

City of Red Tractors: Soviet Models and the Transfer of Agricultural Technology in Luoyang

Karina Khasnulina

Abstracts

While Soviet influence on China's development during the 1950s is well documented, the traces of Soviet involvement in modernization projects are still explained by the concept of the Soviet model, a homogeneous category that scholars turn to explain Soviet influence not only on the path of Chinese economic development but also on specific projects within it. By focusing on the history of one of the microcosms of the early PRC industrialization, the industrial zone of Jianxi and its city-forming enterprise, No. 1 Tractor Plant (YTO), this article examines the nuances of the Soviet involvement in technological, urban, and industrial development during the 1950s. Drawing on unpublished contractual documentation in Russian and Ukrainian archives, as well as interviews with the factory workers, this article argues that particular industrial venues within the Soviet Union were used as the reference for China's technological, urban, and industrial projects. For the YTO and its workers, what came to be known as the "Soviet model" was a particular local model of the Kharkiv tractor factory.

Während der sowjetische Einfluss auf die Entwicklung Chinas in den 1950er Jahren gut dokumentiert ist, werden die Spuren der sowjetischen Beteiligung an Modernisierungsprojekten immer noch mit dem Konzept des sowjetischen Modells erklärt, einer homogenen Kategorie, die von Wissenschaftlern herangezogen wird, um den sowjetischen Einfluss nicht nur auf den Weg der chinesischen Wirtschaftsentwicklung, sondern auch auf bestimmte Projekte innerhalb dieser Entwicklung zu erklären. Dieser Artikel konzentriert sich auf die Geschichte eines der Mikrokosmen der frühen Industrialisierung der VR China, die Industriezone Jianxi und ihr stadtbildendes Unternehmen, das Traktorenwerk Nr. 1 (YTO), und untersucht die Nuancen der sowjetischen Beteiligung an der technologischen, städtischen und industriellen Entwicklung in den 1950er Jahren. Auf der Grundlage unveröffentlichter Vertragsdokumente in russischen und ukrainischen Archiven sowie von Interviews mit den Fabrikarbeitern wird in diesem Artikel

argumentiert, dass bestimmte industrielle Standorte in der Sowjetunion als Referenz für Chinas technologische, städtische und industrielle Projekte dienten. Für die YTO und ihre Arbeiter war das, was als „sowjetisches Modell“ bekannt wurde, ein bestimmtes lokales Modell der Traktorenfabrik in Charkiw.

1. Introduction: Multiple Soviet Models

At the beginning of the First Five Year Plan (FFYP) in the People's Republic of China (PRC), Mao Zedong asked, “What can we make at present?” and answered, “We can make tables and chairs, teacups, and teapots, we can grow grain and grind it into flour, and we can make paper”, before making his point: “But we cannot make a single motor car, plane, tank, or tractor.”¹ Four years later, in 1958, the No. 1 Tractor Plant (Di yi tuolaji zhizao chang, YTO [第一拖拉机制造厂, 一拖]), located in the city of Luoyang, Henan province, produced the first Chinese tractor, named the “Dongfanghong” (lit. “The East is Red” [东方红]). The Dongfanghong was an exact copy of the Soviet DT-54, a tractor manufactured in Kharkiv, Stalingrad, and Rubtsovsk (Altai) until the end of the Cold War. Constructed during the FFYP, the YTO constituted a technology transfer from the Soviet Union to China. It was implemented in the very years when, comparatively speaking, the Soviets carried out the most significant programme of assistance implemented by any nation, including the American Marshall Plan.² This program comprised a large-scale social and economic development following what became known as the Soviet model (Sulian moshi).

The concept of the “Soviet model” has been used in the literature for decades, both as a category of analysis and as an object of study. In contemporary scholarship, it has become an umbrella term for an analytical category in the social sciences and humanities and also, more specifically, an identificatory of the Soviet influence on Maoist China. Following the Cold War political discourse, economists and political scientists have used it to describe the Soviet-style political mode and centralized economic planning,³ while scholarship in the field of international relations also employed the notion to show the impact of Soviet political culture on the early PRC.⁴

Many historians have subsequently adopted this term from the political literature and expanded its scope to describe the transformation of different realms in the early PRC,

1 T. Mao, On the Draft Constitution of the People's Republic of China, 14 June 1954, in: Selected Works of Mao Tse-Tung, vol. 5, Beijing 1977, p. 146.

2 O. A. Westad, *Brothers in Arms: The Rise and Fall of the Sino-Soviet Alliance, 1945–1963*, Washington, DC 1998, p. 3.

3 For example, see M. Goldman, *China Rethinks the Soviet Model*, in: *International Security* 5 (1980) 2, p. 49; Y. Ji, *The Soviet model and the Breakdown of the Military Alliance*, in: T. Bernstein and H. Li (eds.), *China Learns from the Soviet Union, 1949–Present*, Lanham 2010.

4 O. A. Westad (ed.), *Brothers in Arms: The Rise and Fall of the Sino-Soviet Alliance, 1945–1963*, Stanford 1998, pp. 117–140; Z. Shen [沈志华], *Sulian Zhuanjia zai Zhongguo, 1948–1960* [Soviet experts in China, 1948–1960] [苏联专家在中国], Beijing 2009.

including, among others, education, science, urban design, and architecture.⁵ *China Learns from the Soviet Union*, the 2010 volume edited by T. Bernstein and Hua Yu-li and covering the economic, political, social, and cultural spheres of Chinese development from 1949, was one of the earliest systematic studies to employ multiple notions of the Soviet model.⁶ The existing historical narratives on the history of the YTO tractor factory also follow the line that the factory was developed according to this model.⁷ Serving equally as imaginary construction and directive to act in various socio-economic realms, as both an ideal and an operations manual, the concept of the Soviet model employed in these studies has very much focused on the notion of the “Soviet” as a nation- or macro-level category.⁸

As a result, little attention has been paid to the question of whether the model really was, in fact, a homogeneous construct defined by a specific spatiotemporal framework, one

5 On the Soviet model in the PRC higher education system establishment, see I. C. Y. Hsu, *The Reorganisation of Higher Education in Communist China, 1949–61*, in: *The China Quarterly* 19 (1964), pp. 128–160; Z. Wang, *The Chinese Developmental State during the Cold War: The Making of the 1956 Twelve-Year Science and Technology Plan*, in: *History and Technology* 31 (2015) 3, pp. 180–205.

A considerable number of works analyse the imitation of Soviet patterns in the early PRC mass cultural productions, including T. Mai Chen, *Socialist Geographies, Internationalist Temporalities, and Travelling Film Technologies: Sino-Soviet Film Exchange in the 1950s and 1960s*, in: O. Khoo and S. Metzger, *Futures of Chinese Cinema: Technologies and Temporalities in Chinese Screen Cultures*, Chicago, 2009, pp. 73–94; M. Yu, *A Soviet hero, Pavel Korchagin, comes to China*, in: *Histoire Russe* 29 (2/4) (2002), pp. 329–55; Y. Li, *China's Soviet Dream: Propaganda, Culture, and Popular Imagination*. NY 2018.

On the role of the Soviet model in the social transformations, see *On the use of the concept*, see H. Kun [孔寒冰] and Z. Xiang [项佐涛], *Zhongguo Shehui Zhuanxing Guocheng Zhong de Sulian Moshi: Gaibiande he Mei Gaibiande [中国社会转型过程中的苏联模式: 改变的 and 没改变的]* [The Soviet Model in the Process of Social Transformation in China: Changed and Unchanged], in: *Zhanglue yu Guanli* 1 (2010), pp. 105–115/2013.

6 T. Bernstein and H. Li (eds.), *China Learns from the Soviet Union, 1949–Present*, Lanham 2010.

7 Currently, there are a few Chinese publications that focus on different aspects of the history of the Luoyang industrial region, including the tractor factory. The YTO Factory Records provide information about the main milestones in the factory's history (Diyi Tuolaji Zhizao Chang Changzhi Zong Bianji Shi [第一拖拉机制造厂厂志总编辑室], Yituo Chang Zhi, Shang Ce [一拖厂志, 上册] [YTO Factory Records, vol. 1], Hefei 1985); Ding Yiping analyses the industrial district from the economic sociology perspective (Y. Ding [丁一平], “YTO” de Luohu yu Luoyang Zhonggongye Jidi de Queli [“一拖”的落户与洛阳重工业基地的确立] [The Settlement of “Yituo” and the Establishment of Luoyang Heavy Industry Base], in: *Henan Keji Daxue Xuebao* 2, 2007).

