visited the Soviet Union for conferences and/or study. The Soviet Union phase of their leadership development meant expanding their knowledge and joining with others in forming a broad network of revolutionaries trained abroad, which is discussed in the following sections.

2.2 The Soviet Experience and Bolshevist Loyalties, 1923–1926

Many of the Chinese who came from Western Europe pursued studies at the Toilers of the East University in Moscow (KUTV). Their arrival in the early 1920s occurred while Lenin was ill and before Stalin was able to exert his increasing power to affect the international education of foreign revolutionaries inside the country.[8]

During this period the Soviet Union was a poverty-stricken country, that had been devastated by the First World War, the Bolshevik Revolution, and a long Civil War. Discussing the conditions for several institutions, Josephine Fowler has explained that "[A]djusting to life in a city whose shortages of housing, fuel, and food were widespread, and where the students received far better accommodations than ordinary Muscovites, and whose culture was alien to both Chinese and

7 Levine and Chen, *The Guomindang in Europe,* 17–22; Marilyn Levine, "Conducting Research in the French Archives on Chinese Radicalism," *Republican China* 22, no. 2 (April 1997): 93–102.

8 Alexander Pantov [sic] and Daria A. Spichak, "New Light From the Russian Archives: Chinese Stalinists and Trotskyists at the International Lenin School in Moscow, 1926–1938," *Twentieth-Century China* 33, no. 2 (2008): 29–50, https://doi.org/10.1353/tcc.0.0001; Josephine Fowler, *Japanese and Chinese Immigrant Activists: Organizing in American and International Communist Movements, 1919–1933* (Rutgers University Press, 2007), https://doi.org/10.2307/j.ctt5hj7ms; Yueh Sheng, *Sun Yat-Sen University in Moscow and the Chinese Revolution; a Personal Account.,* International Studies, East Asian Series Research Publication; No. 7 (Lawrence, KS: Center for East Asian Studies, University of Kansas, 1971); Anna Belogurova, "Networks, Parties, and the 'Oppressed Nations': The Comintern and Chinese Communists Overseas, 1926–1935," *Cross-Currents: East Asian History and Culture Review* 6, no. 2 (2017): 558–82, https://doi.org/10.1353/ach.2017.0019.

Japanese students was immensely difficult. Along with room and board, students received clothing, shoes, textbooks, and stationery."[9]

Recounting the level of support and the attitudes that the Chinese students encountered, Zheng Chaolin noted that "Among the Soviet masses, young people accepted the [need for] revolutionary education, and there was no pretentiousness. But ordinary people still had the concept of rejecting foreigners."[10] Zheng also spoke of having several opportunities for cultural interchange and understanding. The ideological education the Chinese received, according to Zheng, was not in-depth, and there was no serious attempt to train the Chinese to learn the Russian language.

Few of those who arrived before 1924 were targets of the charged political atmosphere that would emerge in Moscow during the late-1920s – a fate that awaited *other* Chinese comrades who arrived after the mid-1920s. As Pantsov and Spichak concluded about these Soviet international educational institutions: "A history of the Chinese international schools in the USSR highlights the significance of the Soviet factor in the ideological and political evolution of the Chinese Communist movement in the 1920s and 1930s. The Soviet Communists tried to create the CCP cadres in their own image and likeness. To pursue this goal they financed, directed, and supervised the Chinese Communists. For this reason, the Stalinization of the Bolshevik Party that took place from 1924 to 1929 had a tremendous impact on the CCP. The Chinese students in Moscow were the first to feel it."[11]

Most of the Soviet Returned Leaders explored in this study were exemplars of adaptive revolutionary strategies and strongly influenced by Lenin, particularly in the concepts of party vanguard leadership, party discipline, and the need for a world revolution. As one of the most successful early revolutionaries, Zhao Shiyan proclaimed, "Lenin was the author of the 'October Revolution,' – the start of the World Revolution, [he is] the leader and guide for the entire world's proletariat, peasant masses, and all those who are oppressed. *Currently, Leninism is our banner for the oppressed; Leninism is our weapon; the entire world revolution – is our responsibility* [Emphasis Zhao's]."[12] Returning from the Soviet Union these CCP revolutionaries would continue to work towards a Bolshevik model of revolution in China.

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9 See Fowler, *Japanese and Chinese Immigrant Activists,* 70.

10 Zheng Chaolin, Interview, October 10, 1985, Beijing.

11 Alexander V. Pantov [*sic*] and Daria A. Spichak, "New Light from the Russia Archives."

12 Zhao Shiyan, "Lieningzhuyi zhi lilun yu shiji" 列寧主義之理論與實際 [The Theory and Practice of Leninism], in *Zhao Shiyan wenji* 趙世炎文集 (Chengdu: Sichuan remin chubanshe, 1984), 393–94.

3. Composition, Features, Attributes, and Limitations of the SRL Dataset

The SRL is a dataset of 133 individuals and 202 attributes from the Chinese Biographical Database (CBD) that includes 2,109 individuals and 840 attributes. The CBD was created in 1997–1998 and was available online for queries and reports until 2006. Current CBD work revolves around several datasets to analyze various individuals and groups who had common affiliations. The categories of attributes include: 1. Basic Biographical information (full name, Chinese characters, traditional and simplified, birth year, birth date, death year, lifespan, birth city, birth province, latitudes/longitudes for birth cities, gender, web links, and 2,093 comments); 2. Career; 3. Affiliations; 4. Education; 5. Positions; 6. Youth Activities; and 7. Historical Events. The CBD also includes other data tables such as Alternative Names, Family, Locator, and Sources, which have multiple citations for most individuals.

The CBD and SRL use 2-mode data. This is similar to the Southern Women study by Davis et al. published in 1941.[13] Two-mode data are simply a table of individuals in rows and attributes in columns which, if graphed as a network, produce two types of nodes or points, i.e., individuals or attributes, but with connections only to the other type and not to the same type, e.g., there would be no data on person versus person since this was not recorded in the original table. Conversion to a 1-mode table thus results in only individuals versus all other individuals, or attributes versus all other attributes. Since this is a biographical based network study, the simple choice was to use those two- or one-mode measures that yielded the best concordance with history.[14]

The SRL dataset has two primary subgroups: A Euro-Soviet group (N = 64) who had experiences in Europe and the Soviet Union; and a Soviet group (N = 69) who only traveled to the Soviet Union for training. Because of the importance of these revolutionaries to Chinese history, the idea is to understand the network

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13 Allison Davis et al., *Deep South: A Social Anthropological Study of Caste and Class* (Chicago: University of Chicago Press, 1941). For a deeper insight about how this data has been utilized, there are 21 studies reviewed in Linton Freeman, "Finding Social Groups: A Meta-Analysis of the Southern Women Data," in *Dynamic Social Network Modeling and Analysis: Workshop Summary and Papers,* by Ronald L. Breiger, Kathleen M. Carley, and Philippa Pattison (Washington, D.C.: National Academies Press, 2003), 1–39.

14 Stephen P. Borgatti, "Two-Mode Concepts in Social Network Analysis," *Encyclopedia of Complexity and System Science* 6 (2009): 8279–91. For a more in-depth discussion of the CBD, including an extended discussion of two-mode data, documentation, and composition, see "Biography for Historical Analysis: A Chinese Biographical Database" in this issue of the *Journal of Historical Network Research.* The CBD [Chinese Biographical Database] should not be confused with the CBDB [China Biographical Database], which is developed by Harvard University, Academia Sinica, and Peking University and focuses on pre-modern China.

by analyzing a large number of attributes. Among the general features of the SRL dataset are:

- The largest subgroup within the SRL are the 121 members of the Chinese Communist Party. Over a third of these individuals were Central Committee members and 22 percent joined the Politburo.
- There are 11 females (8 percent) in the SRL.
- While KUTV has 104 of the 133 SRL individuals, there were matriculations at other Soviet institutions such as 10 individuals who attended the International Lenin School.
- There are 31 members of the Chinese Nationalist Party (國民黨 GMD) in the SRL, which includes Jiang Jieshi (蔣介石 1887–1975), and his son Jiang Jingguo (蔣經國 1910–1988). Another GMD member was Chen Chunpu (陳春圃 1900–1966) who followed Wang Jingwei.[15] The majority of the GMD members in this group were Communists who joined because of the United Front (1924–1927), which was a collaboration between the GMD and the CCP. The collaboration's main focus was the Northern Expedition (1926–1927), a military expedition to eradicate the warlords.
- There are nine members of the so-called "Twenty-eight Bolsheviks": Chen Changhao (陳昌浩 1906–1967), Qin Bangxian, Shen Zemin (沈澤民 1900–1933), Wang Jiaxiang, Wang Ming, Wang Shengdi (汪盛荻 1899–1950), Xia Xi (夏曦 1901–1936), Yang Shangkun, and Zhang Wentian. These leaders had a great impact, but based on the dates and locations of leadership, as demonstrated by Thomas Kampen, it does not appear that they were either as efficacious as a block of leaders or necessarily identified exclusively with their "group", as is often depicted.[16] The current study supports Kampen's analysis.
- There are seven Trotskyists including: Zheng Chaolin, Yin Kuan (尹寬 1897–1967), Liu Renjing (劉仁静 1902–1987), Wang Fanxi (王凡西 1907–2002), Peng Shuzhi (彭述之 1895–1983), Shi Yisheng (施益生 1902–1993), and Wang Zekai (汪澤楷 1894–1959). Although limited by disunity and incarcerations, the Trotskyists played important roles in both ideological and labor activities throughout the 1920s and 1930s.[17]

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15 Wang Jingwei led the leftist GMD and later headed the collaborationist government during WWII. Chen Chunpu was one of his chief officials.

16 Thomas Kampen, *Mao Zedong, Zhou Enlai and the Evolution of the Chinese Communist Leadership* (Denmark: NIAS Pub., 2000). Kampen argues that the focus of internal CCP dynamics during the Jiangxi period should be more on the role of leaders such as Zhou Enlai or Zhang Wentian, and not a dichotomy between the so-called Twenty-eight Bolsheviks and Mao Zedong. Kampen clearly demonstrates this group had powerful leaders, but they were not necessarily a group that acted as a unified bloc.

17 For overviews of Chinese Trotskyites, and particular attention to activities in the Soviet Union see: Zheng Chaolin, *An Oppositionist for Life;* Gregor Benton, *Prophets Unarmed: Chinese Trotskyists in Revolution, War, Jail, and the Return from Limbo,* Historical Ma-

Every individual in a network potentially has a very large number of attributes that determine their position in an ever-evolving dynamic network. A systematic exploration of all these attribute correlations is desirable but is limited by the human mind in terms of calculation. Limiting these attributes to a few, or even one, necessitates subjective choices and therefore weighting. The opportunity here is that the greater the number of attributes the greater the statistical strength. Furthermore, choosing obvious differentiating attributes as primary or sole characteristics for a network may miss minute or inconspicuous attributes that could be critical to a network structure and its operation. This study uses the complete biographical record with no *a priori* weighting or elimination of rare attributes in order to let the analyses reveal the network *in toto,* so that one can then explore what was revealed in terms of importance.

A current limitation of the SRL at this time is the absence of time series data. The SRL is also not a full population study of all those who studied or attended conferences in the Soviet Union. However, the SRL includes a broad sample of medium and lesser-known individuals from various groups as well as many prominent political leaders (see Appendix 2 for full listing).

4. Quantitative and Geospatial Analyses of the SRL

4.1 Analysis of Birth Year, Death Year, and Lifespan

A brief statistical analysis of birth year, death year, and lifespan illustrates the temporal cohesiveness of this cohort. Table 1 shows the range of birth year within 1–2 years of each other for both groups, with a later death year for the Soviet group.

The distribution in Fig. 1 shows that the Soviet group was generally a few years younger than the Euro-Soviet group. For example, after 1904 there are 19 individuals born in the Soviet group and only 1 member of the Euro-Soviet group. Perhaps the most dramatic difference is in Fig. 2 where there is a relatively large segment of the Euro-Soviet group who died between 1924 and 1931, especially during the capture and execution of CCP members in the April 12th coup of 1927. Twenty-one individuals – one-third of the Euro-Soviet cohort – perished, often after being tortured. Eleven members of the Soviet group, or 17 percent, died during the same period. In contrast, after 1931 the Soviet group members or 22 percent (N = 17) of their members died in encirclement campaigns, war against the

terialism Book Series (Leiden, The Netherlands: Brill, 2015); Gregor Benton, *China's Urban Revolutionaries Explorations in the History of Chinese Trotskyism, 1921–1952* (Atlantic Highlands, N.J.: Humanities Press, 1996).

Group No.	Individuals	Min	Max	Median	Mean	SD
Birth Year-Euro-Soviet	61	1877	1914	1899	1897	5.527
Birth Year-Soviet	69	1876	1912	1901	1899	7.239
Death Year-Euro-Soviet	58	1924	1998	1961	1957	26.29
Death Year-Soviet	69	1927	2008	1967	1963	24.97
Lifespan-Euro-Soviet	57	26	97	68	61	25.33
Lifespan-Soviet	69	26	101	69	63	23.47

Tab. 1 Comparison of birth year, death year, and lifespan for Euro-Soviet and Soviet groups in the SRL dataset. The Euro-Soviet group had missing data for individuals: birth year = 3, death year = 6, and lifespan = 7.

