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Emerging cities and urban theories: a Chinese perspective

Fulong Wu

Introduction

The word 'city' in Chinese is actually composed of two characters, '*cheng*' (city) and '*shi*' (market). The book '*Spring and Autumn Annals of Wu and Yue*' written in 25-220 AD describes the origin of the city as: 'building the city for the emperor; developing the market for people. This is the origin of the city'. The Chinese definition points out two forces in city building: economic activities and governance. The purpose of this chapter is to understand cities as the outcome of both economic agglomeration and the politics of development. The research question we ask here is: what are the driving forces for the concentration of population and economic activities into the variegated spatial forms known as cities?

Recently, urban theorists have tried to understand the 'nature' of cities through economic agglomeration. Scott and Storper (2015) suggest that the city is an outcome of economic agglomeration and its spatial form is further moulded by the land nexus. They argue that 'agglomeration is the basic glue that holds the city together as a complex congeries of human activities, and that underlies – via the endemic common pool resources and social conflicts of urban areas – a highly distinctive form of politics, as we show later' (pp. 6-7). They elaborated that the nature of cities involved 'combining two main processes, namely, the dynamics of agglomeration and polarization, and the unfolding of an associated nexus of locations, land uses and human interactions' (p. 1). They argue that the formation of the city is driven by the force of agglomeration, extending through dispersion. They criticize the way critical urban scholars define the city through various social processes which may be related to urban life but cannot be essentially defined as the city. They suggest that the definition should separate general social process from the process of creating the city.

Their view has triggered wide debates in Urban Studies. In particular, the *International Journal of Urban and Regional Research* devoted a section to debates responding to the paper. Robinson and Roy (2016) criticised the claim for a universal urban theory from the North Atlantic which neglects the diversity and shifting geographies of global urbanization. In another paper, Robinson (2016) advocates a comparative approach to theory building, 'which can help to develop new understandings of the expanding and diverse world of cities and urbanization processes, building theory from different contexts' (p. 187). Other papers in the special issue emphasize the need to understand everyday life and urban experience. Simone (2016) stresses blacks' different experience of cities. He describes the heterogeneity of urban experience, particularly the association of blacks with urban lives. Peake (2016) emphasizes the experience of women in urbanization. Other researchers point out the need to understand the city in relation to policy research. Parnell and Pieterse (2016) argue that rather than thinking of the nature of cities in an abstract form there is a need for basic,

descriptive and politically engaged research for Africa. Leitner and Sheppard (2016) call for a 'provincialization of urban theory' and argue that no single theory is sufficient to account for the 'variegated nature of urbanization and cities across the world' (p.228). More critiques come from a political economic perspective. Walker (2016) examines the urban process as the spatial concentration of economic surplus by ruling classes and the state. He argues that the creation of the built environment in the form of cities is a result of the urban process.

As shown at the beginning of this chapter, China has a long history of city building. Its pace of urbanization, however, has speeded up over the last four decades. Owing to its specific development history and the large scale of city building, the Chinese experience of urban development may bring a new perspective to the understanding of emerging cities. For example, the development of 'edge cities' and post-suburbia has been understood through post-industrial restructuring and flexible accumulation. But the Chinese case indicates the need to understand the role of political leaders in land development, place promotion and a land-finance model of urban development. Similarly, gated communities are widely understood in terms of a lifestyle choice, a rising concern for security, and a preference for private governance. But the Chinese case indicates a more supply side reason. Associated with real estate projects, developers try to create an imaginary western suburbia to brand suburban and rural areas. As will be elaborated in the next section on the model of urban development, gated communities are part of an overall development strategy supported by the entrepreneurial local state, which is incentivised by land-based development from land sales and constrained by its means of mobilising financial resources (because of the restriction on raising money directly from the capital market).