Especially relevant for my work is a collection of 30 interviews with the tractor factory workers published in 2022. X. Zhou, H. Zhou, and Y. Zhu [周晓虹, 周海燕, 朱义明] (eds.), *Nongye Jixiehua de Zhongguo Xiangxiang. Diyi Tuola Jichang Koushu Shilu (1953–2019) [农业机械化的中国想象 – 第一拖拉机厂口述实录]* [Imagination of Agricultural Mechanization in China – Oral Record of the First Tractor Factory 1953–2019], Shanghai 2022.

8 The idea of the overarching Soviet influence in the early PRC has been recently challenged by several studies that appeared after the global turn in historiography. K. Hirata, V. Seow, for example, shows how the entanglement of the industrial legacy from the Japanese and Nationalist regimes in Manchuria prevailed under Soviet-style economic management. Most of these studies are concentrated on Manchuria, the locus of PRC industrialization. The Luoyang, however, is located in the central area of China and lacked a pre-1949 industrial base. See K. Hirata, *Made in Manchuria: The Transnational Origins of Socialist Industrialization in Maoist China*, in: *The American Historical Review* 126 (2021) 3, pp. 1072–1101; V. Seow, 6. *Socialist Industrialization*, in: V. Seow, *Carbon Technocracy. Energy Regimes in Modern East Asia*, Chicago, 2021, pp. 255–96; also L. Hou, *Building for Oil: Daqing and the Formation of the Chinese Socialist State*, Cambridge, MA 2018. Focusing on the field of science and technology, M. Matten shows that China “learned” from Western countries and directly challenges the idea of isolationism (M. Matten, *Turning away from the Big Brother: China's Search for Alternative Sources of Knowledge during the Sino-Soviet Split*, *Turning away from the Big Brother: China's Search for Alternative Sources of Knowledge during the Sino-Soviet Split*, in: *Comparativ*, 1 (2019), pp. 64–90).

that Deborah Kaple characterized as the “High Stalinist Model”, formed in the post-war system of governance based on tight party control over all aspects of workers’ lives.⁹ This paper aims to provide new insights into the flourishing field of the micro-history of industrial enterprises in the context of the Cold War and nation-building in early Maoist China. Its goal is to challenge the homogenous, high Stalinist notion by examining the variety of roots and multiple forms of the Soviet model – or models – adopted at the local level. Tracing the construction history of one of China’s earliest and largest tractor-manufacturing plants, I combine the transnational view on the Sino-Soviet cooperation with the personal experiences of people who participated in the construction. I argue that the Soviet models applied in economic policy, industrial construction, urban design, and even technology did not comprise a homogeneous construct but had specific forms in the USSR.

This paper has been researched using three main types of primary source materials. First, from official archives, it draws on unpublished contractual documentation and correspondence in Russian and Ukrainian as well as Chinese; these are located at the Russian State Archive of Economics (Rossiyskiy Gosudarstvennyy Arkhiv Ekonomiki) [f. 365, f. 8115], Central State Scientific and Technical Archive of Ukraine (Tsentral’nyy derzhavnyy naukovo-tekhnichnyy arkhiv Ukrayiny) [f. P-43, op. 1]. Second, it makes use of oral history interviews with Luoyang factory workers published in 2022.¹⁰ Third, it further broadens the spatial framework of events accompanying the factory construction process through additional interviews conducted by the author with Luoyang factory workers who travelled to the Soviet Union for training. This comprised a total of five interviews undertaken between 18 July 2020 and 25 July 2020 in Jianxi district of Luoyang.

This article has three parts. The first is devoted to the economic transformations and international situations that preceded and partly became a prerequisite for the emergence of the production of tractors in China. In this part, I work with the concept of the Soviet model in a conventional manner, taking it as a socio-economic mode. In the second part, I trace the history of choosing a location for the factory and show how China relied on both its own and Soviet experience in the allocation of key industrial facilities. The third part is devoted directly to the technology transfer¹¹ between the USSR and China, which, in addition to the transfer of the machine, also involved the norms and standards used in the construction of the factory, urban planning, and even factory culture elements associated with the use of the tractor in socialist conditions. In this last part, I

9 D. Kaple, *Dream of a Red Factory*, Oxford 1994, pp. 7–9; see also D. Kaple, *Agents of Change: Soviet Advisers and High Stalinist Management in China, 1949–1960*, in: *Journal of Cold War Studies*, 18 (2016) 1, pp. 5–30.

10 X. Zhou, H. Zhou, and Y. Zhu [周晓虹, 周海燕, 朱义明] (eds.), *Nongye Jixiehua de Zhongguo Xiangxiang. Diji Tuola Jichang Koushu Shilu (1953–2019)* [农业机械化的中国想象 – 第一拖拉机厂口述实录] [Imagination of Agricultural Mechanization in China – Oral Record of the First Tractor Factory 1953–2019], Shanghai 2022.

11 I follow T. Hughes’ definition of technology transfer as an initial stage of the process of the technological system’s reproduction. See T. Hughes, *The Evolution of Large Technological Systems*, in: *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology*, Cambridge, MA 1986, pp. 51–82, at p. 51.

examine people's personal experiences of socialist industrial modernity and the impact on the perception of the Soviet model in China among those who became the agents of technology transfer.

2. Transferring the Soviet Economic Model to and across China

The establishment of the PRC in 1949 was followed by a short period of economic recovery, the restoration of municipal governments, and the establishment of the party's local branches. In most Chinese territories, this period, known as the "New Democracy",¹² was characterized by the idea of the co-existence of a state-owned socialist economy with the private economy and a mutually beneficial relationship between labour and capital in the new social system (albeit based on conflicting interests) and of this co-existence and mutually beneficial relationship as paving the way for the long-term development of socialism in China.¹³ Concurrently, the Northeast (Dongbei), also known in the West as "Manchuria", became a site of more radical economic reforms embodied in the Soviet-style experiment under the leadership of Gao Gang.¹⁴ A major part of these reforms was the collectivization campaigns involving the establishment of Soviet-style collective farms and subsequent mechanization.¹⁵

Although this local economic model in the North-East during 1948–1952 has its origins not only in the Soviet planning system but also, in the economic practices of the Japanese and Nationalist regimes,¹⁶ the Manchurian economic transformation at that time was still characterized in terms of the Soviet model.¹⁷ It was with the establishment of "socialist agriculture" in Manchuria that Chinese peasants encountered Soviet tractors. Although relatively limited,¹⁸ this encounter involved not only the tractor as a physical object but also the transference of knowledge about agricultural mechanization through translations of Russian material (brochures, etc.) about the tractors in socialist agriculture.¹⁹

12 H. Li, *Mao and the Economic Stalinization of China, 1948–1953*. Lanham 2006, p. 77.

13 Bernstein and Li (eds.), *China Learns from the Soviet Union*, pp. 9–11.

14 Gao Gang [高岗] (1905–1954) was a leader of the Chinese Communist Party (CCP) and the PRC, serving also as the Vice-Chairman of the Central People's Government and the Chairman of the State Planning Commission. Gang was criticized for conspiring with Rao Shushi to replace Liu Shaoqi and Zhou Enlai and committed suicide, after which, in 1955, he was expelled from the party.

15 Bernstein and Li (eds.), *China Learns from the Soviet Union*, pp. 179–180.

16 W. C. Kirby, *Continuity and Change in Modern China: Economic Planning on the Mainland and on Taiwan, 1943–1958*, in: *The Australian Journal of Chinese Affairs* 24 (1990), pp. 121–141.

17 A. King, *China–Japan Relations after World War Two: Empire, Industry and War, 1949–1971*, Cambridge, UK 2016, at pp. 51–57.

18 Russian sources show that in 1949 North-East area had just over 300 tractors. See *Land Reform in China*, 16 August, 1950, RGASPI, Molotov Collection, f. 82, op. 2, d. 1254, in: Y. Sautin, *China's Last Warlord: Gao Gang and The Northeast People's Government (1948–1954)*, Thesis, University of Cambridge 2020, p. 175.

