

Endless City, Endless Congestion

Interactions Between Urban Form and Mobility in Beijing

By Matthew Alexander da Silva

Presented to the Faculty of the
Growth and Structure of Cities Department of
Bryn Mawr College
in Partial Fulfillment of the
Requirements for the Degree of

Bachelor of Arts

Haverford College

December 2013

Dedication

For my two grandfathers, Marvin Rothman and Marcus Armando da Silva, who inspired me, in life and death respectively, to always do what is right and good in this world.

Acknowledgements

This thesis would not have come into fruition without the unwavering support of the following individuals and groups:

Gary McDonogh, my primary advisor and academic mentor through my time at Haverford College

Jun Zhang, my secondary advisor and an authority on all things China

Jeffrey Cohen, my major advisor

David Moser, For sparking a love of all things China

Mom, Dad, Brian for always giving me familial support

Cities seniors 2013-2014

Cities majors 2011-2015

The inhabitants of Lloyd 92

Benjamin Wohl, Max Reinhart, Esther Chiang, Li Fang, Li Peng, Zhao Yiyang, Pan Yiqi, Wang Yu and everyone else I interviewed or consulted for this project

During my time at Haverford and Bryn Mawr Colleges as well as over the course of this semester, I am indebted to you the whole community for providing me with a supportive environment to pursue all of my academic, social, and professional pursuits

Abstract

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Matthew Alexander da Silva, B.A.

Haverford College, 2014

Advisor: Gary McDonogh

This thesis traces the developmental roots of Beijing's current urban form as a sprawling, decentralized metropolis, and analyzes the intersections of this development with transportation and personal mobility in the city. I track Beijing's urban form through the Republic of China era, through the Maoist regime, and into the modern era of reform and opening up as different stakeholders with different priorities HAVE left their mark on the city, marginalizing the economic importance of the historic core and creating a network of decentralized, sectoralized expansion over a wide geographic footprint. I show that this process has led to great challenges in moving people through the contemporary city, creating a transportation system prone to long travel times, congestion, and class-based hierarchy of modal dependence on parallel systems of inadequate connectivity and capacity: a highway system for the wealthy and a subway system for the working classes.

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Introduction

According to famous architect Cedric Price, “it is interaction, not place, that is the essence of the city and city life.¹” A city is a dynamic place, functioning and thriving through interactions and exchange. Urban dynamism, the harbinger of a successfully functioning metropolis, depends on the mobility of its citizens. As a result, the facilitators of these interactions are at the heart of urban function. Ignored by Price, however, is the reality that place itself dictates how mobility is enabled within a city, as the confines of urban form, alongside policy and economy can work to push a city towards certain modal choices in practical transportation. Additionally, said modal choices can also have consequences of their own and similarly continue to impact urban form.

Beijing, China, certainly embodies this urban dynamism and vitality. With 20 million legal residents and countless more illegal migrants from the countryside, it is the capital and largest city of the world’s second largest economy. However, it lacks a centerpiece to bring its collective vitality together in one space. Its vast built-up landscape is a massive expanse of medium-density sprawl with no true heart aside from a historic center that has been rendered a mere tourist attraction. Political and economic centers have been scattered throughout the city. Beijing’s path to becoming the city it is was a relatively rapid and recent phenomenon. After only existing as a central core around Imperial palaces for hundreds of years, Beijing over the course of the past one-hundred years has rapidly expanded outwards from its historic center, but at the expense of the primacy of said center itself, marginalizing its economic and

¹ Jensen 9

political importance. With this centerless metropolis came an urban landscape conducive to colonization by the automobile and erosion of pedestrian-scale street life.

This thesis is an exercise in identifying how urban development in Beijing shaped its transportation network, examining the way in which the choices are initiated and implemented, and making sense of their effects on the city. Looking at a Beijing over the course of the Twentieth Century, important shifts in political power, design philosophy, and economic fortunes, can be observed as shaping the very form of the city itself and the transportation that grew around it. Identifying these changes and investigating their mechanics is a key to understanding where Beijing came from, and how it might continue to change in the future.