New model of urban development

China's urbanization has been driven by its development model, which can be characterised as the model of the world factory (Wu, 2017). Export-oriented industries have been a key element, integrating the Chinese economy into the global production network, trade and financial flows. Other elements are cheaper land resources and a rural migrant workforce in addition to the well-trained workers in the cities. Through the decentralization of economic decision-making and fiscal reform, local governments are incentivised to promote urban development. They use their control over the land to attract investment. The development of manufacturing industries in turn attracts migrant workers. Rural–urban migration and industrial land development associated with the world factory are leading Chinese urbanization. The major challenges of this model of urban development are both social and environmental. Migrant workers are not treated as urban citizens and thus are excluded from the city. Social exclusion has severe economic implications too, as the consumption capacity for basic needs and services is under-developed. The constraint on domestic consumption forces China to continue to rely on global markets. Second, land development is mainly for capital investment. Competing to release land to attract investment, Chinese cities have seen significant spatial expansion, creating a scattered pattern of urbanization. Large-scale development and spatial fragmentation have led to environmental degradation. Industrial development stimulates the agglomeration of population and services. The entrepreneurial local government actively promotes real estate development because public finance depends upon income from land sales. This business model is commonly referred to as a land-finance model. In order to capture land values, local governments

compete with each other in place promotion, because the rise in property values is expected to generate larger land revenues. Increasing land value allows the local state to use the land as collateral to obtain more capital for investment. The actual development is operated through state-owned enterprises or so-called 'local government finance vehicles' (LGFVs). Increasingly, development takes the form of mega-urban projects to maximize land value and access to credit through land-financing.

This model of urban development reveals that agglomeration plays a key role in linking land, capital and labour to create mega-urban projects and new cities. However, the actual operation of this model is determined by not only economic factors but also the specific form of governance. The multi-scalar state, in particular the local entrepreneurial state, orchestrates the conditions for the model. Global capitalism provides the external conditions for this model. The new model of urban development in China is part of a 'global spatial fix'. Over-accumulation in the West finds its outlet for surplus capital in emerging economies and has expanded its production at the global scale. But increasingly, the new model of development is leading to its own problems of over-accumulation and redundant production capacity in China. With intensifying China–US trade tension since 2018 and a turn towards new trade protectionism, China can no longer rely on the global market to sustain its urbanization and urban development. The need to find a new spatial fix may be a prelude to a change from deregulation to reregulation in urban development. In the next phase of economic development, the city may be the form to implement these regulatory tasks. As such, the thesis of agglomeration only reveals part of the whole dynamics of emerging cities.

Emerging city-regions

One important feature of China's urbanization is the development of 'urban clusters' in its highly populated regions such as the Pearl River Delta, the Yangtze River Delta, and the Beijing-Tianjin-Hebei (Jing-Jin-Ji) region. The notion of 'urban clusters' in China is similar to that of the city-region in the Western literature (Harrison, 2014). The concept of urban clusters is not a statistical one and refers to loosely linked metropolitan areas. Thus, connectedness between cities is the key for city-region formation. More broadly, cities are connected in a larger regional scale, forming 'mega-city regions' (Hall & Pain, 2006). Regional and inter-city transport development facilitates the development of mega-city regions. On city-regions, Scott (2001) argues that agglomeration is driving the development of economic activities not just inside the city but also linking the region where the city is located. Thus, the city-region is a new emerging form of the globalization of economic activities. This view of global city-region development is associated with the view of suburban and post-suburban development in a wider region. More studies nowadays try to understand the politics and governance of city-region formation (Jonas & Ward, 2007). Theoretically, the emergence of city-regionalism is understood as 'state transformation', or more specifically the rescaling and territorialisation of the state (Brenner, 2004). The theory of state rescaling stresses how the state selects the specific city-region scale to govern its territory. This view of 'state spatial selectivity' applies to China (Wu, 2016a). The form of economic regulation has transformed from the national scale before economic reform, to individual cities in the early stage of economic reform, and to the city-region scale after China joined the World Trade Organisation (WTO). Under globalization, new economic

activities spread across the boundaries of cities into the region, presenting a new spatial form of the city-region. This is well described by economic agglomeration (Scott, 2001; Scott & Storper, 2015). But at the same time Chinese cities face fierce inter-city competition, redundant production capacity, excessive infrastructure development and environmental degradation. Thus, city-region formation should also be understood as a project to upscale governance from individual cities to their city-regions (Wu, 2016a) in particular through regional cooperation and planning (Li & Wu, 2018). In the YRD, this involves both a top-down city-region building process through urban cluster planning and governance and bottom-up collaboration between cities (Li & Wu, 2018). Therefore, the emergent city-regions in China are outcomes of both economic agglomeration and institutional and governance changes towards coordinating economic activities.