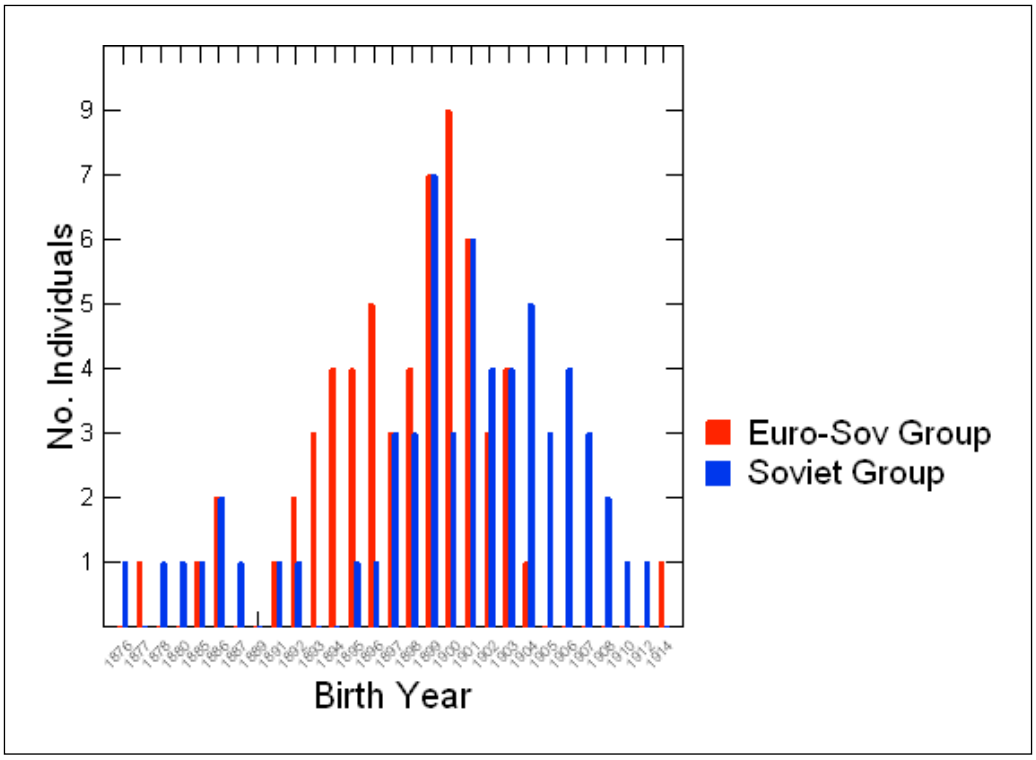

Fig. 1 SRL comparison of Euro-Soviet and Soviet groups for birth year.

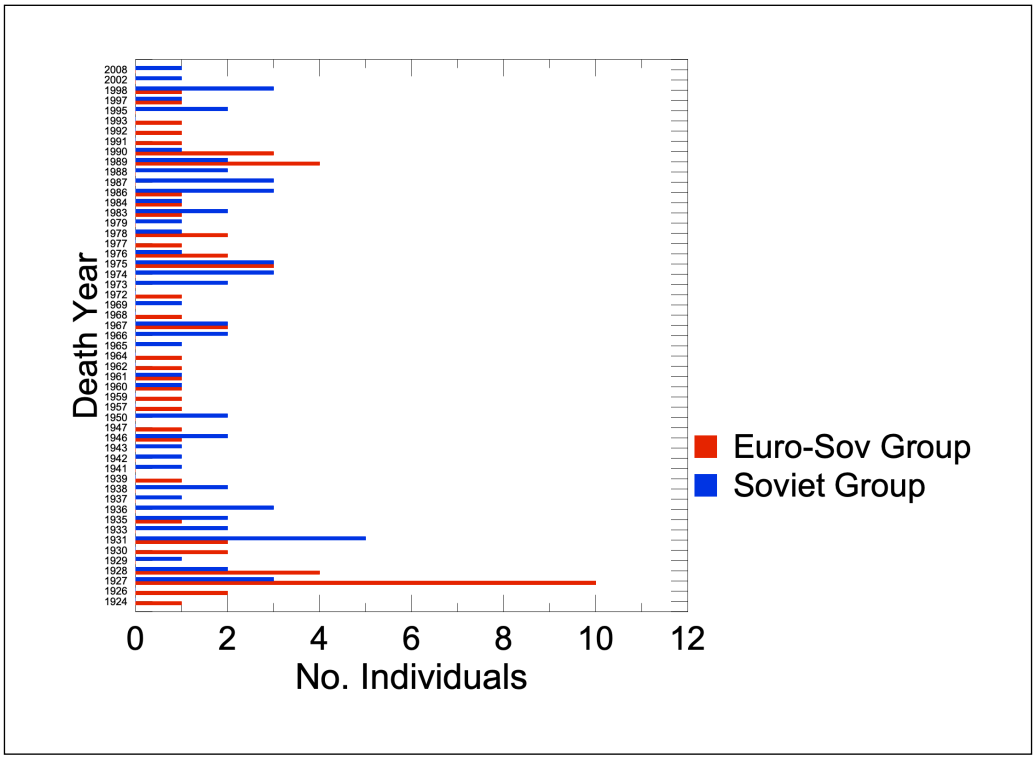

Fig. 2 SRL comparison of Euro-Soviet and Soviet groups for death year.

Japanese, and the Civil War, while the Euro-Soviet group lost only 4 individuals or 6 percent of their members. How were individuals impacted by the loss of their comrades during these periods? They likely had no time for grief or retraining but were concerned with survival and strategic adaptation; however, the sense of loss appears to be profound, as can be seen from commemorations at the time and decades later.

4.2 Geospatial Analysis of Regional Origins and Birth Cities

In examining the Soviet Returned Leaders, in general, provincial birth origin did correlate with the provincial population and showed a fairly consistent contribution from most provinces. A scatterplot of individuals from their respective provinces versus population showed the general relationship of increased participation with increases in provincial population (see Fig. 3). Performing a regression analysis (least squares) between the total number of individuals from their province and the provincial population demonstrates a very significant relationship (p-value = 0.041). It is notable that Hunan (N = 34) is an outlier, as it had 600% higher participation than other provinces. Sichuan (N = 25) had significant leverage due to its much larger population.

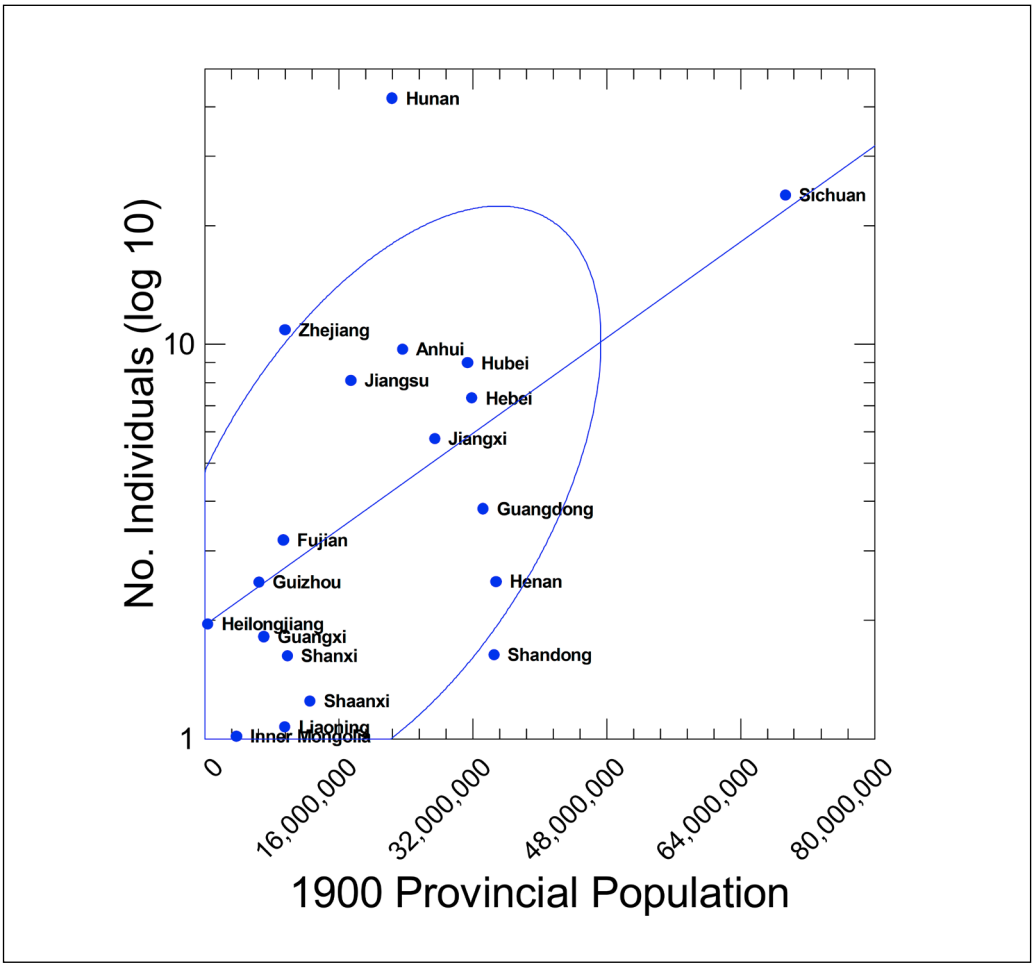

Fig. 3 Individual participation (N = 132) vs.1900 provincial population. Confidence sample ellipse chosen at p = 0.6827 with linear regression line. Source: Jan Lahmeyer, "Population Statistics: Historical Demography of All Countries, Their Divisions and Towns," 2006, http://www.populstat.info, retrieved June 30, 2019.

One possibility for the provincial role of Hunan and Sichuan might have been the clustering of participants at high population centers. Comparing the physical sizes of Hunan and Sichuan (respectively 210,000 and 485,000 square kilometers) with the 1900 population, one obtains a respective density of 106 and 142 individuals per square kilometer. There was an unusual number of Hunanese participants clustered around the broader Changsha region, while the Sichuan participants were more dispersed. In fact, Changsha and closely surrounding regions have the highest rate of the Soviet Returned Leaders in this cohort (N = 47) as can be observed in the cluster map in Fig. 4.

In examining the leadership from Hunan and Sichuan in historical terms of the Soviet Returned Leaders, it is clear that Hunan is an outlier in terms of the numbers of people involved who were sustained in their leadership roles throughout the twentieth century, particularly in the 1920s through the mid-1930s, and for some lasting beyond 1949 (e.g., Liu Shaoqi, Li Fuchun, and Cai Chang). The pattern of leadership roles for the Sichuan contingent of the Soviet Returned Leaders also reflects the high leverage of Sichuan (e.g., Deng Xiaoping, Nie Rongzhen, and Zhu De).

Figure 4 displays the distribution of birth city clusters of individuals. There are three centers where birth cities cluster together. From east to west in the middle of China there are 24 individuals from Jiangsu/Zhejiang, 47 individuals from Hunan and surrounding regions, and 25 Sichuanese from Chengdu/Chongqing. Provinces are large areas, and individual birth cities may be proximate to a border or be composed of cities clustered around a river, as is the case with birth cities along the Xiang River near Changsha. Birth cities can play an important role for individuals in terms of proximity to education and youth group activities in historical networks.

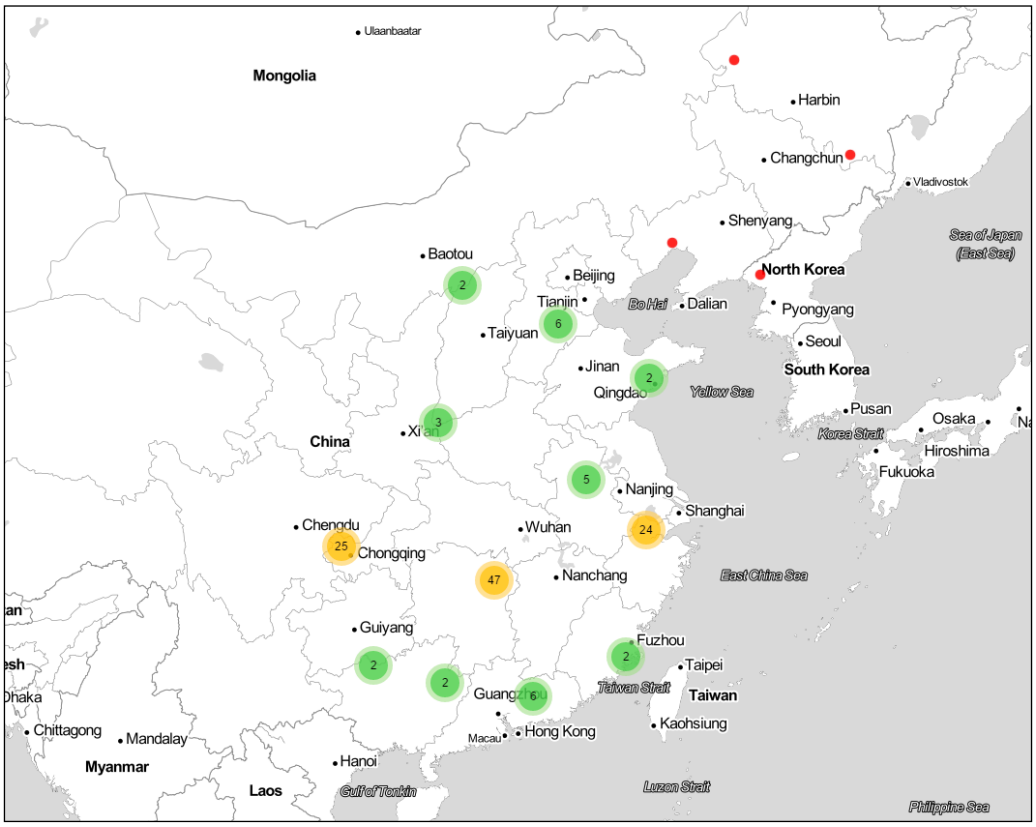

Fig. 4 Birth Cities clustered distribution of individuals for SRL (N = 130). Each red point represents a single individual. Three individuals missing.

5. Network Analyses of the SRL

5.1 Centralities

The centrality analyses shown in Table 2 are from 133 individuals by 202 attribute data (2-mode) and display the top 20 individuals sorted in descending order for the four measures of degree, Eigenvector, closeness, and betweenness centrality.[18]

There are some suggestive patterns that emerge in this analysis. First, Zhou Enlai is the highest ranked leader for all four measures and is followed in the top five ranks by Liu Shaoqi, Deng Xiaoping, and Zhu De, with Nie Rongzhen placed second in the first three metrics. The Euro-Soviet members consistently ranked higher in the top ten of the first three measures. Within the top ten rankings of the four centralities the Soviet group, Liu Shaoqi is joined by Zhang Wentian and Qu Qiubai. The betweenness measure, which measures how frequently an individual is placed in between other nodes has different rankings in the fourth column of Table 2. Particularly intriguing is the inclusion of GMD leaders Jiang Jingguo, Chen Chunpu, and Cao Chengde (曹承德 1903–1978), a female activist who later went to Taiwan.

