

The Emergence and Extinction of a City Dividing Line

Study on Urban Morphology Along the “Secondary Borderline” in Shenzhen, China

by Xia Liu
Tongji University

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Abstract: This paper studies the evolution of urban morphology along the Shenzhen Secondary Borderline from 1980 to 2018. In 1983, an administrative line, commonly known as the “Secondary Borderline”, was set up on the boundary of the Shenzhen Special Economic Zone (SZSEZ) which was established in 1980. The planned economic system is implemented outside the border, while the market economy system is implemented inside the Secondary Borderline in SZSEZ, where outsiders are required to apply for a “Special Zone Pass” before getting in. With the establishment of the market economy system throughout Shenzhen and China, the Secondary Borderline has become an obstacle to the city’s development. On January 2018, the State Council finally agreed to abolish the 36-year-old borderline.

This paper summarizes the history of the Secondary Borderline from its appearance to being abolished and describes the conflicts brought about by the implementation of two different economic systems within and outside the line. Taking Tongleguan and Bujiguan Checkpoint as examples, based on historical research, the changes of urban fabrics on both sides of the border are graphically analyzed, and the impact of urban structure changes on the urban development of Shenzhen is analyzed.

The article concludes that the evolution of urban morphology along the Secondary Borderline are essentially forced by the transformation and integration of the economic models on both sides, which has certain reference significance for the formulation of development policies in other similar divided cities in the world.

1. The Emergence, Development and Extinction of the Secondary Borderline

The Secondary Borderline of Shenzhen, established in 1983, is a regional border management line established by the state. It refers to the isolation network and checkpoint between the Shenzhen Special Economic Zone (SZSEZ) and Baoan and Longgang districts of Shenzhen. It is a boundary between special economic zone and non-special zones within the territory of the country. The Secondary Borderline is relative to the 27.5 kilometre long frontline between Shenzhen and Hong Kong. Before 1997, the British and Hong Kong authorities ruled Hong Kong, and there were many incidents of fleeing and smuggling from Shenzhen to Hong Kong. Therefore, one of the most important aim of the Second Borderline is to reduce the pressure on the front line and ensure security of Hong Kong.

This regional border management line, starts from Meisha Beizai Cape in Yantian District of Shenzhen in the east and ends in Nantou Anle of Bao'an District in the west, with total length of 84.6 kilometers. A 2.8-metre-high wire mesh was also erected along the line. The line includes nine checkpoints, 163 duty posts and 23 tillage openings, covering an area of about 430,000 square meters. The northern side of the Second Borderline is called “Guanwai”, which means out of the borderline. The southern side is called “Guannei”, which means inside the borderline. And the southern part of the Special Economic Zone is Hong Kong.

Since 1985, people traveling from the mainland to Shenzhen have to show the “Special Zone Pass of the People’s Republic of China” and the Resident Identity Card. Institutionally, the planned economy system was implemented outside the Second Borderline on the north side, while the market economy system was implemented in the SZSEZ on the south side.

The Second Borderline is an artificial boundary established in the process of special political and economic development. During the development of SZSEZ, the land policy, household registration system, price level, industry type, environmental resources, municipal services and urbanization level inside and outside the Second Borderline are different. These differences have resulted in the difference of social and economic development level, citizen identity and social psychology inside and outside the borderline, and also caused the separation of urban structure and the fracture of urban fabric fracture.

With the return of Hong Kong in 1997, the SZSEZ began to implement integration reform both inside and outside the borderline. The roles of Hong Kong, Shenzhen and the Mainland are also changing. The need to establish borders in the special zone region is gradually losing. As early as 1998, at the “Two Sessions” in Shenzhen, some delegates and members proposed to revoke the “Second Borderline”. After that, calls for the Second Borderline to be abolished continued. By 2003, Shenzhen had abolished the “Special Zone Pass” and mainland residents could enter the customs only by holding identity cards. In 2010, the State Council approved the expansion of the SZSEZ to the whole city, and Baoan and Longgang District was integrated into the Special Economic Zone. The Second Borderline exists nominally but dies actually. In September 2013, the gates and greenhouses at Meilingguan checkpoint began to be demolished. In June 2015, Nantou Checkpoint and Buji Checkpoint were dismantled, and facilities at other crossings were dismantled one after another. By 1st July, 2015, the demolition of the Secondary Borderline was basically completed. Tongleguan Checkpoint will be reserved as a museum among the 16 checkpoints on land.