The development of Kunshan near Shanghai is a good example. As China's globalising city, the municipality of Shanghai covers an administrative region of 6340 square kilometres, a vast area encompassing the central areas, suburban new towns and rural areas. The metropolitan region itself can be seen as a city-region. But the impact of Shanghai goes beyond its administrative areas and affects cities in Jiangsu and Zhejiang provinces. For example, the former county of Kunshan under the Suzhou municipality is very close to Shanghai. The town of Huaqiao in Kunshan can receive a mobile signal from Shanghai. Kunshan county was underdeveloped. In 1984, it self-funded a development zone which was recognized by the central government as a national level Economic and Technological Development Zone (ETDZ) in 1992. The development of Kunshan utilized technological spill-over from Shanghai and attracted Taiwanese investment in the ITC sector. It is a major site in China for the assembly of electronic products including the iPhone. So, the development of the wider Shanghai region seems to support the thesis of economic agglomeration. However, Kunshan as well as other cities in the YRD has competed with Shanghai. Excessive inter-city competition has triggered two related processes of city-region building: the top-down process initiated by the central government and the bottom-up process created through cooperation between local governments (Li & Wu, 2018). Therefore, city-regions are not just economic spaces but also political spaces – in this case they can be seen as a new 'state space' in which the state strives to impose its control while multiple actors participate in this process to gain their own benefits. For example, through the intervention of senior politicians at the provincial and central levels, Shanghai extended its No. 11 metro line into Kunshan, which had been advocated by the city of Kunshan for a long time. Still, city-regional integration remains difficult owing to administrative divisions. In this case, there is a provincial level boundary between Kunshan and Shanghai, which imposes a major obstacle. The central government plays an important role in promoting the integration of cities in the YRD through the YRD regional plan. It specifies the future development corridors and designated spaces for environmental and agricultural land protection. But such a regional plan lacks enforcement power. In reality, local governments utilize the plan for their own benefit.

More recent development in Jing-Jin-Ji reveals the political nature of city-region building. As the capital, Beijing is concentred with government offices, political organisations, the headquarters of Chinese state-owned enterprises, and multinational regional headquarters. The concentration of population in central Beijing is believed to be the main cause of its environmental problems, especially air pollution. The central government has thus striven

to decentralize the economic functions of Beijing to a large city-region outside its metropolitan area. The government classified economic functions into 'essential' and non-essential for Beijing's capital role. The decentralization policy is implemented through the relocation of enterprises and the demolition of informal spaces for the migrant population, aiming to reduce the total population of Beijing. The aim is to build the Jing-Jin-Ji city-region to disperse these non-essential functions. Further, Beijing's new town of Tongzhou is designated as an administrative sub-centre which is being built to accommodate the municipal government of Beijing. An even more ambitious plan is to build an entirely new city – Xiong'an in Hebei province.