As mentioned, Zhou Enlai is the most central individual in terms of all four centralities. He appears to function (as will be shown in the graphs below) in the network as a "boundary spanner,"[19] someone who was a key resource for communicating with other groups. In his research on organizational leadership teams, Michael Tushman explained, "Individuals filling these roles [as boundary spanners] are capable of translating contrasting coding schemes and therefore of acting as boundary spanners between the work unit and external information areas. Thus, information may flow...in a two-step fashion through a set of key persons who channel this information to their colleagues...These opinion leaders were sought after for advice and, in turn, influenced the decisions of the less active members of the social system."[20] Certainly, Zhou Enlai personified this role of spanning communication and influencing others throughout his career as a journalist in the early 1920s traveling throughout Europe, as a conduit to the Com-

18 Stephen P. Borgatti and Martin G. Everett, "Network Analysis of 2-Mode Data," *Social Networks* 19, no. 3 (August 1, 1997): 243–69, https://doi.org/10.1016/S0378-8733(96)00301-2.

19 Discussions of Zhou Enlai and the importance of Cai Chang and Li Fuchun were presented at a workshop, Marilyn Levine, "Revolutionary Roads: An Integrative Analysis Utilizing a Chinese Biographical Database" (Workshop, ERC ENP-China Project "Elites, Knowledge, and Power in Modern China," Aix-en-Provence, France, October 7, 2019), https://enepchina.hypotheses.org/.

20 Michael L. Tushman, and Thomas J. Scanlan "Special Boundary Roles in the Innovation Process," *Administrative Science Quarterly* 22, no. 4 (December 1977): 590–91.

Individual	Degree	Individual	Eigenvector	Individual	Closeness	Individual	Betweenness
Zhou Enlai	0.30542	*Zhou Enlai*	0.13697	*Zhou Enlai*	0.61873	*Zhou Enlai*	0.06836
Nie Rongzhen	0.21182	*Nie Rongzhen*	0.13329	*Nie Rongzhen*	0.58920	*Zhu De*	0.03495
Liu Shaoqi	0.20690	*Deng Xiaoping*	0.12623	**Liu Shaoqi**	0.58772	*Deng Xiaoping*	0.03247
Deng Xiaoping	0.20197	**Liu Shaoqi**	0.12377	*Deng Xiaoping*	0.58625	**Liu Shaoqi**	0.03026
Zhu De	0.20197	*Cai Chang*	0.12370	*Zhu De*	0.58625	**Jiang Jingguo**	0.02971
Cai Chang	0.18227	*Li Fuchun*	0.12359	*Cai Chang*	0.58045	**Wu Liangping**	0.02802
Zhang Wentian	0.16749	*Zhu De*	0.12077	**Zhang Wentian**	0.57617	**Qu Qiubai**	0.02568
Li Fuchun	0.16256	**Zhang Wentian**	0.11227	*Li Fuchun*	0.57475	**Zhang Wentian**	0.02427
Dong Biwu	0.15764	**Dong Biwu**	0.10954	**Dong Biwu**	0.57335	**Liu Yaxiong**	0.02294
Qu Qiubai	0.15764	**Zhang Guotao**	0.10747	**Qu Qiubai**	0.57335	**Cao Chengde**	0.01902
Ye Jianying	0.14778	*Li Weihan*	0.10746	**Ye Jianying**	0.57056	*Nie Rongzhen*	0.01883
Li Weihan	0.14286	*Wang Ruofei*	0.10741	*Li Weihan*	0.56917	**Kang Sheng**	0.01801
Zhang Guotao	0.14286	**Qu Qiubai**	0.10655	**Zhang Guotao**	0.56917	**Guo Huaruo**	0.01697
Zhao Shiyan	0.13793	*Li Lisan*	0.10470	*Zhao Shiyan*	0.56780	**Han Guang**	0.01618
Ulanfu	0.13300	Guo Longzhen	0.10353	**Ulanfu**	0.56643	**Ulanfu**	0.01588
Guo Longzhen	0.12808	**Ren Bishi**	0.10351	Guo Longzhen	0.56506	*Chen Qixiu*	0.01587
Jiang Jingguo	0.12808	**Ulanfu**	0.10302	**Jiang Jingguo**	0.56506	**Chen Boda**	0.01554
Li Lisan	0.12808	**Zhang Tailei**	0.10279	*Li Lisan*	0.56506	*Zhao Shiyan*	0.01439
Wang Ruofei	0.12808	**Yang Shangkun**	0.10162	*Wang Ruofei*	0.56506	*Cai Chang*	0.01418
Han Guang	0.12315	*Lin Wei*	0.10048	**Han Guang**	0.56370	**Chen Chunpu**	0.01359

Tab. 2 Four normalized centralities for Soviet Returned Leaders group obtained from 2-mode analyses showing highest 20 individuals. Centralities and names are sorted for highest scores. Italicized names are Euro-Soviet individuals and bolded names are Soviet individuals.

munist International in the 1930s, exhibiting political and military leadership from the mid-1920s through the 1940s, and in his role as the Foreign Minister expanding the PRC's legitimacy on the global stage. These positions attest to his capabilities to go beyond normal boundaries and to communicate within complex situations.[21]

There are also some individuals with high centralities that should be explored further, such as Nie Rongzhen,[22] who may have played a more significant role in CCP events than is commonly recognized, and Liu Shaoqi,[23] who is acknowledged as a key leader, but understudied. Particularly notable is the unassuming, yet nonetheless important wife-husband team, Cai Chang and Li Fuchun. Both Cai Chang and Li Fuchun have a high degree centrality and a high Eigenvector centrality, which indicates that a node is connected to individuals who are themselves highly connected. They also have very high closeness measures which emphasize the distance of an actor to others in the network by focusing on the distance from each actor to all others. However, in examining betweenness there is a lower ranking for Cai and Li. Betweenness is often tied to the idea of being a power broker. Therefore, as Cai Chang is ranked 19 (N = 0.1418) and Li Fuchun is ranked 37 (N = 0.0095) this might explain why this couple have not been extensively studied or remarked upon as a "power couple." Research might be conducted on how Cai and Li actually exercised their power and advantages within their networks.[24] Subsequent measures below will also demonstrate the impor-

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21 Zhou Enlai's long career and importance to the CCP has generated many books and articles, and he is cited in thousands of articles on pre- and post-1949 Chinese history. The general consensus is that Zhou was a key pragmatist, during a turbulent regime, who provided an anchor of rationality, but managed to maintain his position, by not attempting to take supreme power. This general idea is supported by this study, which attempts to deepen the understanding of Zhou Enlai's relationships with other leaders in the important Soviet returned leaders' network. For some sample biographies see: Kai-yu Hsu, *Chou En-Lai: China's Gray Eminence.* (Garden City, N.Y.: Doubleday, 1968); Chae-Jin Lee, *Zhou Enlai: The Early Years* (Stanford, Calif: Stanford University Press, 1994); Dick Wilson, *Zhou Enlai: A Biography* (New York, N.Y.: Viking, 1984); Gao Wenqian, Peter Rand, and Lawrence R. Sullivan, *Zhou Enlai: The Last Perfect Revolutionary* (New York: Public Affairs, 2008).

22 Nie Rongzhen, *Nie Rongzhen Huiyilu (Memoirs of Nie Rongzhen),* 3 vols. (Beijing: People's Liberation Press, 1983); Zemin Jiang, Interview, Beijing, interview by Marilyn Levine and Liu Guisheng, October 25, 1985.

23 Lowell Dittmer, *Liu Shao-Ch'i and the Chinese Cultural Revolution: The Politics of Mass Criticism* (Berkeley: University of California Press, 1974). Although mentioned, mostly as a key victim of the purge during the Cultural Revolution, Liu Shaoqi has not been extensively studied. His role in developing political training and policy decisions, and as can be seen in this study, his high centrality scores show he was a very important CCP leader.

24 In the multivariate analysis dendrogram (data not shown), Cai Chang and Li Fuchun form their own dyad when measuring distance via similarities of attributes. What is notable is that spousal information was not used as an attribute in these analyses. Ref-

tance of Cai and Li, who were present in all phases of the CCP revolution and post-1949 regime, as well as holding high-level party posts.

5.2 Network Cohesion, Scale, and Core-Periphery Analyses

The remainder of SRL analyses will be conducted by converting 2-mode to 1-mode, a conversion that results in only individual-individual results. All 1-mode matrices in this research were created via sums of cross-products. The sums of cross products yielded the best concordance with the historical record compared to ten other possible measures (Bonacich '72 was second best).[25]

Network cohesion values for the SRL dataset were computed as shown in Table 3, where the results include a short average path length, higher than typical clustering coefficient (due to an above average number of clusters or hubs), and a characteristically small world index.[26]

The small world value of 1.38 suggests a scale-free network. In order to test this, plots were made of the relative frequency (proportion) of the degrees for the individuals, which can be seen in Fig. 5 (panels A, B), and they display the characteristic right-hand tail with the highest degree individuals. The α exponent was 1.6 determined by best fit, which was in good agreement with the observed frequency with least-squares linear regression ($p = 0.000$). The linearity started breaking down at degree 23–24. These panels demonstrate the power law of a scale-free network. A scale-free network should also show linearity in a log-log plot of high degree individuals in the right-hand tail (Fig. 5C).[27] The large right-hand tail contained eight high centrality individuals comprising Zhou Enlai, Liu Shaoqi, Nie Rongzhen, Deng Xiaoping, Zhu De, Cai Chang, Li Fuchun, and Zhang Wentian. Figure 5C also displays a secondary set of moderately unique high degree individuals, who are important hubs: Dong Biwu (董必武 1886–1975), Qu Qiubai, Ye Jianying, Zhang Guotao (張國燾 1897–1979), Li Weihan (李維漢 1896–1984), Zhao Shiyan, Li Lisan, Ulanfu (烏蘭夫 1906–1988), Jiang Jingguo, and Ren Bishi (任弼時 1904–1950).

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erences to Cai Chang and Li Fuchun are in the context of CCP historical events, or encyclopedia entries, and Chinese historical dictionaries, but not focused biographies. The evidence here indicates that they are important players in this SRL dataset.

25 P. Bonacich, "Factoring and Weighting Approaches to Status Scores and Clique Identification," *Journal of Mathematical Sociology* 92 (1972): 1170–82.

26 Duncan Watts and Steven Strogatz, "Collective Dynamics of Small-World Networks," *Nature* 393 (1998): 440–42.

27 A scale-free network should follow the general equation of $pk = Ck-\alpha$ where pk is the relative proportion of degree k, C a normalizing constant, and α is the networks characteristic exponent.

Average Path Length	1.003
Clustering Coefficient	0.9969
Small World Index	1.38
Density	0.9967

Tab. 3 SRL network values.

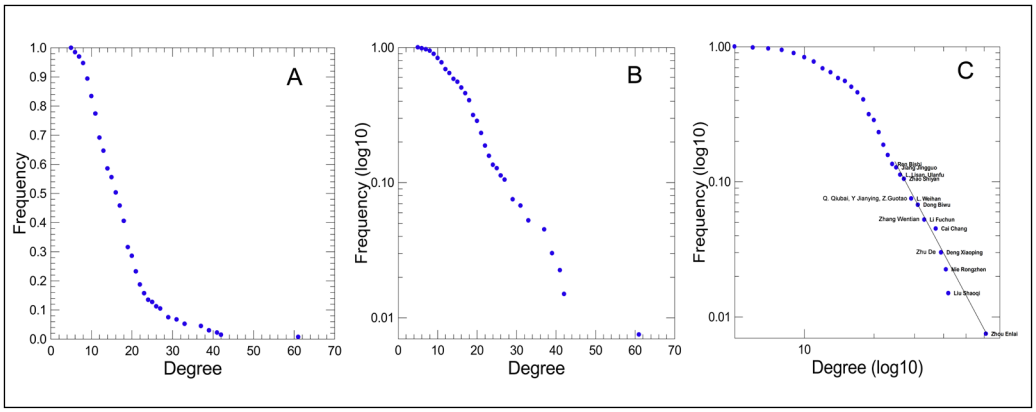

Fig. 5 Degree and frequency proportionality. (A) Degree vs. frequency curve. (B) Degree vs. log of frequency. (C) Degree vs. frequency (log-log).

These high degree individuals provide network shortcuts that not only increase the total communication and transfer speed but also link strangers together by shorter links which is important for participants facing difficult situations in their revolutionary activities. The presence of high degree individuals is created by two major dynamic processes, namely preferential attachment and fitness. A preferential attachment process is based on nodes preferring to link with a node that has been shown to attract other nodes,[28] while fitness can be defined as a node possessing traits that attract more nodes at the expense of their being less fit.[29] Both preferential attachment and fitness can change, which may be seen in growing as well as static networks. Not all individuals are equally successful in acquiring links. In this article, these would be the high degree centrality individuals like Zhou Enlai, Nie Rongzhen, Liu Shaoqi, Deng Xiaoping, and Zhe Du (see Table 2), who have far more links than other individuals.

28 Albert-Laszlo Barabasi and Reka Albert, "Emergence of Scaling in Random Networks," *Science* 286 (1999): 509–12.

29 G. Caldarelli et al., "Scale-Free Networks from Varying Vertex Intrinsic Fitness," *Physical Review Letters* 89 (December 1, 2002): https://doi.org/10.1103/PhysRevLett.89.258702.