19 See, for example, *Dongbei Jiefangqu Shengchan Shemang: Heilongjiang Shen Weinong Chang Tuolaji Kaidi* [东北解放区生产建设忙: 黑龙江省委农场拖拉机开地] [Production and Construction Busy in Northeast China's Liberated Areas: Heilongjiang Provincial Party Committee Opens Tractor Station], in: *Zhishi "Haerbin"* [知识 “

The reason for promoting the use of introduction of tractors as a part of the agricultural mechanization policy became particularly relevant because of its links with the ideological mobilization of the village. The idea that collectivization is impossible without mechanization was rooted by Lenin:

*If tomorrow we could supply 100,000 first-class tractors, provide them with fuel, provide them with drivers (you know very well that at present this is fantasy), the middle peasant would say: "I am for the kommunia" (i.e., for communism). But in order to do that, we must first defeat the international bourgeoisie, we must compel it to give us these tractors, or we must so develop our productivity as to be able to provide them ourselves. That is the only correct way to pose this question.*²⁰

As Xiaojia Hou shows, Mao Zedong was inspired by and wished to replicate (and later outdo) Soviet-style collectivization, including mechanization.²¹ As a result, local and central economic organs started introducing mechanization during the land reform, the unification of peasants in cooperatives, and the process of collectivization. Then, when the local Soviet economic model in Manchuria was expanded in the FFYP to the national level, China's need for agricultural machinery was too great for it to rely exclusively on imports.²²

With the end of the Korean War in 1952 and the establishment by the US of the First Island Chain (to contain China), Mao Zedong, seeking national independence and security within the framework of the FFYP, proposed gradual large-scale industrialization, economic nationalization, the collectivization of agriculture, and political centralization throughout the country. This was to be executed with Soviet assistance.²³

During Li Fuchun's²⁴ long stay in Moscow between August 1953 and May 1953, the two countries signed an agreement for Soviet assistance in 156 key heavy-industry projects.²⁵

哈尔滨”] [Knowledge “Harbin”], 10 (1949) 6, pp. 1–2; S. Geqiainuofu [各奇奥诺夫], Jiqi Tuolaji Zhan de Tuolaji Gongzuodui [机器拖拉機站的拖拉機工作隊] [Tractor Team at Machine Tractor Station], in: Xinwen Leibian [新闻类编] 1656 (1948), p. 24.

20 V. I. Lenin, *Sobranie Sochinenii* [Collected Works], vol. 24, p. 170 (own translation).

21 X. Hou. “Get Organized”: The Impact of the Soviet Model on the CCP's Rural Economic Strategy, 1949–1953, in: Bernstein and Li (eds.), *China Learns from the Soviet Union*, pp. 167–173, at p. 173.

22 In the early 1950s, Chinese farms had been utilizing caterpillar tractors and large combines imported from the Soviet Union, Hungary, East Germany, and Czechoslovakia. See L. Kuo, *Agricultural Mechanisation in Communist China*, in: *The China Quarterly* 17 (1964), p. 136. Some files from the CIA archives provide information about China's import of tractors from East Germany and Czechoslovakia. See *Tractor Production. 1955. CIA-RDP80-00810A007400300003-71; VEB TRAKTORENWERK BRANDENBURG. CIA-RDP83-00418R000400210003-7; Imports of Machinery and Transportation Equipment by Communist China 1950–58. (1960). CIA-RD-P79R01141A001700080001-3.*

23 Y. Li [李越然], *Woguo Tong Sulian Shangtan: Diyi ge Wunian Jihua Qingkuang he Huiyi* [Negotiations between Our Country and the Soviet Union: Recollections on the Circumstances of the First Five-Year Plan], in Pei Jianzhang (ed.), *Xin Zhongguo Waijiao Feng Yun* [新中国外交风云] [The Stormy Diplomacy of the New China], vol. 2, Beijing 1991, pp. 15–18.

24 Li Fuchun [李富春] (1900–1975): a PRC statesman, Vice-Premier of the State Council of the PRC (1954–1975), Minister of Heavy Industry of the People's Republic of China (1950–1952), and Chairman of the State Planning Committee of the PCR (1954–1975).

25 Xinhua She, *Zhongyang Renmin Zhengfu Weiyuanhui Juxing di Ershiliu ci Huiyi*. Li Fuchun Guanyu Sulian

The overarching objective of this agreement was to “reshape China’s national economy materially by establishing and expanding major socialist industries”, which involved expanding and modernizing the electricity, coal, and petroleum industries and establishing a modern steel and non-ferrous metals industry and basic chemicals industry. It also aimed to establish machinery manufacturing industries that would produce large metal-cutting machines and power generation, metallurgy, and mining equipment, along with automobiles and airplanes – and tractors.

Similar to the Soviet industrialization experience from the late 1920s, China’s State Planning Commission included the project of a tractor plant in the FFYP – the YTO was one of the 156 key projects.²⁶ The Soviet FFYP (1928–1932) was marked by the construction of three tractor-production giants: the Stalingrad, Kharkiv, and Chelyabinsk tractor plants. Thus created in the 1930s, the Soviet tractor industry not only enabled the leadership to carry out the collectivization and industrialization of agriculture but also to export the machines.²⁷ The potential for transferring tractor production to a military footing was also a major factor in the accelerated construction of the three industrial plants – indeed, Soviet tank production was based there in the pre-war and early World War II years.²⁸ The consideration of this facet of the future Chinese tractor industry can be easily traced from the history of choosing a location for the YTO.

3. Locating the Factory and the Kharkiv-Luoyang Connection: Modelling Machine, Factory, and the City

In 1953, the Ministry of Automobile and Tractor Industry of the USSR and the First Machine-Building Ministry of the People’s Republic of China signed an agreement for a tractor factory project that would have an estimated annual production of 15,000 units.²⁹ Immediately after signing the agreement, the Preparatory Department,³⁰ a

Zhengdu Shangtan dui Woguo Jingjianshe Yuanzhu Wenti de Baogao [中央人民政府委员会举行第二十六次会议 李富春作关于与苏联政府商谈苏联对我国建设援助问题的报告] [The Central People’s Government Committee Held the Twenty-Sixth Meeting. Li Fuchun Made a Report on Discussions with the Soviet Government about the Soviet Union’s Aid to My Country’s Economic Construction], in: Renmin Ribao, 16 September 1953.

26 B. Zhang, J. Zhang, and F. Yao, Technology Transfer from the Soviet Union to the People’s Republic of China: 1949–1966, in: *Comparative Technology Transfer and Society* 4 (2006) 2, pp. 111–112.

27 For the social and cultural impact of the tractor’s introduction to the Soviet villages during the collectivization campaigns, see S. Fitzpatrick, *Stalin’s Peasants: Resistance and Survival in the Russian Village After Collectivization*, Oxford 1994, pp. 136–146.

28 S. Melnikova-Raich, The Soviet Problem with Two ‘Unknowns’: How an American Architect and a Soviet Negotiator Jump-Started the Industrialization of Russia, Part I: Albert Kahn, in: *The Journal of the Society for Industrial Archeology* 36 (2010) 2, pp. 57–80, at p. 59.

29 Russian State Archives of Economics (RGAE), f. 365, op. 6, d. 1452.

30 The Preparatory Department [新厂筹备处] was a subdepartment of the Automobile Industry Administration Bureau of the First Ministry of Machine-Building Industry. The Department was responsible for executing projects on constructing the three factories: No. 1 Chinese Tractor Factory, Mining Machinery Factory, and Bearing Factory. All of them would be located in Luoyang.

special division of the First Machine-Building Ministry, which was responsible for the project supervision, began its investigation to identify the best location for the factory construction.

At the beginning of the 1950s, various locations in northeastern and northern China had advantages over Luoyang in terms of technical stuff, transport, and raw materials.³¹ The Preparatory Department initially selected the cities of Shijiazhuang, Zhengzhou, Harbin, Xian, and surrounding villages as possible sites for the plant.³² The best conditions were in Harbin. Relatively early, the Chinese Communist Party (CCP) had launched the agricultural cooperative movement with the policy of collectivization under the leadership of Gao Gang; thus, it was assumed that the Northeast would need tractors in the future. Also, transportation costs would be minimized if the factory site were located in this area. Against these considerations, however, proximity to the border made such locations vulnerable. This was certainly a concern for the CCP; as Covell Meyskens has pointed out, China did not have a Cold War, it had hot wars – notably, the recently halted Korean War.³³

In August 1953, a group of 32 cadres from the Preparatory Department and the Henan Provincial Committee of the CCP, headed by Yang Ligong,³⁴ shifted its investigative focus from the North-East to Central China. Accompanied by Soviet experts, the group investigated three cities: Xian, Luoyang, and Zhengzhou. Xi Guangping, a member of the Preparatory Department's group and a local cadre, recalled the investigation process: The Soviet experts believed that Zhengzhou, being a big city, offered many favorable conditions, while Luoyang had little to rely on except for favorable land conditions. However, from the perspective of national industrial layout, our country viewed Luoyang as the place that had always been a battleground for military strategists and the ancient capital of thirteen dynasties. Situated in the hinterland of the Central Plains and surrounded by mountains, Luoyang provided conducive conditions for war preparations. Therefore, it was ultimately decided to build the factory in Luoyang.³⁵

Indeed, during the Japanese invasion Luoyang had already proof its strategic territorial advantage. The January 28 Incident was one of the most important events during leading up to the Sino-Japanese War, the clash between China and Japan from 28 January to 3

31 The North-East was the core of Chinese FFYP, and the most of the industrial projects had been concentrated in this region.