Emerging economic clusters

While lagging behind in research and development, China has recently promoted 'indigenous innovation' through increasing R&D investment. The spatial concentration of innovation is known as clustering. For example, clustering is a salient feature of biotechnology innovation (Cooke, 2004). Cooke (2004) explained the reasons for the development of 'biotech mega centres' in some cities. This is because 'big pharmas' (multinational pharmaceutical companies) cannot manage the complex networks of biotech innovation by themselves. Instead, the city or city-region plays such a role by creating the externalities needed for biotech innovation. The biotech mega centre is a regional innovation system in which biotech companies are situated. In addition to more localised endowments, Zeller (2010) emphasizes the role of production networks and the role of 'big pharmas' in creating complex biotech centres and 'the invasion of large pharmaceutical companies' which create or reinforce the regional knowledge base (p. 2889). A useful example is contracted research organisations (CROs), which perform specific experiments and tasks for big pharmas. Although the effects of policy and key enterprises are important, the understanding of specific development processes is lacking. Initially thinking from the perspective of the regional innovation system (RIS), Zhang (2015) examined the process of building biotech in Shanghai. Although Shanghai is not a major biotech centre in the world, the clustering of biotech firms and pharmaceutical companies is apparent in Shanghai, especially in Zhangjiang High-Tech Park. The phenomenon might be explained by agglomeration and spatial proximity (Porter, 2000) or by a regional innovation system which considers a larger territorial environment in which innovations are situated (Cooke, de Laurentis, Toedtling, & Tripp, 2007; Cooke & Morgan, 1998). Other economic geographical explanations look at the interaction between industries, universities and governments as a triple helix model (Etzkowitz & Leydesdorff, 2000) or at relatedness and diversity, in particular 'related varieties' (Boschma & Frenken, 2006). Now, the understanding of urban development in China can provide useful insights. To rethink the city and innovation, the clustering of biotech in Shanghai and particularly in ZJHP needs to be examined more broadly in the process of urban development dynamics. We need to think of the city as an assemblage to collate various forces, some of which might not be directly related to R&D itself (Zhang & Wu, 2019). In other words, innovation needs to be situated in an overall urban development process. Biotech clusters in Shanghai are related to the creation of ZJHP, as are agencies of the central government, the Shanghai municipal government (in its policy of 'Focusing on Zhangjiang'), Zhangjiang Development Corporation and also the model of land financing originated in Pudong New District, containing four giant 'functional

development corporations'. Zhangjiang is one of these four development corporations in Pudong.

Shanghai's role as China's gateway and economic capital is obviously relevant. The multinationals' strategy to gain Chinese market access and the development of R&D centres and related CROs are important considerations. Seen from emerging cities, the development of economic clusters is part and parcel of the city as 'an arena where all these actors are assembled to play their roles in biotech innovation' (Zhang and Wu 2019, p. 154). Now, Shanghai is being urged by the central government to become a new science and innovation centre for China. Zhangjiang Science City has been created on the basis of ZJHP. Earlier studies emphasize the city as providing 'innovation milieus' – looking at the aspects of, for example, local buzz (Bathelt, Malmberg, & Maskell, 2004) or institutional features (as described by RIS). Understanding the city as an arena for innovation actors means other factors that might not be regarded as contributing to an innovation process may actually have critical effects. For example, entrepreneurial governance and land development are two factors related to the development of innovation capacity in Zhangjiang. The Zhangjiang High-tech Park Development Corporation is one of the listed companies in the Shanghai stock market. It plays a role in creating investment funds to support start-ups and developing experimental platforms and incubators for biotech firms. Through its role as the 'primary developer' which receives land resources from the government and uses land banking to capture land values in Zhangjiang, it is also involved as a shareholder in some promising biotech firms. For example, the MicroPort Medical Co. received support from the development corporation fund. After the company was listed in the Hong Kong Stock Exchange, the corporation gained the increased value of its holding in the company. The corporation operates a 'land and share swap agreement' to support high-tech firms, which treats the land from the government as a share in the company. Property sales are also an important source of revenue for the corporation. Zhangjiang has gradually seen a change from a high-tech park to a suburban new town with mixed functions. Through a recent initiative, Shanghai is planning Zhangjiang Science City. According to Charles (2015), the development of science cities in the world has experienced three waves: the first is a cluster of science activities in a campus-based environment. The second stage is the science park with commercialization. The third stage is the combination of science activities and urban activities, using science-led development inside the city. Zhangjiang has been developing since 1992 and has become part of the new urban areas in Pudong. Now, the concept of the science city is envisioned as integrating itself better into the rest of Shanghai. The master plan of Zhangjiang Science City was approved by the central government in 2017, and its area has been expanded from 25 square kilometres of high-tech park to 94 square kilometres of new areas in Pudong. One key driver is the development of large scientific facilities funded by the central government. The plan of the science city is to convert Zhangjiang from an employment centre to a comprehensive city in itself. Only about 10% of employees currently live in Zhangjiang. To accommodate future science workers, the Zhangjiang Group operates 'talent apartments' and aims to develop more residential areas in the science city. It aims to reach a total population of 700,000 with employment for 880,000. The core Zhangjiang will be one of the municipal sub-centres. It is also hoped that other developers will join in property development. The development of Zhanjiang Science City illustrates the evolution from an economic cluster to an emerging city.