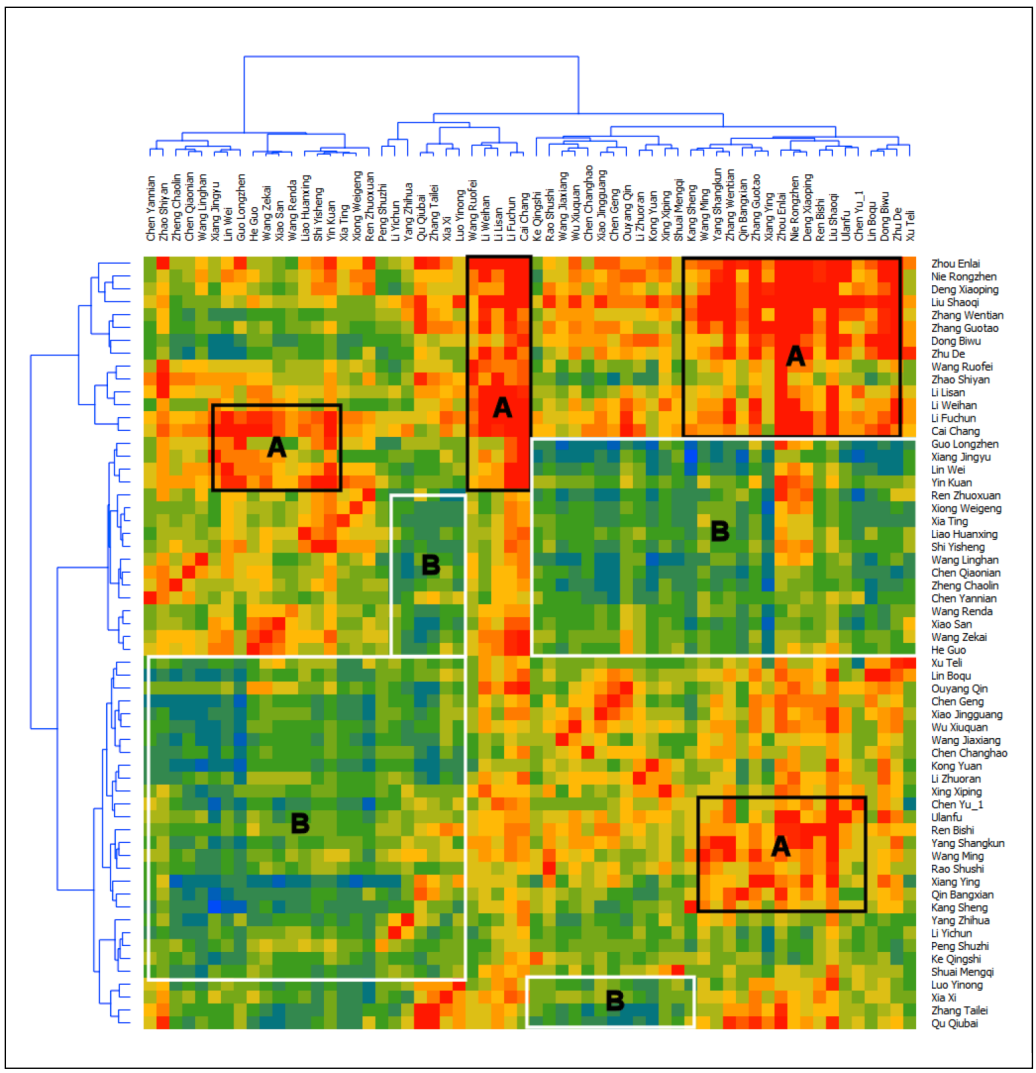

Fig. 6 SRL core degree centrality linkage levels for those individuals. Dark red, orange and yellow colors equal the highest density of connections, while green and blue are at the lower end of density levels. Boxes highlighted by black and marked A are the high intensity hotspots and the boxes highlighted by white and marked B are medium intensity hotspots.

Scale-free networks are more resilient to failure – meaning that the network is more likely than a random network to stay connected after the removal of randomly chosen nodes. This means that the network quickly disintegrates when nodes are removed according to their degree. Albert et al. claim that the Internet and WWW are highly resilient to random removal of nodes, but are highly vulnerable to deliberate attack on the nodes of highest degree.[30] In addition, with a scale free network one finds greater perturbation resistance, and the Soviet returned leaders network certainly survived many significant perturbations.

Key player analysis[31] of the SRL data found that network disruption could be achieved by either removing the optimal communication diffusers Cai Chang, Cai Hesen, and Qin Bangxian which created maximal fragmentation (0.045) and heterogeneity (0.045) or by removing Cai Chang, Cao Chengde, Deng Xiaoping, Li Fuchun, Nie Rongzhen, Shi Yisheng, Su Zhaozheng (蘇兆征 1885–1929), Xie Zeyuan (謝澤沅 n.d.), Yang Lin (楊林 1898–1936), Yang Shangkun, Yin Kuan, and Zhou Enlai who were key in terms of their linkages to as many others as possible. Removing key nodes such as Cai Hesen was quite disruptive along with the numerous deaths in 1927–1931, which caused the SRL network to react by going underground and into the countryside to protect itself. In terms of historical change in China during the twentieth century, this scale-free network evolved and survived as nodes were killed or assassinated.

Core-periphery analysis examines the individuals who are highly connected as well as those who are less connected and peripheral. Core individuals are well connected to other core individuals and to peripheral individuals, while peripheral individuals are not strongly connected to each other.[32] The intensity of relationships between the 60 core individuals is displayed in Fig. 6, which shows several high and medium hot spots (A, B) as subgroups within the core that are highly connected. The high (A) subgroups are marked by black boxes and indicate the highest linkages, while the medium high (B) subgroups are marked by white boxes. These significant subgroups are identified by individual names and allow one to see which clusters interact more with others.

The centrality, scale, and core-periphery analyses suggest distinct subgroup linkages that contain leadership hubs. A look at Table 2, and Figs. 5 and 6 reveals several individuals known for political and/or military leadership. In the history

30 Reka Albert, Hawoong Jeong, and Albert-Laszlo Barabasi, "Error and Attack Tolerance of Complex Networks," *Nature* 406 (August 3, 2000): 378–82.

31 Stephen P. Borgatti, "Identifying Sets of Key Players in a Social Network," *Computational and Mathematical Organization Theory* 12, no. 1 (April 2006): 21–34, https://doi.org/10.1007/s10588-006-7084-x.

32 Stephen P. Borgatti and Martin G. Everett, "Models of Core/Periphery Structures," 21, no. 4 (2000): 375–95; Stephen P. Borgatti, Martin G. Everett, and Jeffrey C. Johnson, *Analyzing Social Networks,* 2nd ed. (Los Angeles: Sage Publications, 2018).

of the Chinese revolution the changes in the CCP power configurations were dramatic from the mid-1920s onwards and it is important to note that many of the SRL individuals identified in the above analyses survived as powerful leaders.[33]

5.3 Network Internal Structure: Triad Census Analysis, Subgroups, Ego Networks, and Pruning Tables

Triad analysis provides one method for studying the internal structure of a network. Triads of three individuals are the smallest possible network that contains more than two individuals. Triads are also where one sees the simplest occurrence of hierarchy. In 1908, Georg Simmel proposed that a triad reduces the individuality of its members to fully connected triad norms, as information is shared which creates trust with feedback, and conflicts between individuals can be mediated by the third individual, so that the triad behaves as a group rather than an individual. This also means that less connected triads may be less bound by group norms.[34]

A triad census enumerates all of the patterns of the actual links at the three-individual level. In the SRL group the network ties are undirected, which means there only are four possible triad types out of the 16 possible. The articulation of triadic analysis structure was developed by Holland and Leinhardt.[35] The triad types for undirected ties are: 003, which contains three isolated ties; 102, where two ties are not connected to the third; 201, where the third tie does not occur, creating a hole in the network that may or may not change over time; and 300, where three ties are fully connected creating a closed structure. The four types of undirected triadic relations are illustrated in Fig. 7, with the results presented in Table 4.[36]

In Table 4, it can be observed that although the ratios of observed versus expected for types 102 and 003 are large, this was due to very few triads and low expected

33 Victor Shih, Shan Wei, and Mingxing Liu, "Gauging the Elite Political Equilibrium in the CCP: A Quantitative Approach Using Biographical Data," *The China Quarterly,* no. 201 (2010): 79–103, http://www.jstor.org/stable/20749349.

34 Kurt H. Wolff, *The Sociology of Georg Simmel* (The Free Press., 1950), http://archive.org/details/sociologyofgeorg030082mbp.

35 Paul W. Holland and Samuel Leinhardt, "A Method for Detecting Structure in Sociometric Data," *American Journal of Sociology* 76, no. 3 (1970): 492–513. Also see Tore Opsahl, "Triadic Closure in Two-Mode Networks: Redefining the Global and Local Clustering Coefficients," *Social Networks,* no. 35 (2013): 159–67.

36 Triads are tabulated by computer for all possible triplets in a network (383,176 for these data). The triads code types, as articulated by Holland and Leinhardt, consist of three parts: the number of mutual, asymmetric, and null pairs linkages that they contain. Thus, a 201 triad contains two mutual, no asymmetric, and one null pair.

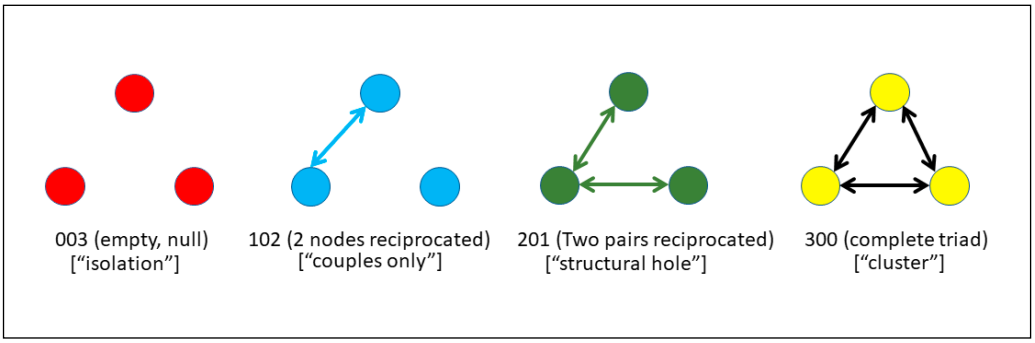

Fig. 7 The four possible triadic analysis structures for undirected ties.

Triad Type	Observed(ni)	Expected (ei)	Ratio (ni-ei)/ei
102	128	0.00	940.6[a]
003	2	0.00	381.8[a]
201	3,537	12.39	284.6
300	379.6[a]	375.8[a]	0.01

Tab. 4 Triad analysis of SRL via Pajek. [a] = in thousands.

values.[37] The triad type 300, a fully closed cluster represents over 90 percent of the triads in this analysis. Type 300 results are not unexpected due to the strong connections between many SRL individuals. Type 201 (structural hole) is interesting, as it provides for a gatekeeper or broker (Fig. 7) who regulates information to others, or possibly the remainder of the network.[38] It is not clear what the unexpected occurrence of type 102 (couples only) means although the ni/ei ratios with zero expected values make interpretation difficult. The reported chi-square was highly significant (p = 0.001) although the presence of zero expected values urges caution.

Another method for detecting internal structure is through visualization of similarities (VOS) cluster detection. This can be seen in Fig. 8, which displays a configuration of the SRL network with colored clusters. The aim of VOS is to pro-

37 A triad census of a network simply reports the triad type code, the observed number of that particular triad code (ni), the expected number (ei) for that triad code, the ratio of observed to expected number, the model(s) for the network, and a chi-square. The expected number is calculated based on network size and number of linkages.

38 Ronald S. Burt, *Structural Holes: The Social Structure of Competition* (Cambridge, Mass.: Harvard University Press, 1995).

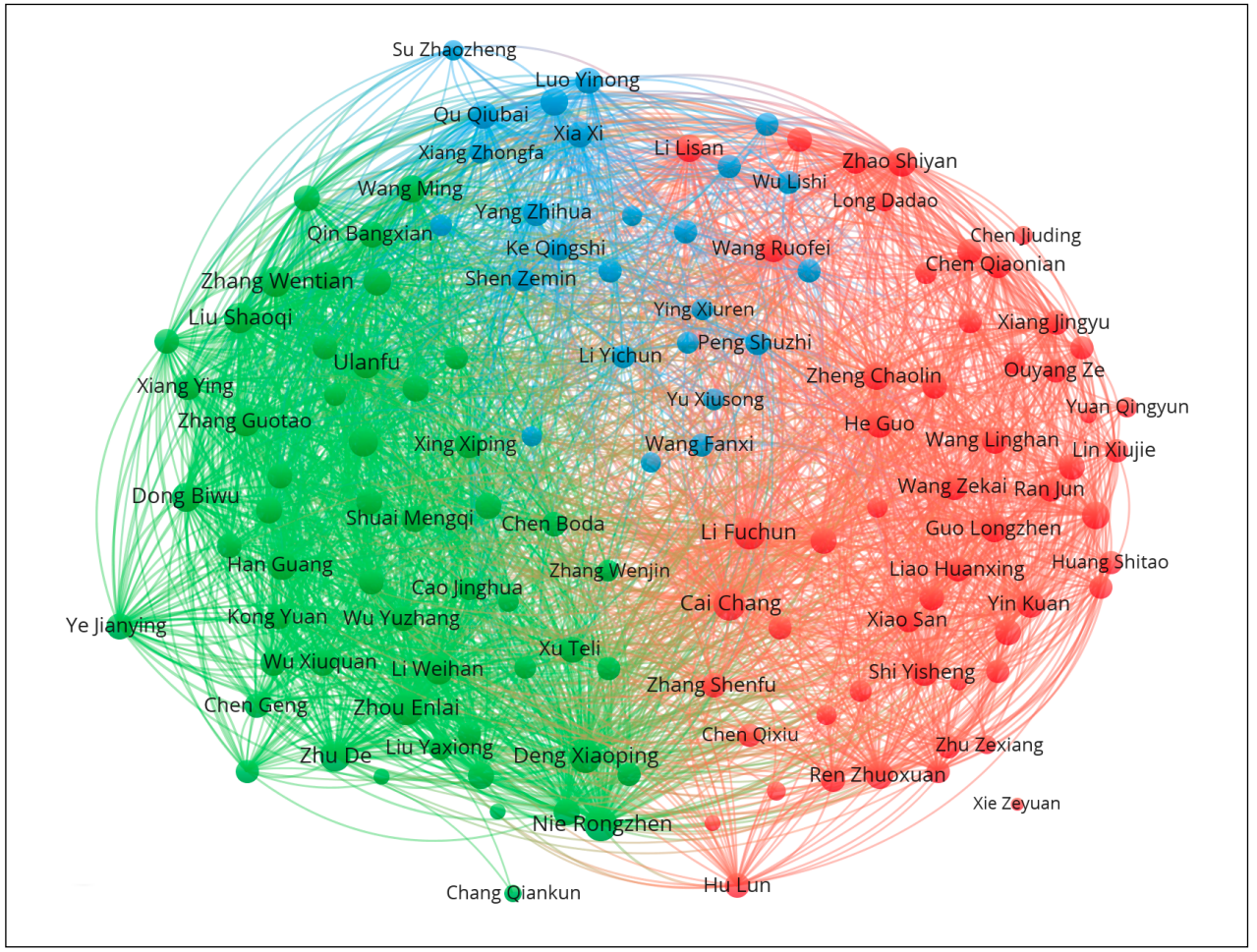

Fig. 8 SRL network graph with VOS internal clusters. Pruned to 2,500 ties for visibility, cluster resolution = 1.00, normalization via association strength.