32 Tolajichang Changqu Xuanze Yijian Baogao [拖拉机厂厂区选择意见报告] [Report on the Selection of Tractor Plant Area], 11 July 1953, in: Diyi Tuolaji Zhizaochang Fangangan [第一拖拉机制造厂档案馆] [Archives of the First Tractor Manufacturing Factory], 53-4-10002.

33 C. Meyskens, *Mao's Third Front: The Militarization of Cold War China*, Cambridge, UK 2020, p. 21.

34 Yang Ligong [杨立功] (1919–2010) was the first director and party secretary of Luoyang No. 1 Tractor Factory. At the beginning of the establishment of Luoyang Institute of Technology, he was appointed as the first dean. Afterwards, he served as a Deputy Minister of the Ministry of Agricultural Machinery, the Eighth Ministry of Machinery Industry, Deputy Minister and Minister of the Ministry of Agriculture and Forestry, and Minister of the Ministry of Agricultural Machinery.

35 G. Xi [席光平], *Yi Women Zai Di Ti Tuolaji Chang Gongzuo de Jingli* [忆我们在第一拖拉机厂工作的经历] [Reminiscing about Our Experience Working in The First Tractor Factory], in: Henan Wenshi Ziliao [河南文史资料] [Henan Literary and Historical Materials], 3 (2009), p. 34 (own translation).

March 1932. Japanese army officers sparked anti-Japanese protests, and militant Japanese Buddhist priests were sent to Shanghai to incite nationalist sentiment. The fighting in Shanghai was incredibly fierce, and the battleground was in such close proximity to Nanjing that the seat of the government had been moved to Luoyang to avoid military disruptions.³⁶ Thus, the ancient city became his first temporary place for relocation of the government.

Moreover, Luoyang was rich in mineral resources and other raw materials necessary for production.³⁷ Henan province, situated in the Great Plain of China within the Yellow River Valley, is recognized as the cradle of Chinese civilization and has long relied on agriculture as a key component of its economy. Therefore, situating a factory close to collective farms and agricultural communities, its potential “customers”, was logistically advantageous. This rationale for the selection of Loyang was similar to that employed by the Soviet government in establishing their initial tractor factories, whose proximity to fertile Ukrainian and southern Russian fields informed the selection of Stalingrad and Kharkiv as factory sites, while the Chelyabinsk Tractor Works, founded in 1933, supplied tractors to the Siberian agricultural region.

According to the YTO factory records, on 8 January 1954, after the final investigation with Soviet experts of the factory site, Li Fuchun returned to Beijing to report on the decision to Mao Zedong, who humorously noted, “The emperors of the nine dynasties in Luoyang have all lived there; can’t they build a tractor factory?”³⁸ In February 1954, the State Planning Committee approved Luoyang as the site for the YTO, the Luoyang Mining Machinery Factory, the Luoyang Bearing Factory, and a number of subsidiary enterprises.³⁹ The decision was followed by regulations in the Ministry of Construction, which included Luoyang in a group of eight cities designated to receive major new industrial enterprises.⁴⁰ The allocation of several heavy industry factories in one place was supposed to create a self-sufficient infrastructure that could cover all the steps in the heavy machinery production process. Thus Luoyang was made one of the eight cities –

36 S. W. Chor, *The Making of the Guomindang’s Japan Policy, 1932–1937: The Roles of Chiang Kai-Shek and Wang Jingwei*, in: *Modern China* 28 (2002) 2, p. 223.

37 Yituo Chang Zhi, p. 4. Both Zhengzhou and Luoyang would later become industrial cities in what came to be known as the “Third Front”.

38 Yituo Chang Zhi, p. 31. Although the origins of this phrase are likely to have a mythical nature, its creation and continued persistence as a symbol of the self-proclaimed socialist civilization with Chinese characteristics underscore the narratives of industrialization and modernization that have emerged alongside the historical narratives of the Chinese nation. S. Kotkin, *Magnetic Mountain: Stalinism as a Civilization*, Oakland 1997; T. Zhao [赵汀阳], *Lishi Wei Ben de Jingshen Shijie [历史为本的精神世界] [History-based Spiritual World]*. Jianghai Xuekan 5 (2018), pp. 5–13.

39 Guojia Jihua Weiyuanhui Guanyu Tuolaji Zhizaochang Changzhi de Jueding [国家计划委员会关于拖拉机制造厂厂址的决] [Decision of the State Planning Commission on the site of the tractor factory], 1954.2.27, in: Yituo Changzhi, p. 543.

40 Y. Ding [丁一平], “Yiwu” Jihua yu Lyoyang Gongye Jiandi Jianshi [“一五”计划与洛阳工业基地建设] [“The First Five-Year Plan” and Luoyang Industrial Base Construction], in: *Dangdai Zhongguo Shi Yanjiu [当代中国史研究] [Contemporary Chinese History Studies]* 24 (2017) 2, pp. 27–36.

alongside Taiyuan, Baotou, Lanzhou, Xi'an, Wuhan, Datong, and Chengdu – targeted for rapid industrialization.⁴¹

While the Chinese side was choosing the factory location, Soviet institutes and factories worked on the design project and produced the equipment for the plant. As mentioned, the implementation of the Soviet aid project occurred within the framework of agreements between the ministries. According to the contract for the project of the tractor factory, the Soviet Ministry of Automobile and Tractor Industry and the First Machine-Building Ministry of the PRC performed the role of the executor and customer, respectively, while V/O Technoimport and Technoexport acted as financial intermediaries for import-export operations.⁴² Soviet factories and ministry departments had established a dedicated Department of External Relations (*Otdel Vneshnih Snoshenii*) to handle communications on such projects.

In total, the contracts for the tractor factory list over 30 departments and organizations as having participated in the YTO project.⁴³ The order–fulfilment system for China was centralized and potentially enabled the Soviets to take orders for large infrastructure projects (which subsequently increased in number after the 1950s)⁴⁴ with an “all-in-one” approach (including design, construction assistance, supervision, preparation, and equipment supply). Although this technology transfer system had a highly centralized nature, the institutions and organizations involved in the process were largely scattered around the periphery, outside the Beijing–Moscow line.

Giproavtoprom (Kharkiv), the State Institute for the Design of Automotive and Tractor Industry Plants, became the central institution for developing the blueprint for the future factory in Luoyang.⁴⁵ Additionally, many other construction bureaus and machinery producers provided for the construction of the plant. These included the Research Automobile and Automotive Institute (*Nauchno-issledovatel'skiy Avtomobil'nyy i Avtomobil'nyy Institut*, NAMI) (design assignment); the Kharkiv Design and Research Institute (KhTZ) (construction projects); the Gorky Automobile Plant and the Moscow Automobile Plant (named after I.A. Likhachev); *Glavavtopribor*, the Main Directorate for the Production of Automobile and Tractor Machinery and Equipment; the *Avtoarmatura* (Leningrad) and *Vladimir Avtopribor* plants; *Avtoelektropribor* in Riga; the

41 H. Li [李浩], *Ba Da Zhongdian Chengshi Guihua: Xin Zhongguo Chengli Chuqi de Chengshi Guihua Lishi Yanjiu* [八大重点城市规划：新中国成立初期的城市规划历史研究] [The Planning of Eight Key Industrial Cities: Urban Planning History in the Early Days after the Founding of New China], Beijing, 2016.

42 *Vsesoiuznye Obshchestva* (V/O) were the Ministry of Foreign Trade departments tasked with conducting negotiations and ensuring the fulfilment of import-export contracts. These departments specialized in various sectors of the economy, as indicated by their distinct names; Technoimport was one such.