Strategic Approach

This paper will take a chronological approach to exploring Beijing's urban development, analyzing three fundamental periods of transition in mobility and urban form in Twentieth Century China and how they contributed to the creation of the modern decentralized, sprawling, congested city. These three periods, are:

- 1) The Republican Era (1912-1949): With the rigid Confucian social structure of Imperial Beijing shattered by revolution and new technology from the West morphing an old society and old city, transportation and mobility became a new front for the class struggles that would come to forefront in the absence of a Confucian hierarchy. The formal social hierarchies once enshrined physically in strict neighborhood demarcation became an issue in the space of the street itself, as trolleys, automobiles and other forms of transportation out of reach to many

citizens infringed upon the pedestrian space of the common Beijinger., This disrupted the lifestyle practiced of the masses in their small, compartmentalized, yet pedestrian-scale city. These spatial tensions were proxies for larger economic tensions that would ultimately boil over into a Civil War that would continue both before and after the Second World War. However, the ultimate legacy of this era was inaction and stagnation. The disorganized, powerless government did little to drastically change the old city, preserving the old, obsolete Imperial structures as they crumbled from neglect.

- 2) Maoist Beijing (1949-1978): Communist ideology and Soviet-inspired thought about the purpose of the city as an engine of production combined with the “traditional” Chinese affinity for compartmentalization in city planning leading to massive expansion of Beijing into outer districts while confining effective communities into the compact, autonomous *danwei* work units. The *danwei* interacted little beyond their boundaries, creating a conglomeration of multiple campuses only loosely connected by a system of boulevards and highways. This diffuse physical plant and its accompanying social structure de-emphasized Beijing as a singular entity in favor of a more local sense of communal life. Transportation within the *danwei* was paramount, and bicycles took over this niche (really? Within *danwei*?, while transportation between *danwei* had little demand, and floundered as longer distance transportation was mainly oriented towards freight and the errands of governmental elites.

- 3) Reform and Opening Up (1978-present) Economic liberalization and relaxation of restrictions on movement signaled the arrival of the automobile and the beginning of rapid large-scale urban growth (and corresponding infrastructural investment) riding on the industrial back of China's transformation into the "economic power." Despite a desire by urban planners to establish a proper Central Business District, developers in the newly liberalized real-estate market built in a dispersed manner on top of the inherited decentralized physical structure, transforming Beijing into a sprawling, congested metropolis that has failed to materialize a true center of economic activity. Freeways and subways were built en masse to connect the modernizing city, but given the large geographical footprint have proven inadequate at reducing congestion. As a result mobility in the city is quite hampered, with long travel times, excessive congestion, and barriers in access for the car-less working class and outward expansion continues.

Through this history, different stakeholders, be they government, business, or individuals, are all adding and subtracting from the same urban scene, and leaving behind urban form that acts as the canvas foundation? Constraints? for future developments. The transitions of an earlier era influence those of later eras, and many decisions made by stakeholders are a continuation of or a reaction to those made earlier.

This study functions in two distinct modes: constructing a history and framing an analysis of that history. The history constructed is that of well-known events viewed through a

less studied lens: that of mobility. As a historical study, methods used to collect data include collating histories done by others as well as primary historical accounts (interviews, writings etc.) to weave a narrative of changes in urban form and their accompanying . Beyond being just a history however, this work is one of analysis and application of a the change being documented, and other methods of data include comparative analysis of altered urban landscapes through the use of maps and photographs and national statistics to contextualize and give meaning to that history.

Theory –is this better described as a conceptual framework?

The Importance of Mobility

A city is a place, but as Price hinted at with his affirmation of the supremacy of interaction in the urban system, the static place on its own is meaningless. It is the access to the place that creates its value and usefulness. Lynch and Hack, as quoted by Jensen summarized this succinctly:

“Access is the prerequisite to using any space. Without the ability to enter or move within it, to receive and transmit information or goods, space is of no value, however vast or rich in resources.”²

According to the Oxford English Dictionary, mobility is “The ability to move or to be moved; capacity for movement or change of place; movableness, portability.”³ It is this second definition, the capacity for movement or change of place, which frames how we understand the concept mobility in the realm of urban studies. It is mobility of the population, this ability to

² Jensen 5

³ Online, need to get infoYes you do...

change place, which determines access to the location, hence urban mobility is a prerequisite for the resources and capital of a city to be exploited to their full potential, as well as creating new economic activity through the new networks of information mobility provides. As such, drastic changes in the mobility of the urban citizens pull cities in new directions, changing relationships between person and person and person and place as well as altering the spatial development trajectory as access shifts between locations. It is these changes that are the transitions in mobility that have the ability to change city life on a fundamental level. A paralyzed population is one that has no action to act within the greater city. An isolated location is similarly cut out from development, growth, and an opportunity to grow vibrant. Access equals opportunity, and mobility equals access, therefore mobility equals opportunity.