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DOI: 10.25517/jhnr.v5i1.125

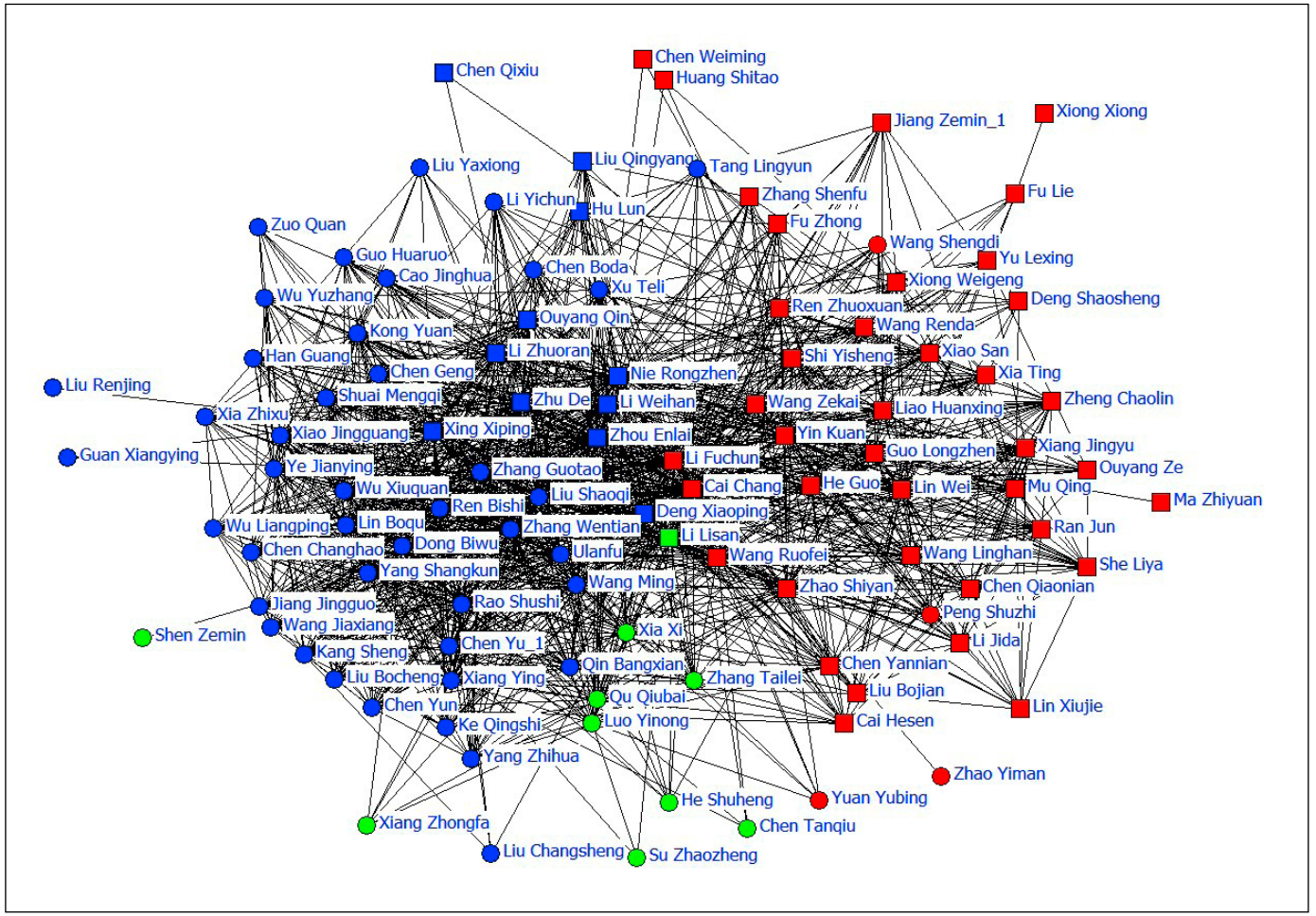

Fig. 9 Network graph of SRL containing 100 individuals with 3,032 ties, Louvain subgroups by colors (green = 1, blue = 2, red = 3), ECCO affiliation = square.

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vide a low-dimensional visualization in which objects are located in such a way that the distance between any pair of objects reflects their similarity as accurately as possible. It is similar to multi-dimensional scaling but with less distortion due to indirect similarities of third objects and a tendency to locate objects close to their ideal coordinates.[39] The VOS graph in Fig. 8 displays three primary groups: a Soviet subgroup (green), a Euro-Soviet subgroup (red), and a smaller, intermediate group that with one exception is a Soviet subgroup (blue).

A second view of the SRL subgroups is presented in Fig. 9, which is obtained by a different analytical technique of Louvain clustering. One can observe results similar to Fig. 8 in the separation of the Louvain subgroups, i.e., that they are dominated by the Soviet (blue) and Euro-Soviet (red) individuals, with a small, intermediate group placed in between the two that is entirely composed of Soviet individuals (green). Zhou Enlai, Deng Xiaoping, Nie Rongzhen, and Zhu De are in the central cloud of the Soviet subgroup, while Cai Chang and Li Fuchun are in the central cloud of the Euro-Soviet subgroup. The square shapes represent affiliation with the ECCO and almost all ECCO members are in the Euro-Soviet red Louvain subgroup.

Figure 10 allows a further examination of the internal structure of the SRL network. It displays the 33 highest degree individuals from Table 2 in a circular layout. The colors again, represent the three Louvain subgroups, and the node sizes represent Eigenvector centralities, where one can observe more ties from those with higher Eigenvector values. In addition to well-known leaders, these 33 individuals include important early CCP figures who died in the twenties, such as Xiang Jingyu, Qu Qibuai, and Zhang Tailei, or leaders who were not widely known, such as the Trotskyites Wang Zekai, Yin Kuan, and Shi Yisheng. Yet their positions in the network demonstrate their ties to key leaders.

These subgroup graphs allow us to reexamine leadership perceptions. For example, Wang Ming is historically portrayed as the key leader of the so-called Twenty-eight Bolsheviks. Yet these measures demonstrate that Zhang Wentian has more linkages, which is made clearer when one views the ties in Zhang Wentian's and Wang Ming's ego networks displayed in Figs. 11 and 12. Zhang Wentian displays more linkages and a denser network than Wang Ming. Zhang is also much higher ranked in the centrality measures above, as well as the pruning table (see Table 5). This accords with the revised theories of the returned Russian leadership situation as presented by Thomas Kampen.[40]

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39 N. J. Van Eck and L. Waltman, "VOS: A New Method for Visualization Similarities between Objects," in *Advances in Data Analysis: Proceedings of the 30th Annual Conference of the German Classification Society,* ed. H. J. Lenz and R. Decler (Heidelberg: Springer, 2007), 299–306.

40 Kampen, *Mao Zedong, Zhou Enlai and the Evolution of the Chinese Communist Leadership.*

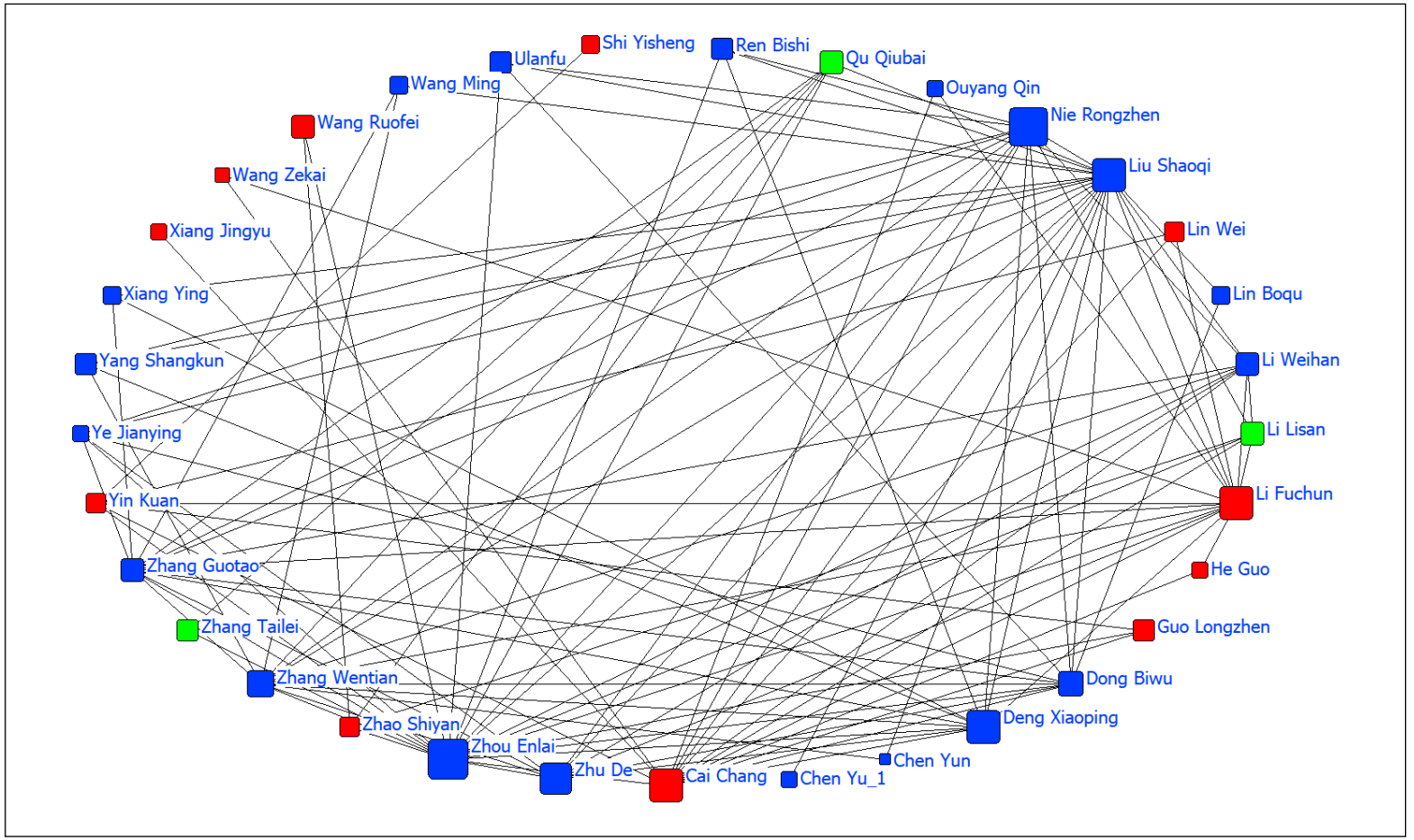

Fig. 10 Network graph of SRL circular layout, individuals who have greater than 16 ties, equaling 33 individuals, 166 ties, Louvain subgroups by colors (green = 1, blue = 2, red = 3), Eigenvector centrality = symbol size. Note: Chen Yu_1 is numbered as a unique biographical identifier for multiple same names.

eISSN: 2535-8863
DOI: 10.25517/jhnr.v5i1.125

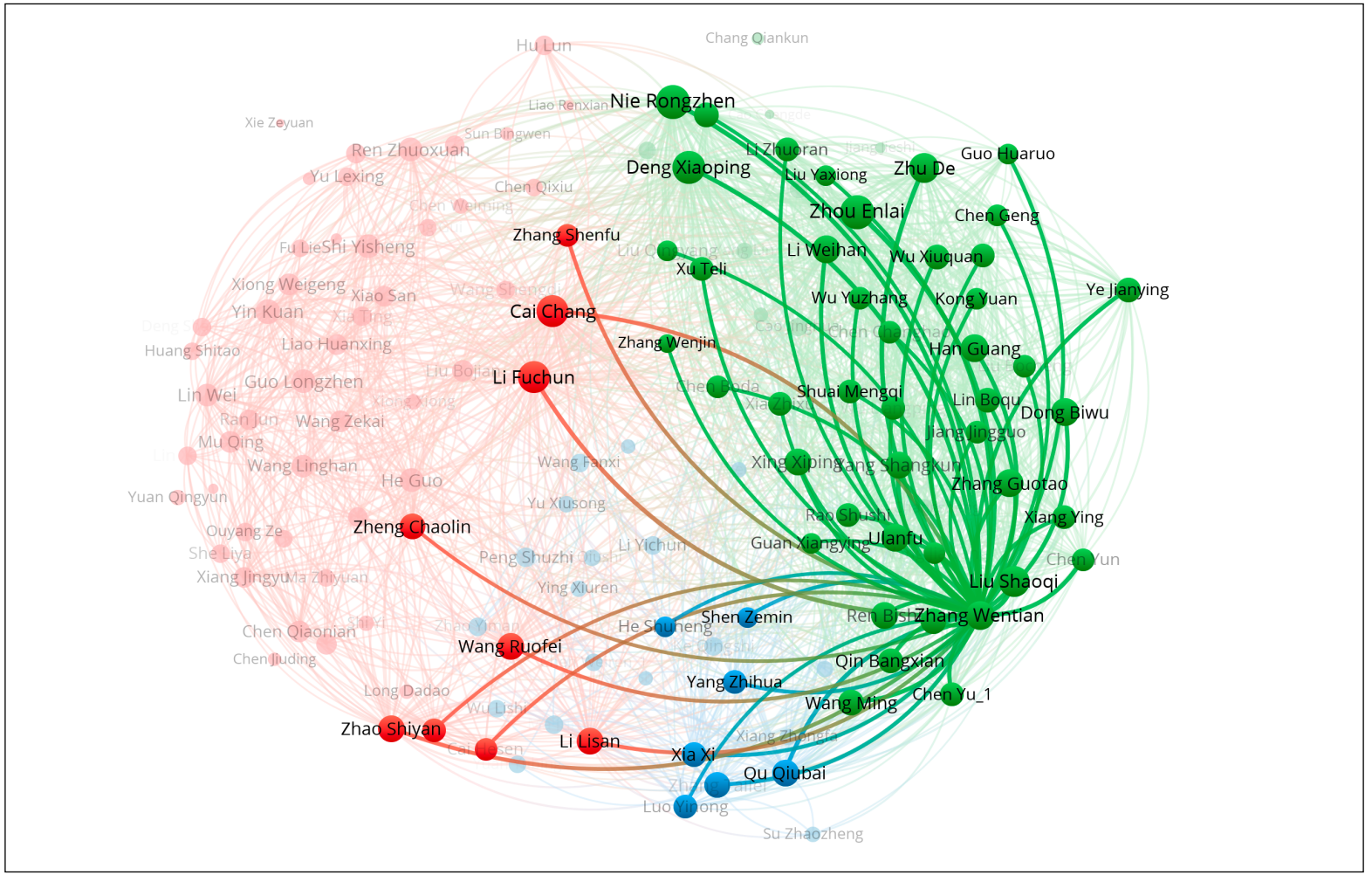

Fig. 11 Ego network for Zhang Wentian, pruned to 1,500 ties from the SRL dataset.