43 These contracts include documentation located in Russian and Ukrainian archives, namely, RGAE, f. 8115, op. 3, d. 998; RGAE, f. 365, op. 6, d. 1452; Central State Scientific and Technical Archive of Ukraine (CDNTAU), f. P-43, op. 1, d. 870–1.

44 For the scale estimates of the system of the Soviet “assistance projects” during the Cold War, see O. Sanchez-Sibony, *Red Globalization: The Political Economy of the Soviet Cold War from Stalin to Khrushchev*, Cambridge, UK, 2014.

45 CDNTAU, f. P-43, op. 1, d. 870–1.

Kharkiv Electromechanical Plant. Overall, most of the contributors to the projects were located in Kharkiv.

Kharkiv, the former capital of the Ukrainian SSR,⁴⁶ had already, since the 1930s, served as the focal point of Soviet agricultural engineering, and was described by Stalin as “a steel bastion of the collectivization of agriculture in Ukraine”.⁴⁷ The production and design of tractors were executed there in what was the USSR’s largest tractor plant. *Giproselmash*, the State Institute for the Design of Agricultural Engineering, was the country’s leading organization for the design of tractor plants and agricultural engineering plants. Thus, not only was the main “executor” for the Luoyang project located in Kharkiv, but this city also concentrated Soviet expertise in the field of agricultural, aviation, automotive, and military engineering more generally. Kharkiv would subsequently play a key role in creating the Luoyang tractor industry, starting with the factory blueprints prepared by its design institutes and ending with the training there of Chinese specialists.

Neither the model for the first Chinese tractor nor the design for the Luoyang plant was made from scratch. At the vanguard of standardization methods since the 1930s, Soviet design institutes were long accustomed to working according to existing patterns. The protocol on approval of the draft design of the YTO indicates several reference points from which Soviet and Chinese tractor builders began. The first and foremost was the machine itself, the tracked tractor model DT-54.

First produced in 1949, the DT-54 was the Soviet Union’s most popular tractor until its collapse four decades later. Mikhail Sidelnikov (* 1911) developed the model during the war years at the Altai Tractor Works (est. 1941), the place to which the Kharkiv factory was evacuated during WWII. The development of tank production during the war served as a guide for designing caterpillar tractors and the gradual transition to agricultural mechanization. In 1950, the output of this model amounted to 51,000 tractors per year, slightly less than half of the total production of tractors in the country, and in 1954, the 100,000th DT-54 tractor was released from Kharkiv’s conveyor.⁴⁸ By the time the tractor plant construction in Luoyang began, therefore, the Soviets had extensive experience in producing the DT-54 and were able to offer the Chinese a proven, user-friendly machine that would easily break down but was also easily repaired. However, although the DT-54 was a good machine for wheat and rye, it was a heavy and clumsy tractor and not at all suitable for rice fields; its use was suitable only for wheat provinces.

If industrialization in the interwar period made the tractor a dominant cultural symbol of Soviet society, the DT-54 was a tangible symbol of Soviet post-war modernity.⁴⁹ Thus,

46 Kharkiv was the capital of the Ukrainian Soviet Republic until 1934.

47 To the Workers and the Administrative and Technical Personnel of Kharkiv Tractor Works Project), <https://www.marxists.org/reference/archive/stalin/works/1931/10/x01.htm> (accessed 21 January 2023).

48 USSR Industry (Statistical Collection), Moscow 1957, pp. 228–229.

49 K. Clark, Moscow, the Fourth Rome: Stalinism, Cosmopolitanism, and the Evolution of Soviet Culture, 1931–1941, Cambridge, MA 2011, pp. 138–140. In Soviet cinematography, for example, famous actors played the role of tractor drivers on this particular machine; the DT-54 appears in the film *Ivan Brovkin* in Virgin Lands (Ivan Brovkin na Tseline) (1958), that it can be considered a protagonist in the plot, along with the people’s favourite actor, Leonid Kharitonov (Ivan Brovkin Na Tseline [1959], IMDb, <https://www.imdb.com/title/tt0051789/>). In It Happen-

exporting this Soviet symbol to China made the tractor a part of the representation of Chinese socialist culture.⁵⁰ The purpose here is not to dig into the fruitful topic of cultural symbolism and compare the two socialist countries but to illustrate that the chosen tractor for production in China was not only a significant part of the Soviet economy but also an important element in its cultural representation.

At the end of 1954, Mikhail Sitsinsky, the chief engineer for the project, handed over the ready-made design project to the representative of the First Ministry of Machine-Building Industry, Jiang Zemin.⁵¹ In order to develop a DT-54 production line for the Chinese factory, Sitsinsky relied on the tried and tested principles of standardization, typologization, and rationalization developed in the Stalin industrialization during the interwar period.⁵² He relied on the existing models of technology and production spaces; for example, according to the documentation from Central State Scientific and Technical Archive of Ukraine (*Tsentral'nyy derzhavnyy naukovo-tekhnichnyy arkhiv Ukrainy*), several parts of the Kharkiv tractor factory were basically copied for the Chinese factory.⁵³ Established in 1930, the Kharkiv tractor factory had been restored in the late 1940s after its evacuation during the war. Its original construction was the result of Soviet cooperation with American business,⁵⁴ a widespread phenomenon of Stalinist industrialization in the late 1920s and early 1930s.⁵⁵ The American architect Albert Kahn, known as the father of factory design, was the project's main developer. It was built and dismantled in America and then reassembled in Kharkiv in 1930; apparently, American and German engineers supervised its reassembly and launching processes.

ned in Penkovo (Delo bulo v Pen'kove) (1957), the characters Matvey Morozov and Zefirov (played by Vyacheslav Tikhonov and Yuri Medvedev) stage a "tug-of-war" contest on two DT-54 tractors to determine "whose tractor is stronger." (Delo Bylo v Penkove [1958], IMDb, https://www.imdb.com/title/tt0050303/?ref_=fn_al_tt_1). Many other movies included episodes with the DT-54, including *The First Echelon* (Pervyy echelon) (1955), *Quarrel in Lukashi* (Ssora v Lukashakh) (1959), *Battle on the Road* (Bitva v Puti) (1961), *Horseback* (Khod konyom) (1962), and Shukshin's legendary *The Red Snowball Tree* (Kalina Krasnaya) (1974).

50 T. Chen, *Female Icons, Feminist Iconography? Socialist Rhetoric and Women's Agency in 1950s China*, in: *Gender & History* 15 (2003) 2, pp. 268–295, <https://doi.org/10.1111/1468-0424.00303>; D. Du, *Socialist Modernity in the Wasteland: Changing Representations of the Female Tractor Driver in China, 1949–1964*, in: *Modern Chinese Literature and Culture* 29 (2017) 1, pp. 55–94.

51 Jiang Zemin [江泽民] (1926–2022) was a Chinese politician who held several high-ranking positions in the CCP, including General Secretary of the CCP (1989–2002), Chairman of the Central Military Commission (1989–2004), and President of China (1993–2003). During the Mao era, he worked in the First Machine-Building Ministry, studied at the Stalin Automobile Works in Moscow, and held the post of Director in the Changchun No. 1 Automobile Plant.

52 C. Crawford, *From Tractors to Territory: Socialist Urbanization through Standardization*, in: *Journal of Urban History* 44 (2018) 1, pp. 54–77.

53 CDNTAU, f. P-43, op. 1, d. 870–1, l. 15.

54 Melnikova-Raich, *The Soviet Problem with Two 'Unknowns'*, pp. 57–80.

55 Y. Cohen conceptualized it as "Stalinism continually resorted to borrowing." (Y. Cohen and S. Lin, *Circulatory Localities: The Example of Stalinism in the 1930s*, in: *Kritika: Explorations in Russian and Eurasian History* 11 [2010] 1, pp. 11–45); On the particular example of the Soviets cooperation with foreign business, see D. Dalrymple, *American Technology and Soviet Agricultural Development, 1924–1933*, in: *Agricultural History* 40 (1966) 3, pp. 187–206; S. Kotkin, *Magnetic Mountain: Stalinism as a Civilization*, Oakland 1997; S. Link, *The Soviet Auto Giant*, in: *Forging Global Fordism: Nazi Germany, Soviet Russia, and the Contest over the Industrial Order*, Princeton, NJ 2020, pp. 90–130.

The DT-54 was developed entirely by the Soviet construction institute, as opposed to the first tractor produced in Stalingrad and Kharkiv, which were copies of American models. Overall, one can say that the process of technology transfer between the USA and USSR in the early 1930s was replicated by that between the USSR and China in the 1950s, although the details differed. For example, the city of Kharkiv became the central location for the design of the Chinese tractor factory, but, unlike the case of the US-to-USSR transfer, the Kharkiv tractor factory was used as the training base for the Chinese managers and skilled workers.