The abolition of the Secondary Borderline is not just simply demolition. Over the past 30 years, the unbalanced development inside and outside the SZSEZ and the isolation and pro-



Figure 1. Map of the Secondary Borderline.

tection function of the Second Borderline itself have made the urban morphology and fabric inside and outside of the borderline cracked.

Even if the checkpoints are dismantled, the checkpoint areas remain the main traffic congestion points. The social and psychological gap caused by the unbalanced development inside and outside the borderline can not be solved in a short period of time.

On the other hand, the Second Borderline witnesses the unique historical process of Shenzhen's development. It is the memory of the city. In addition to its historical value, the Secondary Borderline also retains the unique hilly coastal landform and farming landscape of South China, which has important natural value. From the perspective of urban morphology, the urban fabric of this area along the borderline has also undergone special changes due to the influence of the line. The Secondary Borderline is not only a geometric line, but also a belt-shaped urban area.

2. Divided Cities

2.1. Different Economic Systems inside and outside the Secondary Borderline

In the late 1970s, under the long-term planned economy system, the growth rate of productivity in China was extremely low. The combination of the long-term low-speed growth of social wealth creation ability and the distribution pattern of equalitarianism has formed the social reality of widespread poverty. China has embarked on the road of reform and opening up through the establishment of special economic zones. The special economic zone of China is the product of the change of economic system from planned economy system to market economy system. Its basic function is to make a preliminary experiment for the transformation of the whole economic system of the whole country. The transformation of the two systems needs an intermediate buffer zone. SZESZ is the "buffer zone" connecting the two economic systems.

SZESZ was established in 1980. The market economy system shall be implemented inside SZE-SZ and the original planned economy system shall be implemented outside the special zone. The

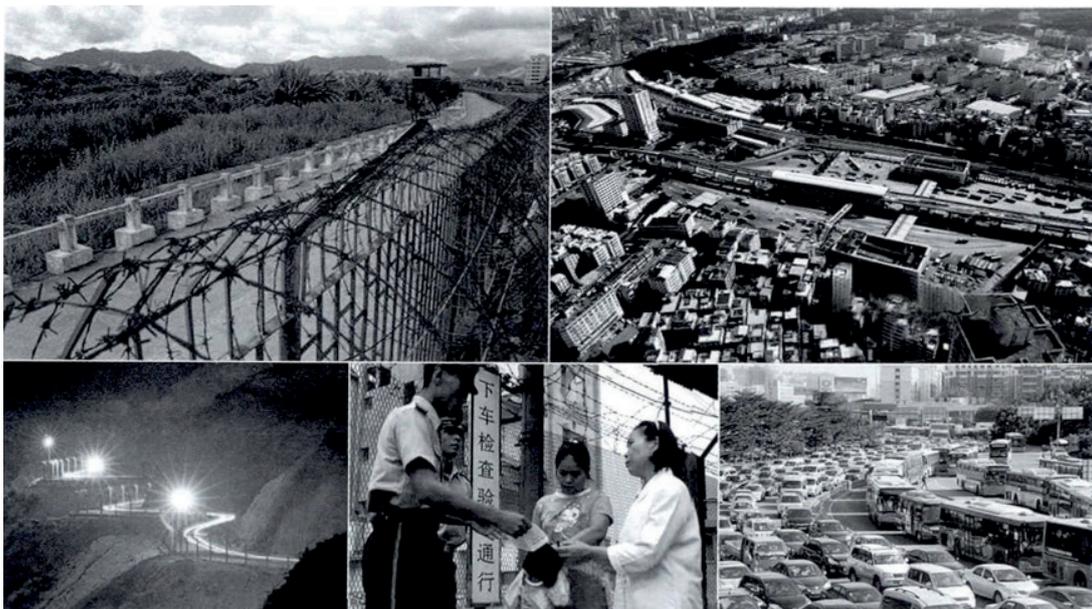


Figure 2. Historical photos of the Secondary Borderline.