Identifying Stakeholders and Agents of Change

Identifying fundamental changes in urban form and mobility is often a convoluted process. Technology and infrastructure are the most tangible catalysts in transitions of mobility. A new road opens up access to a new area, mechanized transport such as a car or bus greatly increases the distance one can travel in a single day, etc. What is often more complicated is who orchestrates the changes that create transition in mobility and how changes are received and acted upon by the public. Ole Jensen's theory of "staging mobility" proposes two broad divisions of outside forces that shape mobility. "Staging from above" consist of planning, design, regulations, institutions, development and other actions that are imposed through the action of bodies of the state or businesses. Jensen describes the staging of mobility from above as the scenography of the production of mobility. These are often coordinated, planned efforts that

are enacted on a large scale that set the stage for interactions to take place. The grand infrastructure plans, and policy incentives are the product of the staging from above, creating the mobile environment in which the urban inhabitants will react. Staging from below consists of the staging by what Jensen calls “consociates in interaction and individual performances of mobile self-presentation.”⁴ By this he means the collective direction of all of the small decisions made on an independent, individual level in reaction to the built environment provided. This framework allows analysis to take into account the fundamental fact that neither policymakers, nor community builders, nor the city’s inhabitants have complete control over how mobile situations play out in reality. The result on the ground is a delicate balancing act of the intentions of place makers and the priorities of those who reside in the formed places. In summation, mobility is staged to the extent that it is prompted by external conditions, and external conditions are the result of decisions made by people, whether they be intentional or unintentional, and whether those decisions come from above or below.⁵ Changes on one end of the staging will reverberate throughout the whole process in a cascade of cause-and-effect.

Center & Periphery

A key idea underpinning this thesis’ argument is the privilege of centrality in the city. City centers are most often manifested in the form of a “downtown”. The term itself, downtown, a nebulous one, is observed by urban anthropologists Gary McDonogh and Marina

⁴ Jensen 7 Jensen intertwines this idea with a metaphor of theatre, with stages and performers, acting within the infrastructural, economical, and political realities imposed from above (the stage), to “perform” movement and mobility, but decisions about how one gets around. But performative acts imply a sense of deliberance and metacognition of political implications that does not truly exist when people decide how they get from point A to point B. As such, I am choosing to downplay this aspect of Jensen.

⁵ “The key behind the Staging Mobilities perspective is thus to capture the fact that mobilities are being staged, as well as the fact that the social interaction taking place must be understood in the light of a ‘staging’ process.” (Jensen 9)

Peterson to “distill the economic, cultural, and political life of the city as a whole⁶” into a single location. Such a point is often a lynchpin for civic identity and economic vitality in the metropolis and a focal point for economic integration. Beijing arguably lacks such a point, both historically and currently, where all of these values intersect in a single location. As such, the term “downtown” will not be used in this thesis. Instead, the various functions of downtowns will be identified individually within Beijing’s urban form. As such, financial and commercial centers will be identified separately from administrative and political centers, which will be identified separately from cultural centers. This thesis argues that the lack of a true downtown or integrated center has created difficult situations of transportation, and the distance between edge and center will be a common theme.

Unexplored Ideas

This paper looks at the physical development of Beijing and analyzes its effects on access, urban growth, and spatial orientation, and as such will indeed intersect with other questions of transportation, mobility and urban life. These other themes are important issues to be kept in mind, but are larger than the scope of this thesis itself. This is a study of a city *in situ*, looking at Beijing in an isolated manner as a closed system. As such, Beijing in its interaction with other cities and within China as a whole, while shaped by transportation and changing mobility, is beyond the scope of this thesis. Likewise, Beijing’s place in the greater human ecosystem is beyond approach in this paper as well; Despite the energy and environmental cost of transportation and the importance of transportation in determining a city’s symbiotic relationship with its surrounding environment, themes of sustainability and the

⁶ McDonogh & Peterson 2

resource drain of movement and transportation are not the domain of this thesis. This will strictly be looking at transportation as a functional system. Transportation will instead be investigated from a purely functional perspective, looking at how places are connected and whether these connections faces issues or not.