As a recipient of Western technologies, the Soviet Union established three tractor plants during its FFYP. Two of them, the Stalingrad and Kharkiv plants, were completely developed by Albert Kahn's company, which not only prepared the design project but also provided everything necessary for the plant's construction (equipment, supervision, technical documentation, and training for Soviet personnel). After the 1950s, Soviet Ministries used this type of all-in-one approach when the country became a "donor" for China's industrial projects. Thus were the main features of the Soviet Aid model in constructing foreign infrastructures rooted in the interwar period of Stalin's industrialization.

In parallel with creating a technological base for rural mechanization, there was the (re) construction of a new urban environment in Luoyang. The visual documentation of pre-industrial Luoyang owes gratitude to the German pilot, traveller, and photographer, Wulf-Diether, who captured aerial photographs of Chinese cities while working for Lufthansa in China during the 1930s.⁵⁶ These photographs, as indicated, allow us to gain insight into the appearance of Luoyang before the onset of industrialization involving, among others, the YTO (Fig. 1).

Figure 1: Bird's-eye view of the Luoyang (late 1930s).⁵⁷

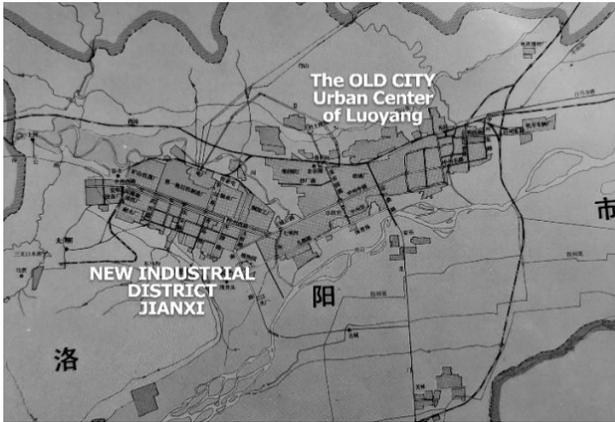


56 Wulf-Diether, Count of Castell-Rüdenhausen (1905–1980) was a German aviation pioneer and later director of Munich-Riem Airport. At the age of 25, he became a pilot with Deutsche Lufthansa, and from 1933 to 1936, he was commissioned to set up a continuous air-traffic network in China with the Lufthansa subsidiary Eurasia.

57 Source: Wulf-Diether zu Castell, *Chinaflug*, Berlin 1938, p. 82.

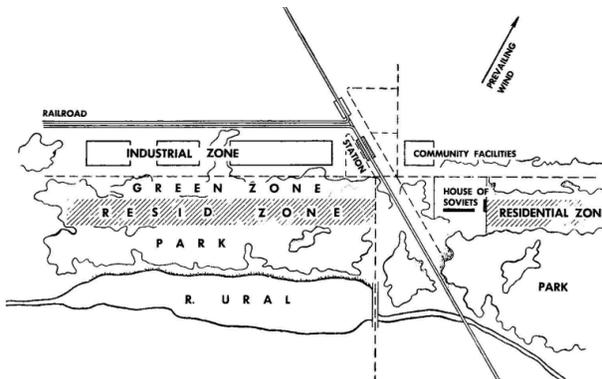
Twenty years after the Lufthansa pilot had photographed Luoyang, it underwent a complete transformation. The planning model for the new industrial area of Luoyang was not the traditional Chinese model of city development with a centre and a periphery, as used in cities like Beijing and Xi'an.⁵⁸ Rather, Luoyang's plan assumed a horizontal expansion, where all enterprises would be located in a separate area 10 km from the old city (Fig. 2).

Figure 2: The old city of Luoyang and allocation of the new Jianxi district.⁵⁹



The territory of the industrial region had a “linear” layout. This type of division into various functional zones was proposed in the early 1930s by Russian architect Nikolay Milyutin and had been employed, in a modified form, in the socialist cities of the first Soviet five-year plans (Fig. 3).

Figure 3: Milutin’s “linear city” site plan (1930).⁶⁰



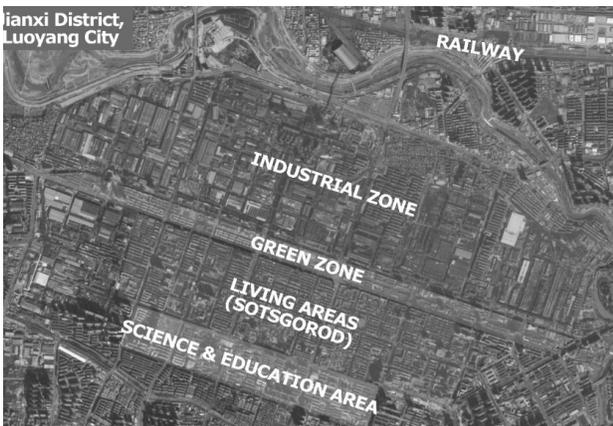
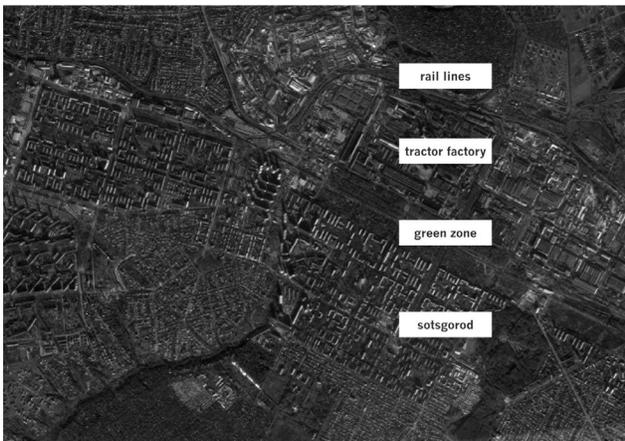
58 F. Lanza, *A City of Workers, a City for Workers? Remaking Beijing Urban Space in the Early PRC*, in Y. Ding, M. Marinelli, and X. Zhang (eds.), *China: A Historical Geography of the Urban*, Cham 2018, pp. 41–65.

59 Source: Map, Yituo Chang Zhi, 1985; reproduced by the author.

60 N. Milutin, *Sotsgorod; the Problem of Building Socialist Cities*, Cambridge, MA 1974, p. 70.

In April 1954, the Beijing-based National Construction Administration formed a working group and, with the help of Soviet experts, drew up a comprehensive plan for the industrial area of Jianxi (涧西区). It was guided by the same principle of linear planning that had been used in the design of the industrial areas of the Stalingrad and Kharkiv tractor plants. According to the general plan, the Jianxi site was to be built in a rural area and the factories located in a straight line along the Jianhe river. The north side of the factory area had dedicated railway stations for the main factories, and the south side of the factory area was a residential area. This division in Chinese is expressed by the formula “residence in the south, factory in the north” (南宅北厂).

Figure 4: Contemporary aerial views of Jianxi (2015).⁶¹



61 Sources: top: Google Earth in: C. E. Crawford, *The Socialist Settlement Experiment: Soviet Urban Praxis, 1917–1932*, PhD Thesis, University of Harvard 2016, p. 506; bottom: Baidu Maps, reproduced by the author.

Another similarity of the Chinese site with the Soviet model was in the position the industrial zone; the distance of Jianxi from the old city was the same, relatively, as that of the Kharkiv Tractor Plant from the city (during its construction). This planning principle was not only found in communist China; for example, there was the Texi (铁西) district of Shenyang (then called “Fengtian” [奉天]), which was built by the Japanese in 1938.⁶² The linear layout of industrial cities, which was popularized globally in the first half of the twentieth century, was most widely distributed in the Soviet Union.⁶³ What distinguished the Soviet expression, however, was its planning principles and practices, its production and reproduction. As urban historian Christina Crawford highlights, the two key elements of the *sotsgorods*’ design were standardization as a process, and a model (or type), as a tool.⁶⁴ Not only was the planning of Jianxi the result of a standardization, one in which Kharkiv *sotsgorod* served as the model,⁶⁵ since, as Yiping Ding and Hao Li show, the Jianxi urban design itself became the element of the further Chinese architectural practice of standardization. Thus, the “Luoyang model” would become a template for urban practice during the later waves of industrialization under Mao.⁶⁶

4. Crossing the Borders: Cultural Encounters with Soviet Modernity

Shifting from the economic to socio-cultural aspects of Sino-Soviet cooperation during the factory construction, we observe that Chinese cultural encounters with Soviet modernity involved the trajectory of such encounters both within China and abroad. Specifically, for the trainees at the YTO, their exposure to Soviet modernity began in China. Wang Jinke, for example, a young, experienced Shanghainese worker, left with a group of other trainees for Luoyang from Shanghai on 18 July 1955 – and their first destination point was Changchun:

62 K. Hirata, *Mao’s Steeltown: Industrial City, Colonial Legacies, and Local Political Economy in Early Communist China*, in: *Journal of Urban History* 49 (2021) 1, pp. 1–26.