establishment of special economic zones and the entry of foreign capital, especially Hong Kong's industrial capital, opened the prelude to the rapid development of Shenzhen. At the same time, the industrial structure and economic structure of Shenzhen have begun to transform.

2.2. The Impact of the Secondary Borderline on Shenzhen City

To some extent, the Second Borderline has "planned" Shenzhen into two cities. The Secondary Borderline has become an irrevocable pre-constraint in Shenzhen's urban planning.

Firstly, the Second Borderline affects road and public transport planning. The second Borderline checkpoint inevitably becomes a traffic bottleneck because of the huge traffic volume. The Secondary Borderline, as a long-term checkpoint for people and vehicles, has gradually evolved into a hub for urban transport transfer. Many checkpoints have become bus stops outside the SZSEZ to enter it. The gateway also has the function of frontier defense. The urban traffic congestion near the checkpoint is becoming worse. More importantly, for the planning and design of Shenzhen's group development, the Secondary Borderline has become an insurmountable obstacle for the unified planning of urban infrastructure, industrial layout and environmental protection. The checkpoint has become a shackle restricting the intensive integration of Shenzhen's space resources, economic and social development.

The traffic problem then affects the functional layout of the city. For a long time, most of Shenzhen's tertiary industry, headquarters economy and high-end industries have been concentrated inside the borderline. While the outside area of the borderline focuses on low-end industries such as processing trade and village-run industrial parks. Because of the poor surrounding environment and inadequate living facilities, high-level talents are reluctant to work and live outside the borderline. This further restricts the upgrading and transformation outside the original economic special zone.

As time goes on, the imbalance of development inside and outside the former Special Zone becomes more and more obvious. There are huge gap on both sides of the borderline on municipal appearance, people's livelihood, public services, business support, industrial structure and etc. Shenzhen is a small city, the existence of such a gap is unreasonable. The area outside the former SZSEZ is 1556 square kilometers, accounting for 80% of the total area of Shenzhen. During the period of rapid development of Shenzhen, the land and resources outside the former Special Zone were not rationally utilized, which also became an urgent problem to be solved in the development of Shenzhen. The unequal development also brings about the unequal livelihood and welfare of the people inside and outside the Secondary Borderline. It also affects the people's entrustment to the local government.

3. Urban Morphology along the Secondary Borderline

With the development of the city and the change of the urban form, the border management policy of the Secondary Borderline has become more and more open. In this paper, Tongleguan Checkpoint, Bujiguan Checkpoint and their surrounding areas are selected as the key areas of urban morphology research.

3.1. Tongleguan Checkpoint

Tongleguan Checkpoint is a large gateway at the west beginning of the Second Borderline. It is the gateway for Guangzhou-Shenzhen Expressway to enter the Special Economic Zone and the main access to Shenzhen Bao'an International Airport. The northeast side of Tongleguan is Shenzhen Science and Technology Park, the northwest side is Bao'an Middle School, and the southwest side is a famous urban village, Tongle Village. Around Tongleguan Checkpoint, abolished gates, urban villages, old factories and a variety of lively urban life coexist. Tongleguan and its surrounding areas typically represent the fragment urban morphology and collage urban texture around the Secondary Borderline.

In June 2015, Tongleguan Checkpoint demolition project started at the same time as Nantouguan Checkpoint. The inspection building at Tongleguan Checkpoint has been retained as preservation of the historical memory of the Secondary Borderline.