eISSN: 2535-8863
DOI: 10.25517/jhnr.v5i1.125

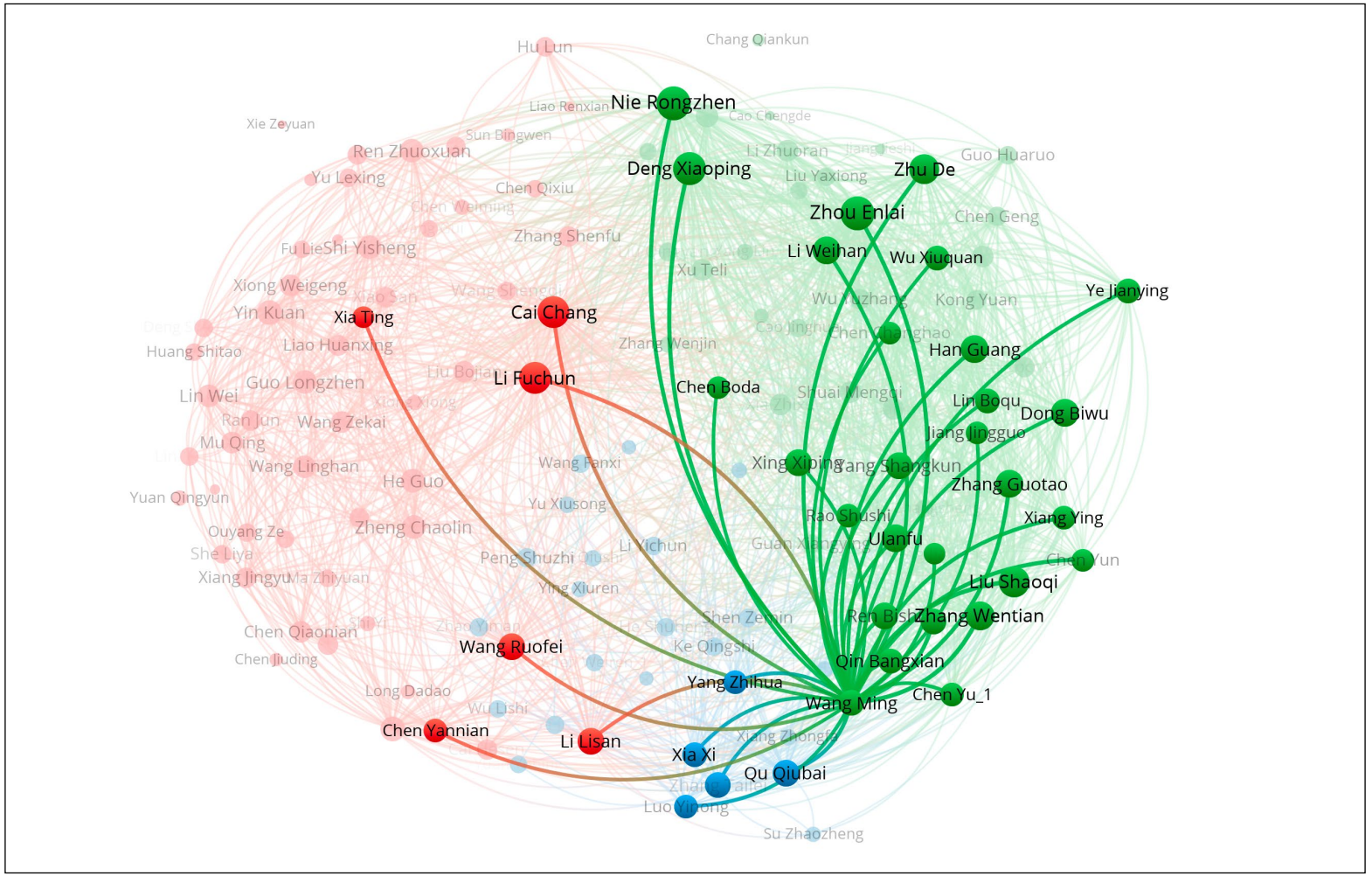

Fig. 12 Ego network for Wang Ming, pruned to 1,500 ties from the SRL dataset.

eISSN: 2535-8863
DOI: 10.25517/jhnr.v5i1.125

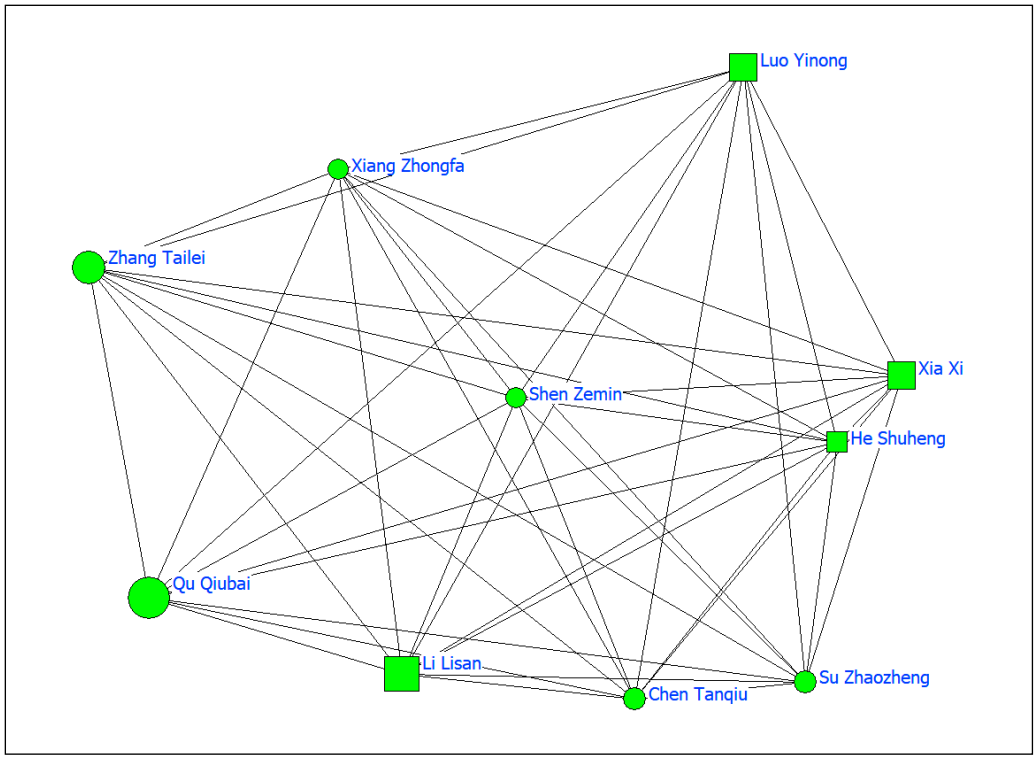

Fig. 13 Network graph of Louvain subgroup 1, containing 10 individuals, 90 ties, degree centrality = symbol size, and Hunan provincial origin = square.

Figures 13–15 display each of the three SRL Louvain subgroups. Each graph displays attribute data that deepens our understanding of the individuals who are profiled by the graph. Besides displaying network graphs (total or subgroups) it is illuminating for historians to be able to add historically relevant information to a network graph. This approach expands the visualizations by understanding subgroup affiliations based on attributes. Currently this is done by node attributes (size, shape, color, rim), and similarly with linkages. Results with the SRL data show that by choosing attributes that are fairly common (political affiliations, provincial origin, common education institutions), the results yield strong correlations with each respective subgroup.

Fig. 13 displays the Louvain subgroup 1, containing 10 individuals who were primarily central leaders in the Chinese Communist Party and the Youth League, who either died by the early 1930s and 1940s or were out of power by that time.

Figures 14 and 15 with Louvain subgroups 2 and 3 contain the Soviet and Euro-Soviet subgroups respectively. Although there is some overlap, this segmentation between these two groups is a significant finding of this study. It is intriguing that four of the highest-ranking Euro-Soviet individuals are located in the Soviet

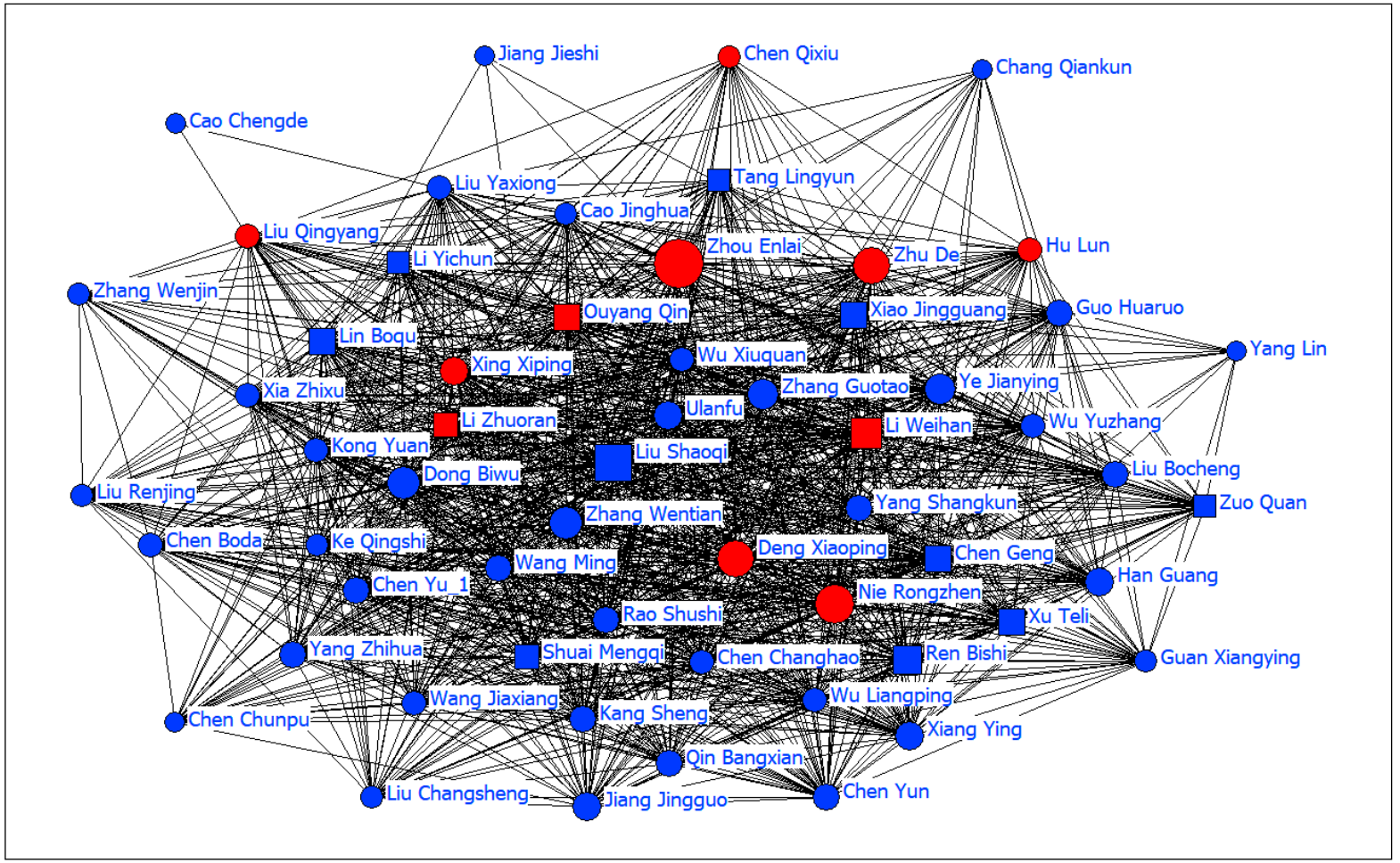

Fig. 14 Network graph of Louvain subgroup 2, containing 59 individuals, 11,740 ties, degree centrality = symbol size, provincial origins = shape (circle = Sichuan, square = Hunan), and ECCO membership = red.

eISSN: 2535-8863
DOI: 10.25517/jhnr.v5i1.125

subgroup (Fig. 14), namely Zhou Enlai, Deng Xiaoping, Nie Rongzhen, and Zhu De. The ECCO affiliation is represented by the color red, and all four of the Euro-Soviet leaders have high degree centralities.

In Fig. 15, Li Fuchun and Cai Chang have the highest degree centrality in this largely Euro-Soviet subgroup. There is also a large contingent of Hunan individuals in Fig. 15, many of whom were radicalized together and may have adhered to lifelong bonds. It also is notable that three of the four higher-ranked ECCO members in Fig. 14 are from Sichuan. What is the role of provincial origin and political affiliation in keeping ties strong within these Louvain subgroups? Although the entire network has close linkages, these subgroup clusters suggest the importance of commonality of experiences and regional background. Finally, in Fig. 15 there are 6 of the 7 Trotskyites, even though several of them were not in the Euro-Soviet group. The Twenty-eight Bolsheviks are not so linked in the Louvain analysis, with two members in Subgroup 1, six in subgroup 2 (the Soviet group) and one in subgroup 3 (data not shown).