63 For a critical rethinking of the Soviet model in urban planning, see H. Li [李浩], “Yiwu” Shiqi de Chengshi Guihua shi Zhaban “Sulian Moshi” ma? — Yi Ba Da Zhongdian Chengshi Guihua Bianzhi wei Taolun Zhongxin [“一五”时期的城市规划是照搬“苏联模式”吗?——以八大重点城市规划编制为讨论中心] [Is the Work of Urban Planning During the First “Five-year Plan” Period in China Copy from the “Soviet Model”? A Case Study of the Eight Key Cities’ Planning], *Chengshi Fazhan Yanjiu* [城市发展研究] [Urban Development Studies] 9 (2015), pp. 1–5.

64 C. Crawford, *Spatial Revolution: Architecture and Planning in the Early Soviet Union*, Ithaca 2022, pp. 248–294.

65 Y. He and M. Zhou, *The 156 Projects and New China’s Industrial and Urban Development*, in: *Selected Essays on the History of Contemporary China*, Leiden 2015, pp. 54–70, https://brill.com/display/book/edcoll/9789004292673/B9789004292673_004.xml (accessed 23 March 2022).

66 H. Li [李浩], ‘Liang-Chen Fang’an’ yu ‘Luoyang Moshi’ — Xin Jiu Cheng Guihua Moshi de Duibi Fenxi yu Qishi [‘梁陈方案’与‘洛阳模式’——新旧城规划模式的对比分析与启示] [‘Liang Chen Plan’ and ‘Luoyang Model’: A Comparative Analysis and Enlightenment of New and Old City Planning Models], in: *Guoji Chengshi Guihua* [国际城市规划] [International Urban Planning] 30 (2015) 3, pp. 106–116; Y. Ding [丁一平], *Chengshi Guihua Zhong de “Luoyang Moshi” Ji qi Dangdai Yiyi* [城市规划中的“洛阳模式”及其当代意义] [The “Luoyang Model” in Urban Planning and Its Contemporary Significance], in: *Journal of Henan University of Science & Technology (Social Science)* 2 (2011), pp. 5–8.

*We boarded a special train with over 300 people. They didn't inform us that the first stop would be Changchun when we signed up for the construction site. Only after boarding were we told we were going to Changchun to learn Russian. When I was recruited in Shanghai, we were assigned to the Luoyang Tractor Factory, but after getting on the train, we were taken to Changchun.*⁶⁷

Changchun, in the central plateau of the Northeast, was the place where the CCP launched its experiment with the “Soviet model” of industrialization and collectivization. Before that, under Japanese occupation, the city had already experienced significant industrialization; the Japanese established several factories and industries in Changchun, making it one of the few relatively industrially developed locations in New China.⁶⁸

During the preparatory phase for the YTO, a group of over 100 future cadres and workers were sent to Changchun (without their knowledge). There, they underwent language training in Russian and training on the assembly line. This training took place at the already established First Automobile Works (FAW), which was utilized as a training centre because of the similarities in production processes between the automobile and tractor industries. As Changchun had inherited some of the spatial and technological aspects of the factory and industrialization from the Japanese occupation,⁶⁹ the Luoyang workers received a mixed impression of what the Soviet model should look like.

During the construction of FAW, stable business relationships were established with automobile manufacturers in the Soviet Union through connections between Giprovtoprom (Kharkiv) and the Main Design Department of the First Ministry of Machine-Building Industry of the PRC, the central institution responsible for designing automobiles and tractor factories for China. In December 1956, the Moscow ZIS and the Changchun Automobile Plant established a direct exchange of design and technological documentation, as recommended by the Soviet-Chinese Commission on Scientific and Technical Cooperation.⁷⁰ The two organizations agreed to exchange plans, reports, and test results and cooperate in production and technical assistance. For the Chinese, these connections created a favourable environment for preparing future trainees in Kharkiv. In addition to Changchun, the Russian Language School in Dalian became also a location for preparing skilled workers for their training in the Soviet Union and future work at the Luoyang factory.⁷¹

There were two main ways for Chinese skilled workers and technicians to get into Changchun. As we see in the story of Wang Jinke, his background – as a second-generation

67 Zhou, et. al. (eds.), *Nongye Jixiehua de Zhongguo Xiangxiang*, p. 154 (own translation).

68 Y. Liu, *Competing Visions of the Modern: Urban Transformation and Social Change of Changchun, 1932–1957*, PhD thesis, Berkeley 2011, pp. 15–26.

69 Hirata, *Mao's Steeltown*.

70 N. Mamaeva, I. Sotnikova, and A. Verchenko. *Uchastie SSSR v Rekonstruktsii i Stroitel'stve "156 Proizvodstvennykh Ob'ektov" v KNR v 1950-e Gody: Novye Fakty i Obstoiatel'stva Sovetsko-Kitaiskogo Sotrudnichestva* [Participation of the USSR in the reconstruction and construction of “156 production facilities” in the PRC in the 1950s], Moscow 2018, p. 218.

71 X. Zhou et al. (eds.), *Nongye jixiehua de Zhongguo Xiang*, pp. 54–55. Interview with Tian Peng (21 July 2020).

skilled worker – gave him entry. Most of these workers were considered for future training in the Soviet Union prior to going to Luoyang. Another way to get to Changchun was through connections with the People’s Liberation Army (PLA). Cang Guangcheng [臧广臣] (*1933) was raised in a poor family of peasants in Heilongjiang province and joined the PLA in 1949. After returning from the Korean War, Guangcheng entered the School of Mechanical Engineering in Changchun and specialized in metal cutting. He studied there for three years, graduating in August 1955. After passing various exams, Guangcheng was assigned to the YTO with additional training in Kharkiv.⁷²

*Apart from male workers, some female students also received training in Changchun. Qiu Yueke [裘约克] (*1930), a future engineer in Luoyang, was able to go to Changchun through a combination of her educational background and PLA connections. Born into a landowner family and raised in her aunt’s family “with servants and no housework”, Qiu Yueke describes how she was mainly focused on her studies.⁷³ After middle school and living in Shanghai for a few years, she studied at the East China Military and Political University. In 1952, working as a PLA clerical employee, Qiu Yueke entered the Changchun School of Automobile Manufacturing. After graduating in 1955, she started her career in Luoyang, where she oversaw quality control. Although she was not assigned to training in Kharkiv, Yueke recalls that she was already lucky enough to get to Changchun.*

Qiu Yueke’s story was similar, but she did not work in the factory, preferring instead to study, which made her in high demand in industrial projects. What Qiu and Wang’s stories have in common is their Shanghai origins and intellectual background, due to which they entered the Luoyang factory as cadres (*ganbu*). Entering the plant as professional workers and personnel like this can be considered honourable for that time, an elitism that became one of the elements in the formation of the collective local identity of these groups.

The formation of collective identities among the prospective group of trainees would begin to take shape on arrival in Changchun. First, community groups tied to similar places of origin formed – most of the trainees were from Jiangsu Province and Shanghai and shared a common language, the foreign tongue of Russian, which the trainees would use and have as a resource throughout their future endeavours. From the initial stages of preparation, the internship was presented as a distinguished experience reserved for a privileged few among workers and staff. Their chosenness, rooted in their connection to the Soviet or, rather, Russian language, was initially tied to the selection process and specialized training. After several months in Changchun, they headed to Kharkiv. Kharkiv was not only a reference point for the Chinese YTO plant design at since both factories produce a similar model of tractor. Hence, the training was also part of the Soviet-Chinese agreement for the Luoyang project, in addition to the design project (and

72 Ibid.

73 Interview with Qiu Yueke (7 January 2019).

production of special equipment for the Luoyang factory and supervision on site. This resulted in two groups of Chinese trainees totalling more than 130 individuals, who were sent to spend one year in Kharkiv between 1956 and 1958.⁷⁴ After returning to Luoyang, these trainees were supposed to provide the much-needed introduction and management of the production line in the Chinese tractor factory.