According to the map, it can be observed that the urban fabric around Tongleguan Checkpoint is fractured and lacks of the integrity of urban planning. Traffic infrastructure nodes are confused. Some non-planned patches grow by themselves, i.e. the urban villages. Several plots near the checkpoint are self-contained and independent of each other, and lacking linkage.

Tongleguan is run through by the highest grade road in Shenzhen, G4 Expressway. This highway has brought huge traffic flow to Shenzhen and Tongleguan Checkpoint. But the expressway itself has split the urban texture of the surrounding areas of Tongleguan. The west side of the expressway has abundant formats, including schools, residential areas, public space, factories and so on. The eastern side of the industry is relatively monotonous, mainly office and factory. In the hierarchical analysis map, the author selected six plots around Tongleguan Checkpoint for graphic analysis. From the illustration, it can be seen that the most densely populated plots 3, 5 and 6 are mainly residential functional plots. Among them, plot 6 contains urban village, and its texture is growing towards the Secondary Borderline. This is the trace left by the surge in the demand for residential space inside the borderline since its establishment.

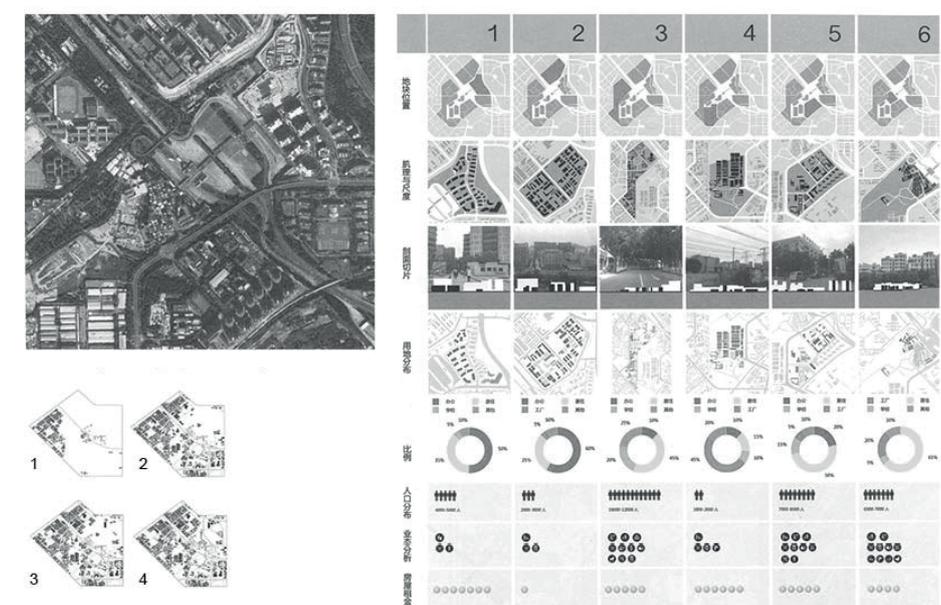


Figure 3. Morphology Analysis of Tongleguan Checkpoint (3.1 Map of Tongleguan Checkpoint; 3.2 Plots research of Tongleguan Checkpoint; 3.3 Urban fabric development of Tongleguan Checkpoint).

From the development of the urban fabric of Tongleguan, we can find out that the development trend of Tongleguan's surrounding areas is from point to area, and the system of architecture and road is gradually formed during its development. After the continuous construction land formed, the urban texture began to expand to some gaps left over between the built areas, which will make the urban fabric of the existing city gradually complete. Because of the existence of highway and the Second Borderline, the development process of urban texture near the junction is more like bottom-up, conditional spontaneous growth.

The current situation of Tongleguan Checkpoint is that the function of surrounding land is complex. There are more reserve land for development, which has good natural and ecological conditions. At the same time, there are also municipal supporting centralized land around Tongleguan Checkpoint, which has great potential for development.