Emerging cities

Driven by rapid industrialization, China has seen the development of new cities and new towns, which has created a complex pattern of mixed urban and rural land uses. This pattern of mosaic land uses developed through foreign investment and globalization has been seen across Southeast Asia. McGee (1991) coined a term – *desakota* – from Indonesian to describe the mixture of rural villages and industrial areas. In Southern China, export-oriented rural industrialization has created a novel form of the built environment. A new type of building, known as 'three in one', combines workshop, warehouse and residential uses in the same building. This is in response to the need to accommodate migrant workers in workshops operated by families. The mixture of industrial and residential uses creates environmental and public health problems. Although individual workshops have been developed, public services at the village and town levels are still lacking and insufficient. Because of the lack of suitable accommodation for workers, many bigger factories have to build their own dormitories, creating a new urban landscape of dormitories in former rural areas. Similarly, in peri-urban areas, villages have evolved into enclaves of rental housing to accommodate rural migrants. Farmers extended and even built houses in order to rent them out. Despite different appearances, these self-built environments lack public services funded by the government. Thus, service delivery in these places is not a function of the municipal government but rather is achieved by village collectives from rental income (Xue & Wu, 2015). The emergence of manufacturing industries in rural China has led to urbanization and the development of auxiliary residential uses. But an urban institution has not yet been formed. This emergent built environment shows a great degree of informality. The rental market does not guarantee security of tenure and often there is no formal rental contract (Wu, 2016b). In part this is because migrant workers are mobile. But more fundamentally, this is due to a housing policy which stresses homeownership and the development of so-called 'commodity housing'. Control over self-built activities in the cities such as Shanghai has led to internal subdivisions into smaller spaces rather than to renovation and upgrading. Informal rental housing in villages faces great uncertainty.

In contrast to informal development, mainstream residential development in China is in planned estates of commodity housing, which resemble 'gated communities' or master-planned estates. These are built to suit the rising aspirations of the new middle class for privacy and a new lifestyle. But the main driver for these emerging landscapes is the Chinese land development model, which relies heavily on real estate development to generate land revenue for local public finance. The development is thus a strategy under entrepreneurial urban governance, often associated with development zones and new towns. The new town is a more advanced form of development zone. Instead of relying only on industrial development, new towns are mixed developments and are driven by the forces of both market and state. They are often associated with the strategic objectives of municipal government, in which real estate development has been introduced as an instrument to generate funding for local public finance. In practice, coordination between industrial and residential development is often problematic, leading to the problem of so-called 'separation between industrial and urban uses'.

These new towns are emerging not just owing to economic agglomeration but also as a result of specific development strategies and institutions. They represent a breakthrough

from earlier stages of rural industrialization. Under the strategy of 'one city, nine towns' in Shanghai, Lingang new town has been developed near the deep-water port of Shanghai. The new town was supposed to support the development of heavy equipment manufacturing industries, logistics and activities related to the deep-water port. The entire area of Lingang covers a vast 320 square kilometres, a large proportion of which was reclaimed from the sea. The design of a German-based firm, GMP, was adopted as a master plan which was allegedly inspired by the Garden City concept. Accessibility is still a major constraint, despite a transit line (No. 11) linking to central Shanghai. Within the new town area, the heavy equipment manufacturing zone and the new town are separated by a long distance. It takes 30 to 40 minutes to travel from the new town to the industrial area by car. However, the majority of industrial workers in the development zone do not travel by private automobile. They are rural migrants who have to either rely on shuttle buses or rent informally in nearby areas because they cannot travel far. Heavy manufacturing industries are capital intensive and have not led to the level of population growth expected in the new town. It is difficult for the new town to attract residents from central Shanghai. The population growth of the new town is slower than the target. On the other hand, the heavy industrial area has been developed as planned. It is difficult for these factories to find accommodation for their workers who have to go to nearby rural areas to rent. Some factories have even tried to convert and renovate existing buildings for workers' accommodation. For example, a furniture market, originally developed by rural villages, near an industrial area has been converted into staff living quarters. Clearly, there is a demand for low cost housing near industrial areas. But the way of building the city depends upon specific local conditions and involves complex institutional constraints. In this case, it is related to several contexts: long-lasting urban–rural dualism, the entrepreneurial state which planned an industrial area for expected international industrial relocation (for modern manufacturing), a master plan that imported the idea of the 'garden city', and an institutional arrangement that separates industrial and residential developments. While the industrial area is developed by the municipal corporation – the Lingang Economic Development Group – the new town is built by the Harbour-City Development Corporation owned by the district government. All these governance arrangements affect new town developments.