There were specific terms of education in Soviet factories, including individual programs for each trainee with individual supervision. For the development of an individual program, the First Ministry of Machine-Building Industry sent materials in advance to the USSR with information about the profile and specialization of future trainees and their theoretical and practical training levels and specialist knowledge of Russian. In turn, the Ministry of Agricultural Engineering provided a prepared training program in advance for agreement with its Chinese counterpart.⁷⁵ Cang Guangcheng describes the process thus:

Our group underwent an assessment by an organization, and a cohort of individuals was chosen to undertake studies in the Soviet Union. I was among the selected participants. Around October 1955, over 100 of us, including both experienced workers who had recently obtained technical diplomas and senior leaders from our factory, were transferred to Changchun to learn Russian. At that time, there were two groups, one to study at the Dalian Russian College and the other at Changchun. We made up the initial group, enrolled in Russian Class 652 and instructed by Soviet educators. In August 1956, led by Ma Jie, the Deputy Director of our factory, we embarked on an eight-day, seven-night train journey to Moscow, totalling 108 individuals.⁷⁶

The initial stages of the Sino-Soviet ideological accord occurred in 1956, when the ramifications of the 20th Congress and development of the cult of personality were already beginning to surface. Following the Party Congress and escalating tensions between the PRC and the Soviet Union, the Chinese trainees were subjected to indoctrination in Beijing before embarking on their journey to Moscow.

Wang Jinke, a member of the second group of trainees, recalls this period as follows:

In Beijing, we were strictly forbidden to discuss the topic of Stalin with our Soviet counterparts. Despite my desire to present a few Stalin badges to my new friends, I eventually brought them back to China.⁷⁷

The local media depicted a rosy image of friendship between the two nations, notwithstanding the emerging underlying tension between them. The Chinese trainees were hailed as “special” foreign guests, as portrayed in photographs and articles published

74 Correspondence found in a Russian archive between the Chinese and the Soviet side indicates 131 trainees in the Kharkiv Tractor Plant (RGAE, f. 8115, op. 3, d. 992, l. 33–34). The factory chronicle, however, defines the total number of trainees in Kharkiv as “more than 150” (Yituo Chang Zhi, pp. 21, 23).

75 Ibid., l. 40.

76 Interview with Cang Guangcheng (20 July 2020).

77 Zhou et al. (eds.), *Nongye Jixiehua de Zhongguo Xiangxiang*, p. 143 (own translation).

in the *Krasnoye Znamya* and *Sotcialistichna Kharkovshina* (Ukrainian language) newspapers.⁷⁸ Chinese newspapers, such as the People's Daily, mirrored these narratives in their articles: "According to the Xinhua news agency, Luoyang, the first tractor factory in my country, received the Soviet Union's comprehensive and unselfish assistance in the process of building the factory."⁷⁹

For the trainees in Kharkiv, meanwhile, their experiences of life and encounter with Soviet modernity affected their views of China. Inevitably, they had a quite different perspective on everyday life in the USSR to that presented in the official Chinese representation. When asked about the differences between Chinese and Soviet systems, the first and most striking feature of the Soviet industrial community they came across in Kharkiv was the abundance of female workers and their heroic and independent figures in the Soviet factories as a legacy of World War II:

*I have never seen so many strong women. It even seems that there were more women than men; even my teacher in the engine shop was a woman. I was sorry that in the USSR, women had to work like that.*⁸⁰

In spite of the CCP's endorsement of "state feminism", the implementation of socialism in the early 1950s did not result in the desired transformation in women's lives. In a socialist society, work and production were central to daily life, identity formation, and social relations. As a result, women's labour and the corresponding categories of working women became representative of the new Chinese woman, a symbol of socialist modernity, and embodied communist theory that linked women's participation in production to their emancipation.⁸¹ That the role of worker-women in the Soviet Union was so striking for the Chinese, however, indicates the gap between the representation, CCP policies towards gender issues, and the true realization of women's rights. Notably, only one female trainee was selected for the over 100 apprentices in the Chinese group.

Another important consideration is the strict adherence to the daily production plan, schedule, and administrative-command system, Kaple's "high Stalinism". By comparison, the work hours and tempo of the industry in China were markedly more relaxed, as Wang Jinke explains:

I met a crying girl at the [factory's] shop corner. She explained that the head of the group didn't let her go home to her sick child because she hadn't met her quota of a production plan. In Luoyang, if a woman was ill, she could easily take time off from work [...]. Because I was a trainee and didn't have a production plan yet, I decided to talk to the

78 "Spasibo za beskorystnu podmogu" [Thank you for your help], in: Temp, 26 July, 1958; "Nasha druzhba – navechno" [Our friendship is forever], in Temp, 26 July, 1958; Druzhiba [友谊] [Friendship], in Krasnoye Znamia, 1 May 1957.

79 Xinhua She, Tuolaji Chang Dedao Sulian Wuside Bangzhu [拖拉机厂得到苏联无私的帮助] [The Tractor Factory Receives Selfless Assistance from the Soviet Union], in: Renmin Ribao, 11 February, 1959 (own translation).

80 Interview with Wang Jinke (18 July 2020).

81 N. Spakowski, Women Labour Models and Socialist Transformation in early 1950s China, in: International Review of Social History 67 (2022) 30, pp. 131–154.

*foreman and ask for her to take leave. He agreed, but I had to stay on the assembly line until the end of the shift, producing her quota of fittings.*⁸²

There was a temporal aspect to the Soviet and Chinese production modes that was emphasized by the Chinese, thus:

*The hours of operation were different. At that time, there were very few national electrical appliances [in China]. We lived in the factory, and the big electric oven consumed a lot of electricity, so we usually worked the night shift, very late at night. Basically, at the beginning, we all worked the night shift.*⁸³

Due to the lack of electricity until at least the 1970s, that is, workers in the Luoyang factory had unique work hours. They limited their electricity usage during the day, paying for it at the cheaper night rates, which resulted in many working the night shift. Thus, most workers in China began their tenure with a night shift schedule. This divergence in industry practice represents a striking contrast with the situation in Soviet cities, where daytime work was usual. Behind these differences, which the trainees noticed and remembered, lay not just the idea that the USSR had made more progress in industrial development and electrification. The Chinese trainees defined in this the difference of the productive ethos of the Soviet industrial modernity and its temporal manifestations. Lastly, there was a spatial dimension of the trainees' experiences. The urban model for the entire city, including the factory, was designed similarly to Kharkiv. Although the architectural styles of the industrial zones in Jianxi and even the factory decoration differed markedly from those of its Soviet model, the respondents frequently referenced it. Even younger workers in Luoyang would commonly remark, "Our factories are just the same [*yimo yiyang*]!" despite never having visited Kharkiv.

5. Conclusion

The Chinese slogan popular in the 1950s, "Today's Soviet Union is like our Tomorrow" (*Sulian de jintian jiu shi women de jintian*), contains the spatial (Soviet Union–China) and temporal (today–tomorrow) semantics that discursively marked the modernization movement in the early PRC. Examining the establishment of the YTO, this paper has indicated some of the multiplicity and highly hybrid nature (often imagined) of the "Soviet model(s)" used in the early period of factory construction. This process was preceded by the initiation of the Soviet-style economic model in China, traced back to an experimental endeavour led by Gao Gang aimed at industrializing and collectivizing the Northeast region. Originally a localized model, this was subsequently adopted on a national scale during the implementation of the FFYP, coinciding with the escalating tensions of the Cold War.

82 Interview with Wang Jinke (18 July 2020).

83 Interview with Li Shujie (23 July 2020).

The transfer of technology from the Soviet Union to China during the factory construction exhibited distinct features that can be characterized as a wholesale transfer. This encompassed the provision of design plans by Soviet engineering institutes, export of Soviet equipment, training of Chinese experts, supervision of construction activities, and adaptation of technology at the site of implementation. The analysis of the organizational structure of the Sino-Soviet cooperation in the case of Luoyang indicates that the centralized connection between factories, research institutes, design bureaus, and ministries had local manifestations in China, where individual Soviet models were embodied in the local newly urbanized space, imported technologies, and cultural representations and relied upon by the PRC. The case of the Luoyang' factory, built on the Kharkiv Tractor Plant model, served as a specific reference in these realms, providing a local conceptualization of the Soviet model.