3.2 Bujiguan Checkpoint

Bujiguan Checkpoint is located in the middle of the Second Borderline. It is also situated at the junction of Longgang Avenue and Buji Road. It is an important transportation hub connecting Longgang District and Luohu District. Near Bujiguan Checkpoint, there are Longgang Line Metro and Bus Connection Station. It is also the place where Guangzhou-Shenzhen Railway and High-speed Railway pass. So there are a lot of people and traffic passing through every day. The traffic congestion issue is a very serious problem in the morning and evening rush hour. Near Bujiguan, there are a large number of urban villages, which concentrate millions of migrants and migrant workers. This is a typical area of non-planned development along the Second Borderline in Shenzhen. Its spontaneous and original living conditions and unusual high-density settlement have special research value in urbanology and sociology.

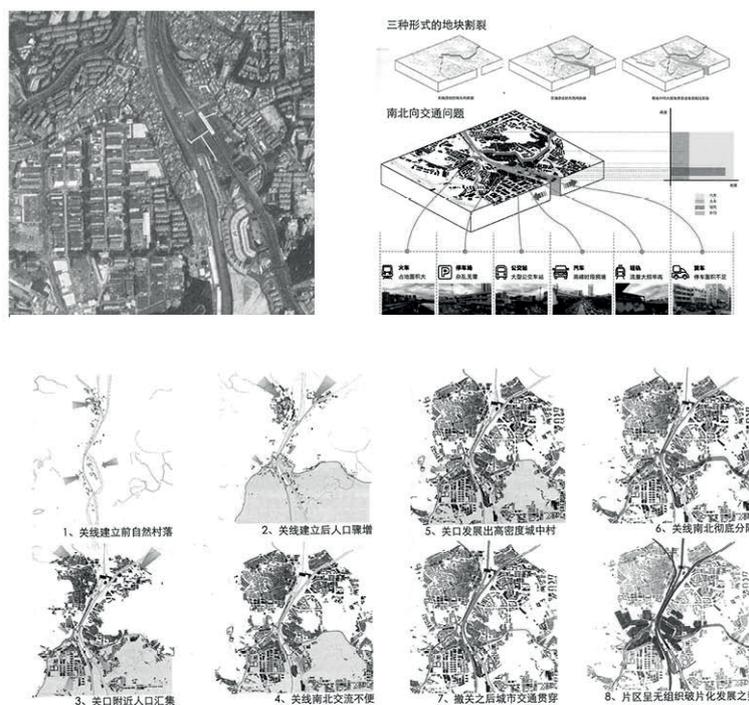


Figure 4. Morphology Analysis of Bujiguan Checkpoint (4.1 Map of Bujiguan Checkpoint; 4.2 Morphology research of Bujiguan Checkpoint; 4.3 Urban fabric development of Bujiguan Checkpoint).

On the map, similar to Tongle Guan, the urban texture on both sides of Buji Guan also shows the form of fracture zone. The urban morphology around Bujiguan is even more complex. There are four directions of fragmentation around Bujiguan Checkpoint. The comprehensive transportation lines split Bujiguan Checkpoint from east to west, and the Secondary Borderline itself split the plots from north to south. This situation leads to the weak accessibility of public facilities in different plots around the Secondary Borderline.

The functions of land around Bujiguan are mixed, and the urban storage land is concentrated. The quality of ecological environment around Bujiguan is not high, and the environment of the area is disorderly. The production mode of Buji area is mainly self-sufficient production mode of the bottom business along the street, which can meet the needs of daily life. But the communication between urban village and high-tech industry is weak. Business supporting services around Bujiguan are inadequate to meet the demand for use. Urban villages have high-density living space and lack of public space. Moreover, the narrow lane and turning radius in the urban villages threaten the safety of pedestrians and easily cause congestion.

The author restores the historical development process of the Bujiguan area. Before the establishment of the checkpoint, natural villages were distributed freely around the gateway. After the establishment, the population increased and gradually converged near the checkpoint. The communication between the north and the South has gradually become less smooth. More high-density urban villages developed near the checkpoint. With the development of the SZ-SEZ, the north and south of the borderline are completely separated. After the closure of the Bujiguan Checkpoint, the urban traffic was re-penetrated. The urban fabric around the checkpoint remained unorganized fragmentation.