Background History: Understanding Imperial Beijing

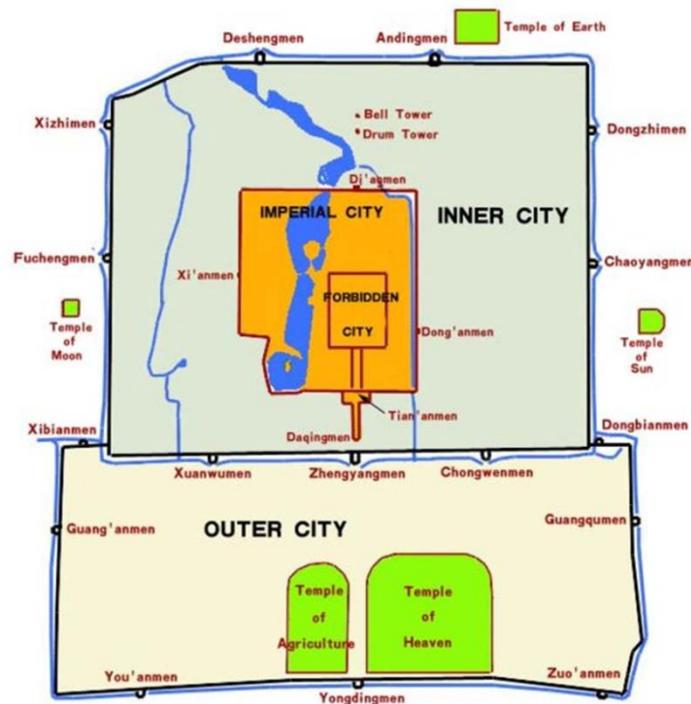


Figure 1: The Walls and Gates of Old Beijing at the time of the late Qing SOURCE: Wikipedia

Understanding the changes that took place in Republican Beijing requires understanding the urban environment that preceded it. The city inherited by the Republican-era government was a 25-square mile quadrangle of walls, gates, and sectors, designed to emphasize and serve the cosmic Confucian order that was enshrined in the religion Imperial hierarchy. Founded and refounded since the Warring States period (425-221 BCE), the city had been a capital more or less continuously since the Yuan (1267), with important elaborations under the Ming and finally the invading Qing dynasty, who divided the Manchu and Chinese city. (Nice to have a bit more

pedigree) Economic classes, ethnic groups, and other segments of the population were separated into their own spaces in a rigid hierarchy⁷. The most fundamental divide was between the Inner City, a square area that was the domain of the emperor and his court after 1267, and the Outer City, an extension to the south of the Inner City, sharing its Southern wall, that housed the commoners and merchants who served the city.

At the center of this spatial hierarchy was the emperor and this is reflected in the layout of the city. As historian Madeleine Yue Dong puts it, "Imperial Beijing was designed to be seen from the perspective of one pair of eyes: that of the Emperor⁸." A north-south axis ran the length of the city, at the center of which was Scenery Hill, a peak from which one could view three layers of walls that served to insulate the emperor in his own sphere. In a nesting effect, the Forbidden City, which housed the palace, was a central enclave separated from the Imperial city by high walls with only four gates. Under the Qing, the Imperial City housed the high officials and aristocrats of the Manchu ruling class. The Imperial City was then surrounded by the walls demarcating the rest of the Inner City. The space between these two walls was inhabited by the Manchu bannermen who guarded the palace and the capital. The walls of the Inner City had nine gates, two on the North, East and West walls, and three on the South side. The Inner City was highly planned, with buildings grouped tightly into compounds based on

⁷ Class in Imperial China was largely demarcated through Confucian philosophy as opposed to accumulation of capital, with the Emperor at the top who ran the country, followed by court officials (*Mandarins*) who carried out the emperor's rulings, then peasants who fed the people, and finally merchants (including all non-agricultural and government workers) at the bottom, who were stigmatized as nonproductive members of the social order who merely traded goods. As such, merchants were "below" court officials in this cosmic order, despite often being wealthier than them.

⁸ Pg. 25. Dong's work *Republican Beijing* is widely considered to be the definitive work on the history of urban development in Beijing during the early 20th Century

purpose, almost mini-fortresses unto themselves, with wide avenues separating the compounds in between.

The Outer City lay to the South of the Inner City as the area where Han Chinese merchants and officials lived, being banned from the Inner City. Despite its peripheral relationship to the Inner City, the Outer City was the commercial heart of the city. Commerce and business was banned from the Inner City for security reasons, and as such all business, entertainment, and other forms of commerce thrived in the area around Zhengyangmen, the main portal into the Inner City from the Outer City⁹. In contrast to the spatial order of the Inner City, the Outer City was home to an organic another word to watch, haphazard streetscape of narrow, curved alleyways (*hutong*) that housed the servant population of the city. The lone exception was Zhengyangmen Avenue, a continuation of the north-south axis of the Inner City out of Zhengyangmen, cutting the Outer City in half.¹⁰

All of these internal walls dividing the population by ethnicity and status had the practical effect of hampering mobility throughout the city and creating very different conceptions of what the city was based on class. While the city elite oriented themselves around the functional grouping of Imperial buildings that dominated the Inner City, these were of no consequence to the average person, who was just as insulated from these central areas as Imperial officials were from the spaces of commoners. The Outer City was likewise merely a playground and a market for those from the Inner City, and not a place to live. To commoners,

⁹To give an idea of the extent of importance to Zhengyangmen as a commercial center, “About $\frac{3}{4}$ of flavorful restaurants, $\frac{7}{10}$ of hotels, more than $\frac{1}{2}$ of theaters, as well as Chinese private banks, art and craft stores, pearl and jade workshops and silk and fur firms were all concentrated in the Outer Qianmen area (Yang 50)” Qianmen is the modern name for Zhengyangmen.