Chinese new town development shows how cities are built through different drivers. Export-oriented rural industrialization has led to a spontaneous and rudimentary form of cities without much public infrastructure. They are literally a 'regime of dormitory'. But there are also more strategically planned new towns. Agglomeration plays a role as seen in the inflow of migrant workers who are not able to find formal accommodation and have to rent in nearby 'urban villages'. As the name suggests, these forms of 'cities' are partially urban and partially rural. They are informal rental markets connecting with formal industries, but their tenants are not served by formal urban institutions. Finally, strategic new town development relies on state planning intervention and institutional innovation. Their governance adopts a model of 'state entrepreneurialism' (Wu, 2018; Wu & Phelps, 2011). New towns are governed by the 'development and management committee' and developed by state-owned development corporations.

Conclusions

China provides a useful perspective to understand the emergence of cities. Chinese cities do not represent a singular model of emerging urbanism. Rather, they contain some constellated elements to understand the multiple forces that lead to the creation of an urban living environment and governance. Emerging cities in China reveal that a new world-scale development process interacts with local institutions and structures, during which new properties and features are created. Therefore, they are emerging in this sense because the development is not fully planned but rather contingent upon agencies and histories. Emergence is thus a complex phenomenon. Chinese cities see the driving force of globalization but local institutions (e.g. household registration – *hukou* – and state land monopoly) are indispensable factors. For example, global R&D chooses Shanghai because of its gateway status, strong economic base, and concentration of science and education resources. The location of biotech firms in Shanghai is due to the development of economic spaces such as Zhangjiang High-tech Park. Its development has been driven by many factors: the central government policy to build an innovation nation, the entrepreneurial local government to build spaces for biotech and IC industries, and the opportunity for market access and contract research for multinational pharmaceutical companies.

The development of new cities has witnessed contrasting approaches applied simultaneously. For example, the state retreated from housing provision and thus left rural migrants entirely reliant on the private rental market. On the other hand, the state controls the land and supports strategic industrial development in places such as Lingang new town of Shanghai and Yizhuang new town of Beijing. Aggressive land acquisition and the absence of housing provision show the seemingly contradictory nature of state entrepreneurialism (Wu 2018).

The China perspective shows the hybrid nature of urbanization led by the market mechanism and the state, which has resulted in different local configurations in different economic sectors and different spaces. Emerging cities require a more holistic approach to understand the dynamics of urban development and the need to accept different possibilities.

Agglomeration effects undeniably exist in the process of urbanization, turning Chinese cities into sites for global production. But the city is being created, remade, shaped and inhabited by multiple actors, whose primary motivation may not be related to agglomeration. In a sense, the city has been rediscovered in the post-reform era because it entertains various possibilities and needs. It is thus important to pay more attention to the process of urbanization rather than resorting to the general notion of agglomeration, as this can help to generate a more nuanced understanding of its outcomes. China is quite specific, as elsewhere, in terms of institutional arrangements related to urbanization and political economic changes. But as shown in this chapter, emerging cities cannot be simply attributed to the state or the market. Although new towns are master-planned and policies play a role in their development, they are not a product of government policies. Their development has been also achieved through market instruments such as development corporations. Their emergence involves both complex market operations and governance. In this regard, Chinese cases can offer a perspective to view these complex relations in contemporary urban changes.

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