In addition to adding attributes to the visualization of subgroups, a second proposed method to better understand a network is the utilization of *pruning tables,* which slowly prune away the number of ties needed to remain in the network, one link at a time. Often displaying entire networks, unless quite small, results in difficult to interpret "hairballs." It has been suggested that the slow dissection of a network by removing one required linkage at a time can be used to gain a better understanding of the structural relationships. These tables easily reveal at what stage individuals or attributes leave or remain in the network.

A pruning table approach can be used for either individuals or the original attributes. After converting the attribute data to 1-mode (attribute vs attribute), it can then be pruned stepwise by deleting the lower degree (linkage) attributes to reveal a graph of the highest degree attributes. In the SRL 1-mode network of individuals (Table 5) we see that the table begins with 17,498 ties in the total network and that no change occurs until those with 5 or fewer ties are removed. That person is Chen Jiuding (陳九鼎, n.d.) who has the least number of known attributes in the SRL dataset. Chen is one of twelve ECCO members who first went to Moscow and studied at KUTV. The table then skips to another level, which requires more than 7 ties before more individuals are eliminated from the network. It is intriguing to see how many people are not eliminated through later tie removal, in particular levels 18 to 30. At the 18-tie pruned level there are only 90 ties, and 17 remaining individuals, who take until level 30 to eliminate the final two individuals, namely Nie Rongzhen and Zhou Enlai. The pruning tables provide a valuable framework for easily clarifying the entire network structure.

As demonstrated in Fig. 16, one can see a progression of six visualizations at tie levels from 5 to 21. Panel A shows a dense center of nodes along with some peripheral individuals, where the lower degree individuals are gradually pruned

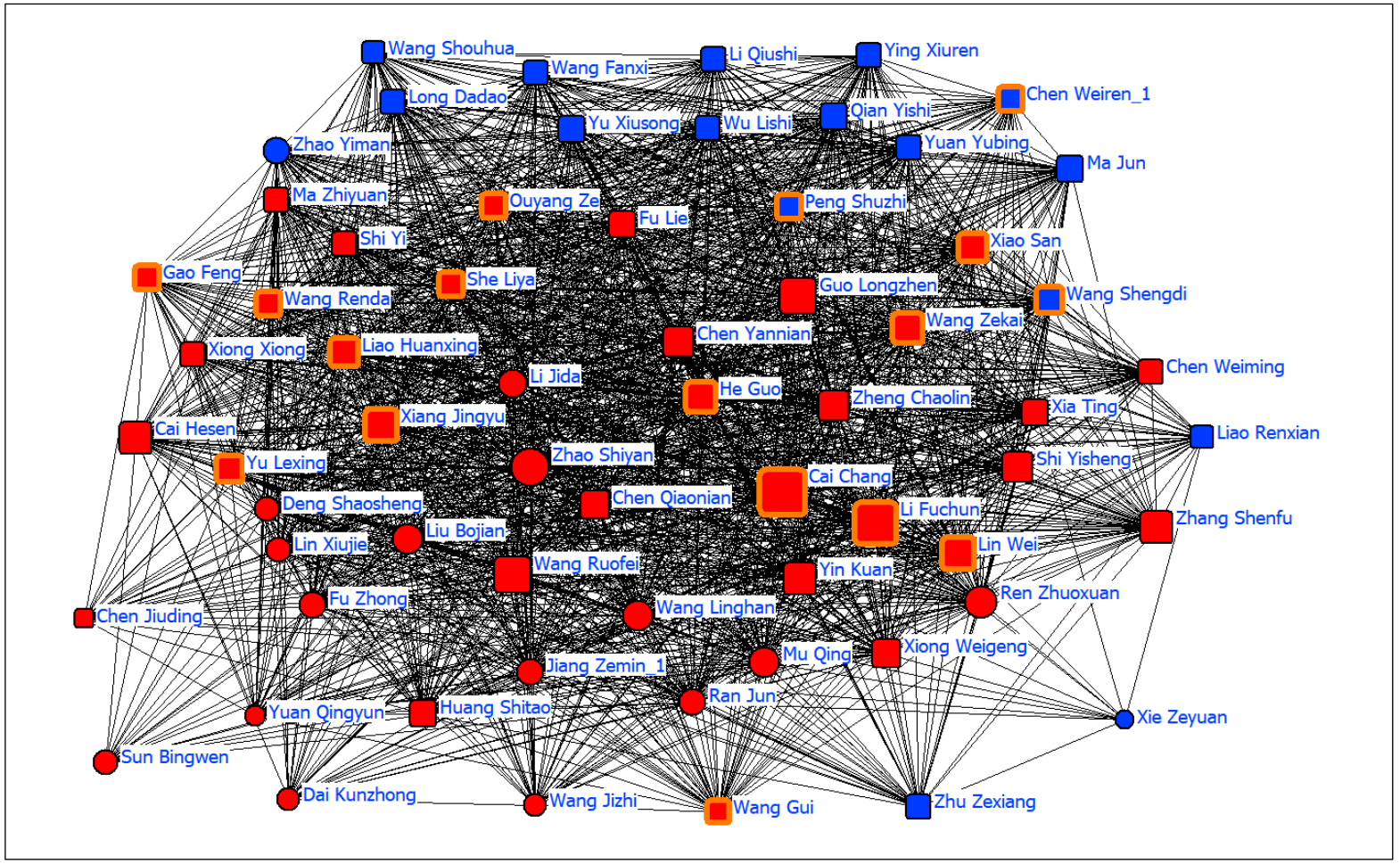

Fig. 15 Network graph of Louvain subgroup 3 containing 64 individuals, 14,308 ties, degree centrality = symbol size, provincial origins = shape (circle = Sichuan, square with orange rim = Hunan), and ECCO membership = red.

Ties Pruned	Network Ties	Pruned Individuals	Remaining Individuals	Individuals Removed at Each Level
1	17,498	0	133	
2	17,134	0	133	
3	16,132	0	133	
4	14,308	0	133	
5	11,740	1	132	Chen Jiuding
6	8,916	0	132	
7	6,392	5	127	Jiang Jieshi, Liao Renxian, Wang Jizhi, Xie Zeyuan, Yuan Qingyun,
8	4,478	10	117	Cao Chengde, Dai Kunzhong, Li Qiushi, Long Dadao, Qian Yishi, Sun Bingwen, Wang Fanxi, Wang Shouhua, Ying Xiuren, Yu Xiusong
9	3,032	11	106	Chang Qiankun, Chen Chunpu, Chen Weiren_1, Gao Feng, Ma Jun, Shi Yi, Wang Gui, Wu Lishi, Yang Lin, Zhang Wenjin, Zhu Zexiang
10	2,072	6	100	Chen Weiming, Guan Xiangying, Huang Shitao, Liu Renjing, Ma Zhiyuan, Zhao Yiman
11	1,400	12	88	Chen Qixiu, Chen Tanqiu, Deng Shaosheng, Fu Zhong, Lin Xiujie, Liu Changsheng, Peng Shuzhi, Shen Zemin, Su Zhaozheng, Xiang Zhongfa, Xiong Xiong, Yuan Yubing
12	962	11	77	Cao Jinghua, Fu Lie, He Shuheng, Jiang Zemin_1, Li Yichun, Liu Qingyang, Liu Yaxiong, Ran Jun, She Liya, Wang Shengdi, Yu Lexing
13	586	9	68	Cai Hesen, Chen Boda, Ke Qingshi, Mu Qing, Ouyang Ze, Tang Lingyun, Wang Jiaxiang, Wang Renda, Zuo Quan
14	358	15	53	Chen Changhao, Chen Qiaonian, Chen Yannian, Guo Huaruo, Jiang Jingguo, Li Jida, Liu Bojian, Wang Linghan, Wu Liangping, Wu Yuzhang, Xia Zhixu, Xiong Weigeng, Yang Zhihua, Zhang Shenfu, Zheng Chaolin
15	240	11	42	Chen Geng, Han Guang, Hu Lun, Kang Sheng, Li Zhuoran, Liao Huanxing, Shuai Mengqi, Xia Ting, Xia Xi, Xiao San, Xing Xiping

Ties Pruned	Network Ties	Pruned Individuals	Remaining Individuals	Individuals Removed at Each Level
16	166	9	33	Kong Yuan, Liu Bocheng, Luo Yinong, Qin Bangxian, Rao Shushi, Ren Zhuoxuan, Wu Xiuquan, Xiao Jingguang, Xu Teli
17	120	9	24	Chen Yun, Guo Longzhen, He Guo, Lin Boqu, Lin Wei, Ouyang Qin, Shi Yisheng, Wang Ruofei, Wang Zekai
18	90	7	17	Chen Yu_1, Wang Ming, Xiang Ying, Yang Shangkun, Yin Kuan, Zhang Tailei, Zhao Shiyan
19	56	4	13	Li Lisan, Ren Bishi, Ulanfu, Xiang Jingyu
20	38	1	12	Ye Jianying
21	28	2	10	Dong Biwu, Qu Qiubai
22	24	1	9	Zhang Guotao
23	16	2	7	Li Weihan, Zhang Wentian
24	16	0	7	
25	8	0	7	
26	8	1	6	Zhu De
27	4	3	3	Cai Chang, Deng Xiaoping, Li Fuchun
28	2	1	2	Liu Shaoqi
29	2	0	2	
30	0	2	0	Nie Rongzhen, Zhou Enlai

Tab. 5 SRL Network pruning table with number of diminishing network ties at each level and the remaining individuals.

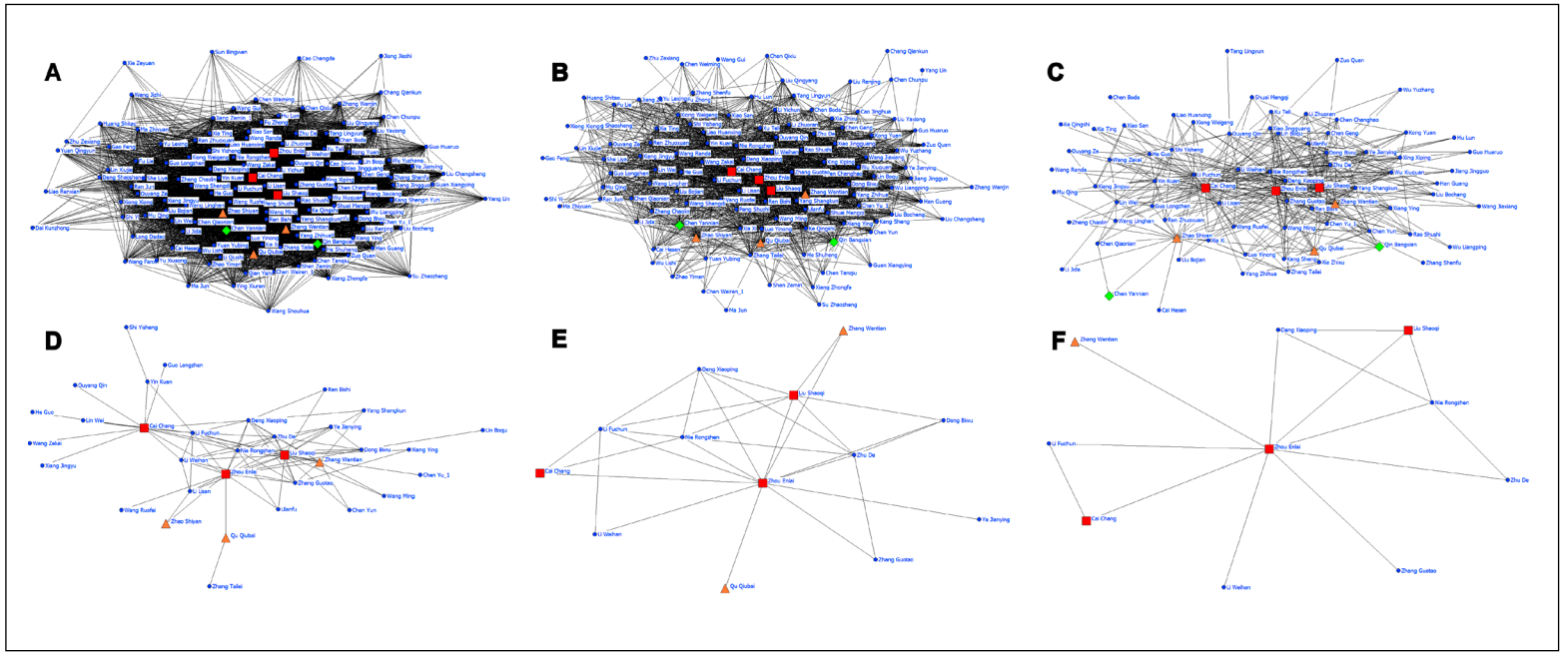

Fig. 16 Prunings of network graph. A. 132 individuals with >5 ties. B. 117 individuals with >8 ties. C. 77 individuals with >12 ties. D. 33 individuals with >16 ties. E. 13 individuals with >19 ties. F. 10 individuals with >21 ties. Representative individuals: Chen Yannian and Qin Bangxian, green circles; Zhao Shiyan, Qu Qiubai and Zhang Wentian, orange triangles; Cai Chang, Liu Shaoqi and Zhou Enlai, red squares.

eISSN: 2535-8863
DOI: 10.25517/jhnr.v5i1.125

away. For example, Jiang Jieshi is on the periphery and is eliminated from the network at the next pruning level. Jiang in fact had a narrower experience in the Soviet Union and did not, at this stage, interact with most of the SRL. In panel B, one can trace highlighted leaders like Chen Yannian (陳延年 1898–1927) and Qu Qiubai. Chen is clearly connecting to ECCO cohort members, while Qu is in the middle of Soviet individuals and the so-called Twenty-eight Bolsheviks. In panel C, there still are strong linkages for Chen and Qu. Chen is linked to two individuals: Zhao Shiyan (who recruited Chen directly to the ECCO), and Chen's brother Qiaonian (陳喬年 1902–1928), while Qu has thinning but important linkages to leaders such as Zhang Tailei, Chen Yun (陳雲 1905–1995), Zhang Wentian, and Yang Shangkun. Panel D shows that Qu Qiubai and Zhao Shiyan still maintain a place in this network. In addition, there is an interesting placement of Cai Chang, who is centrally linked to a Hunan cluster of five individuals on the left; she also links to other network segments such as Trotskyites, women leaders, and other key leaders. Panel E shows the centrality of Zhou Enlai and Liu Shaoqi. Cai Chang and Qu Qiubai are on the peripheries. Lastly, panel F places Cai in a triangle with her husband, Li Fuchun and Zhou Enlai. Zhang Wentian is on the periphery, while Nie Rongzhen (who is eliminated alongside Zhou Enlai at >30 ties) is actually more connected than Liu Shaoqi.