There are still many opportunities for the development of area around Bujiguan Checkpoint. Located at Bujiguan, a transportation hub, the traffic is actually convenient. The village in the city has great potential to absorb people and has received the attention of the government. There are still a lot of storage land near the checkpoint for reconstruction.

3.3. Research Summary Based on Urban Morphology

According to the above analysis of Tongleguan and Bujiguan Checkpoint, the existence of the Secondary Borderline has indeed had a tremendous impact on the urban development of Shenzhen. The author summarizes the impact into the following two points.

First, the Secondary Borderline made the fractured urban texture. On both sides of the Secondary Borderline, the area has experienced high-density development and has already formed dense urban texture. As a special protective land, the area around the Secondary Borderline is not exploited regularly in a certain range. Therefore, in the linear area of 84.6 kilometers, the urban fabric along the borderline presents a relatively loose and disordered form. Urban villages, transportation hubs, industrial buildings and new residential buildings constitute different types of plots, which coexist and squeeze each other. The urban fabric has caused the present situation of fracture. In the future development of Shenzhen city, we also need to pay attention to how to repair the existing urban texture fracture and bridge the crack.

Second, the Secondary Borderline made the self-organizing growth of non-planned patches. The urban village is the most characteristic urban social plot of Shenzhen, which is a migrant city developed in a short period of time. The density, organization and urban morphology formed by the self-growth of urban villages are the most attractive features of Asian cities. It is also the focus of contemporary architecture and urban studies.

Because the administrative divisions of the SZSEZ do not coincide with the Secondary Bor-

derline itself, there are some management vacuum zones along the borderline. These vacuum zones provide the possibility for the growth and spread of spontaneous settlements of migrants. The Secondary Borderline is also a typical specimen for the study of urban self-organizing growth. The development of urban villages is also a problem that should be paid attention to in urban development in the future.

4. Conclusion

The Secondary Borderline is the boundary left over from the special stage of political and economic development. It is the birthmark of Shenzhen's urban development. Almost everyone in Shenzhen has personal memories of the Secondary Borderline. The renewal of the city is not to erase the memory, but to find a breakthrough point to retain these unique city memories.

The change of urban form along the Secondary Borderline is essentially due to the integration and transformation of economic models on both sides. Therefore, the urban fabric of the Secondary Borderline is basically divided. But there are many spontaneous growth plots around the borderline. According to the author's investigation, the removal of the Secondary Borderline has also brought new vitality to the development of Shenzhen.

First of all, the historical remains of the Secondary Borderline has increased the opportunities for residents to get close to nature and promoted the construction of open urban space. The spreading development of Shenzhen makes the urban fabric present a linear form mixed with hilly terrain. The choice of the Secondary Borderline is more or less a combination of the use of natural terrain, such as coasts, forests and waters. The area along the Secondary Borderline presents typical natural landform characteristics of coastal hills in South China. In recent years, Shenzhen citizens have spontaneously organized walking fitness leisure activities along the Secondary Borderline. Therefore, we can use the opportunity of removing and reforming the Secondary Borderline to repair the ecological environment and construct a strip of urban public space associated with the natural system.

Secondly, after the demolition of the Secondary Borderline, citizens can make use of existing infrastructure systems and nodes of the checkpoints. All the checkpoints along the Secondary Borderline are bound to be connected with the traffic routes. Almost all the large-scale checkpoints have concentrated many traffic lines and become the convergence point of infrastructure. After the clearance of the borderline, Shenzhen can take this opportunity to sort out and reform the original traffic settings, which caused stagnation, and to rationally replace the functions. Bujiguan Checkpoint has spontaneously become a regional transfer point connecting Futian, Luohu and Longgang Districts. The spontaneous turning around of Bujiguan Checkpoint provides practical enlightenment for the renovation of abandoned checkpoints.

The revocation of the Secondary Borderline and the reuse of the checkpoints also provides enlightenment for the development of other similar divided cities in the world.

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