The pruning table concept can also be applied to the attributes of a 1-mode network constructed from attribute vs attribute which are the second type of nodes in the original 2-mode data. The results in Table 6 are an excerpt of the 17 highest linked individuals, excerpted from Table 5, along with their 127 attributes, with the rarer attributes not shown. As one might expect, party positions, military positions, and activities are highly ranked attributes for this group of top leaders. Yet some intriguing attributes include the May 4th Movement, and the birth city latitude, which when analyzed shows that 70 percent of these individuals lived on or nearby major waterways like the Yangtze or Xiang rivers. The linkage of the attributes is also interesting. In a comparison with a similar size group (N = 15) from the middle of the network (level 13) there was only a 29 percent elimination of attributes at level one, while 45 percent of the attributes were eliminated in the first level for the mid-level group (data not shown).

Isolate Level	No. Network Ties	No. Pruned Attributes	No. Remaining Attributes	Attributes Pruned at Each Level
0	8800	0	127	127 attributes
1–8	3968-176	104	23	Attributes not listed here
9	114	9	14	Civil War_1946_49, CPPCC, Cultural Revolution, Cultural Revolution Purged, ECCO, May 4th Movement, Military Official, NPC, Sino Soviet Relations
10	80	1	13	Yan'an Base Activities
11	46	1	12	Birth City Longitude
12	20	3	9	Birth Year, Death Year, Revolutionary
13	10	3	6	KUTV, Long March, Party Position
14	0	6	0	Central Committee, CCP, Birth City Latitude, Lifespan, Politburo, Red Base Activities

Tab. 6 Excerpt from SRL Network Pruning Table for the top 17 individuals (127 attributes) with 1-mode network analysis. Results are displayed for number of ties and number of network ties, number of pruned and remaining attributes and names of pruned attributes at each level.

6. Conclusions

6.1 New Perspectives on CCP Leadership

This study is the first examination of early CCP structure using the SRL dataset from the larger CBD database. These preliminary results indicate potentially new perspectives for CCP leadership at the subgroup, individual, and attribute levels. The data presented demonstrate the distinct profile of birth year, death year, lifespan, and provincial and birth city origin that typified both the Euro-Soviet and the Soviet groups. The comparisons revealed an earlier death and shorter lifespan for the Euro-Soviet group than the Soviet group (see Table 1 and Figs. 1 and 2). The provincial and birth city origin show significant clustering in terms of close propinquity (see Figs. 3 and 4). Subgroup trends between the Euro-Soviet and Soviet groups were also displayed in the network profiles that formed distinctive patterns. It was also shown that this was a scale-free network with high cohesion and clustering, indicating an effective and highly connected network of individuals.

Network analyses generate new ideas for exploring past CCP leadership, as well as its evolution. For example, in the centrality measures, one can observe the

important individuals of influence (degree centrality), leaders who were close to others and able to obtain and convey information (closeness centrality), those who were close to centers of influence (Eigenvector centrality), or those who became power brokers (betweenness centrality). Because of the uncertainty of life and death during a revolution, the speedy flow of communication is critical for dynamic, dangerous situations. In terms of cohesion, the centrality measures, core-periphery, scale-free measures, and triadic census reveal a fast, efficient, and strong network that should be considered a major factor that ensured party survival. How did the close-knit nature of this network allow for adaptability and survival in the future challenges beyond the 1920s? How did the survivors learn to accept new responsibilities or switch roles? How inventive were they in difficult situations, and how were those responses tied to their adaptive experiences while overseas, encouraged by this densely cohesive network? As suggested by these analyses, these are possible research areas for the future.

The extraordinary role of Zhou Enlai demonstrated in numerous measures becomes more essential to understand. Zhou's role was displayed throughout the paper, particularly in the centralities where he was the highest degree, Eigenvector, closeness and betweenness. Likewise, the core individuals heatmap and visualizations demonstrated the strength of Zhou Enlai's position as a key leader. It has already been mentioned that he is clearly a boundary spanner between communities, occupying the highest degree position, his exceptional strength in the centrality measures, and the visualization of his network strengths in the subgroup graphs. But beyond being a conduit for communication, a person of influence and prestige, and a power broker, one must recognize that Zhou worked to maintain his influence but was comfortable with his role. This brings forth the question of leadership and ambition. Others in the network, such as Zhang Guotao, eventually gambled but lost in their attempt to gain more power in the 1930s, but they still played key roles and were important leadership hubs. The power struggles in the late 1920s and 1930s might have demonstrated to Zhou Enlai that he did not want to take the risk of being at the center with a higher position, since he could accomplish his objectives with the power he already wielded. Perhaps later CCP leaders, like Zhao Ziyang (趙紫陽 1919–2005) or Bo Xilai (薄熙來 1949–), may have been more vulnerable as they sought the higher positions and did not have the requisite breadth of network ties to see them through the political fluctuations. In addition, one could suggest that Zhou's experiences and openness to new knowledge, cultures, and ideas while in Western Europe and the Soviet Union definitely had an impact on his ability to adapt to the rapidly changing, complex set of circumstances that characterized the CCP revolution.

Secondly, Liu Shaoqi also deserves much greater study for his stature in the CCP network. In this study he emerged as high in the centrality measures and in the pruning table he was one of the critical final three members remaining. Although he does not have the boundary spanner role of Zhou Enlai, Liu Shaoqi is near the top in all four SRL centrality measures. Liu is important not just for

his positions, but also to study the role of Hunan. Liu Shaoqi later became the first successor planned for Mao Zedong, who also was from Hunan. What role was played by Liu's strengths in general and among his fellow Hunanese? A generally unassuming person, Liu was task oriented and gifted in his organizational skills. Liu Shaoqi provided much needed talent and strength during the 1930s and 1940s in the military leadership and ideological developments of the CCP.

Thirdly, the duo of Cai Chang and Li Fuchun are worth further research as a revolutionary couple. Their high placement in three of the four centrality measures, as well as their role in the Euro-Soviet subgroup demonstrates influence. But we can observe the nuances of their roles by viewing the centrality measures, where they are influential leaders with prestige, high proximity to powerful communities, and closeness to the other individuals in this network, although they are not ranked high in betweenness centrality scores that help to define those who are power brokers. How did this play out in the positions that were held by this couple in their revolutionary careers and post-1949? Did Cai and Li play a role as mediators and important individuals to consult on trouble shooting for their network colleagues? As Hunanese, how did they relate to and rely on Sichuanese long-term comrades such as Deng Xiaoping and Nie Rongzhen, who measured high on all four centralities?

Network analysis allows one to raise questions about leadership within these subgroups. As discussed above, it was demonstrated that Thomas Kampen's assertion was correct in saying that the 28 Bolsheviks were not a discrete group upon their return to China, because they did not in historical fact temporally appear or behave as a block. It was Zhou Enlai who was at the center of political struggles in the late 1920s and early 1930s and he acted in concert with members of the so-called 28 Bolsheviks. Both of these ideas have been supported here by both the quantitative and network analysis of the Soviet Returned Leaders. However, this does not mean that the so-called Twenty-eight Bolshevik leaders like Wang Ming, Zhang Wentian, Wang Jiaxiang, or Qin Bangxian did not have influence or were not core members of the Soviet Returned Leadership. Clearly, they had affinities of ideology and at times ambition, just as other members did in the Soviet Returned Leaders group. It is suggested that a fruitful network analysis should be conducted for the Anhui, Zhejiang, and Jiangsu members of the 28 Bolsheviks. Likewise, as mentioned above, the disproportionate number of executions between 1927 and 1930 from the Euro-Soviet group should be studied in more depth, in particular with a time-series network analysis.

6.2 New Perspectives on Historical Network Analytical Tools

The article has suggested that historians might consider additional ways to analyze as well as represent their results to allow for better network clarity and the utilization of prosopographical data. First, it is suggested that by analyzing subgroups and their attribute data one might gain unexpected insights to compare

and contrast important historical patterns. Another technique presented was to develop pruning tables that identify relationships at each tie level. This method was proposed for understanding both networks of individuals and networks of their attributes. Knowing at what level individuals or attributes are eliminated allows the reader to have a more granular knowledge of complex network structures. It was suggested that one might accompany the pruning table with visualizations (as displayed in Fig. 16) that show the remaining individuals and their ties, and how these shifts worked at different levels.

Post-WWI Chinese revolutionaries who adopted their communist ideology in Europe, whether in Western Europe or the Soviet Union, played an important part in the Chinese revolutionary process. Historical network analysis and quantitative history allows us to better define who they were as individuals and as groups. The SRL clearly had a cohesive and effective network of revolutionary leaders who provided dynamic leadership during and after the Chinese revolution of 1949. This study has demonstrated a deeper understanding of these leadership linkages and hopefully raised intriguing questions for future research.

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Appendix 1 – Abbreviations

Chinese Biographical Database	CBD
Soviet Returned Leaders Dataset	SRL
Toilers of the East University in Moscow	KUTV
Chinese Communist Party	CCP
Chinese Nationalist Party	GMD
Anarchist Party (Surplus Society)	GYS
European Branches of the Chinese Communist Organizations	ECCO
Chinese Social Democratic Party	SDP
European Branch of the Chinese Nationalist Party	EGMD
Chinese Youth Party	QND

Appendix 2 – Glossary of SRL Individual Names

Cai Chang	蔡暢	Qian Yishi	錢亦石
Cai Hesen	蔡和森	Qin Bangxian	秦邦憲
Cao Chengde	曹承德	Qu Qiubai	瞿秋白
Cao Jinghua	曹靖華	Ran Jun	冉鈞
Chang Qiankun	常乾坤	Rao Shushi	饒漱石
Chen Boda	陳伯達	Ren Bishi	任弼時
Chen Changhao	陳昌浩	Ren Zhuoxuan	任卓宣
Chen Chunpu	陳春圃	She Liya	佘立亞
Chen Geng	陳賡	Shen Zemin	沈澤民
Chen Jiuding	陳九鼎	Shi Yi	史逸
Chen Qiaonian	陳喬年	Shi Yisheng	施益生
Chen Qixiu	陳啟修	Shuai Mengqi	帥孟奇
Chen Tanqiu	陳潭秋	Su Zhaozheng	蘇兆征
Chen Weiming	陳微明	Sun Bingwen	孫炳文
Chen Weiren_1	陳為人	Tang Lingyun	唐靈運
Chen Yannian	陳延年	Ulanfu	烏蘭夫
Chen Yu_1	陳郁	Wang Fanxi	王凡西
Chen Yun	陳雲	Wang Gui	王圭
Dai Kunzhong	戴坤忠	Wang Jiaxiang	王稼祥
Deng Shaosheng	鄧紹聖	Wang Jizhi	王極知
Deng Xiaoping	鄧小平	Wang Linghan	王凌漢
Dong Biwu	董必武	Wang Ming	王明
Fu Lie	傅烈	Wang Renda	王人達
Fu Zhong	傅鍾	Wang Ruofei	王若飛
Gao Feng	高風	Wang Shengdi	汪盛荻
Guan Xiangying	關向應	Wang Shouhua	汪壽華
Guo Huaruo	郭化若	Wang Zekai	汪澤楷
Guo Longzhen	郭隆真	Wu Liangping	吳亮平
Han Guang	韓光	Wu Lishi	吳麗石

He Guo	賀果
He Shuheng	何書衡
Hu Lun	胡倫
Huang Shitao	黃士韜
Jiang Jieshi	蔣介石
Jiang Jingguo	蔣經國
Jiang Zemin_1	江澤民
Kang Sheng	康生
Ke Qingshi	柯慶施
Kong Yuan	孔原
Li Fuchun	李富春
Li Jida	李季達
Li Lisan	李立三
Li Qiushi	李求實
Li Weihan	李維漢
Li Yichun	李一純
Li Zhuoran	李卓然
Liao Huanxing	廖煥星
Liao Renxian	廖仁先
Lin Boqu	林伯渠
Lin Wie	林蔚
Lin Xiujie	林修杰
Liu Bocheng	劉伯承
Liu Bojian	劉伯堅
Liu Changsheng	劉長勝
Liu Qingyang	劉清揚
Liu Renjing	劉仁靜
Liu Shaoqi	劉少奇
Liu Yaxiong	劉亞雄
Long Dadao	龍大道
Luo Yinong	羅亦農
Ma Jun	馬駿
Ma Zhiyuan	馬志遠
Mu Qing	穆清
Nie Rongzhen	聶榮臻
Ouyang Qin	歐陽欽
Ouyang Ze	歐陽澤
Peng Shuzhi	彭述之
Wu Xiuquan	伍修權
Wu Yuzhang	吳玉章
Xia Ting	夏霆
Xia Xi	夏曦
Xia Zhixu	夏之栩
Xiang Jingyu	向警予
Xiang Ying	項英
Xiang Zhongfa	向忠發
Xiao Jingguang	蕭勁光
Xiao San	蕭三
Xie Zeyuan	謝澤沅
Xing Xiping	邢西萍
Xiong Weigeng	熊渭耕
Xiong Xiong	熊雄
Xu Teli	徐特立
Yang Lin	楊林
Yang Shangkun	楊尚昆
Yang Zhihua	楊之華
Ye Jianying	葉劍英
Yin Kuan	尹寬
Ying Xiuren	應修人
Yu Lexing	余樂醒
Yu Xiusong	俞秀松
Yuan Qingyun	袁慶雲
Yuan Yubing	袁玉冰
Zhang Guotao	張國燾
Zhang Shenfu	張申府
Zhang Tailei	張太雷
Zhang Wenjin	章文晉
Zhang Wentian	張聞天
Zhao Shiyan	趙世炎
Zhao Yiman	趙一曼
Zheng Chaolin	鄭超麟
Zhou Enlai	周恩來
Zhu De	朱德
Zhu Zexiang	朱澤祥
Zuo Quan	左權