¹⁰ Dong 27

the Forbidden City and other compounds were merely wall, obstacles they were forbidden to enter, and the gates and bridges and markets and temples that made up their everyday lives was their conception of Beijing. City walls were in place to force people to slow down and compartmentalize their lives in such a way so that the only tasks facilitated were that which served the emperor. The systems of alleyways and compounds made thoroughfares rare, making movement within the city, particularly east-west movement, particularly difficult. This immobility was very deliberate. The system of gates existed to slow people down to give reverence to the emperor, not speed up commerce. Additionally, the external city walls very much isolated Beijing from the surrounding countryside, which was completely divorced from the happenings inside the wall. This segmented, divided, immobile, and insular Beijing was the Beijing inherited by the Republican government and the people of the city in 1911, and enhancing mobility quickly became a top priority given the modernizing agenda they had.

Chapter 1: Republican Beijing

The first disruptions to the form and living patterns of the old Imperial city happened under rule by the Republic of China, which was the state established in the wake of the overthrow of the Qing Emperor in 1911 in a revolution rooted in western ideals only? of nationalism and republicanism. After centuries as the capital, Imperial seat, and administrative center for all of China, the city underwent large changes first as the capital of the Nationalist government from 1911, and then as a secondary city grasping for purpose with the move of the capital to Nanjing in 1924. With this dissolution of the city as an Imperial power center came the emergence of an autonomous municipal government running the city. For the first time, the polity making decisions for Beijing was theoretically one interested in serving the needs of people and commerce in the city, not those of the Emperor. With this new local government came a vision from local stakeholders in the newly dominant merchant class to remake Beijing from an ancient city oriented around serving the now dethroned Emperor to a modern capitalist city hoping to grow its commerce and industry. This goal inspired spatial reorganization as envisioned by the new Republican Government. However, the practical reach of the government was limited in this period of relative anarchy. This limited central power alongside the presence of strong influences from Western financiers made this push to transform Beijing a premature one and the city would emerge from Republican reform attempts with largely the same basic structure as it had had for centuries under Imperial rule, but without Imperial institutions to fill this structure with political importance. The transitions in urban form and the new technology introduced during Republican rule reflected a fundamental disconnect between the governing elites and the working classes. The needs and

wants of an underclass of servants and wage-laborers were ignored as the disruption of the traditional pedestrian-scale streetscape by the larger, faster vehicles that only the wealthy could afford failed to have practical use for a population that was still very much wedded to its immediate location by class and lifestyle. The new built environment instead provided a medium for class conflict to occur with spatial conflict on the streetscape playing out. The innovations of the elites were indeed “revolutionary”, but in a completely different way than as intended, and the trains, streetcars, and reorganized slums were antagonized as a menace of the streets and harmer of the working classes. Ultimately, Republican Beijing’s elites attempts to remake the city on the momentum of new options in mobility failed in a civic culture of only serving vested interests and a lack of any meaningful power to change people’s everyday lives, frustrations that would eventually boil over into civil war.

Envisioning a Modernized Beijing

With the newly established municipal government of Beijing there came for the first time a locally-focused administration in the city. This newly empowered local government brought motivation as to bring Beijing along a path of modernization, aiming to transform Beijing into a city that was the capital of a nation among nations that could compete with anywhere else on the globe. With these expanded powers of land use, zoning, and urban planning came a drive from elites in government for a new streetscape, and modern innovations such as automobiles and streetcars that were hallmarks of the rapidly industrialized cities of the West. Nonetheless, despite rhetoric about improving the lives of the people¹¹, the public works projects of Republican Beijing, while politically progressive, was largely a socially

conservative one, serving to improve the lives of the wealthy and doing little for the commoners. Infrastructural improvements were almost always socioeconomically discriminatory, and efforts to improve the lives of the common people were few and far between. This divide would eventually manifest itself in a stratified hierarchy of transportation and mobility that would continue to fan the flames of class conflict in Beijing.

Gates as Commercial Centers

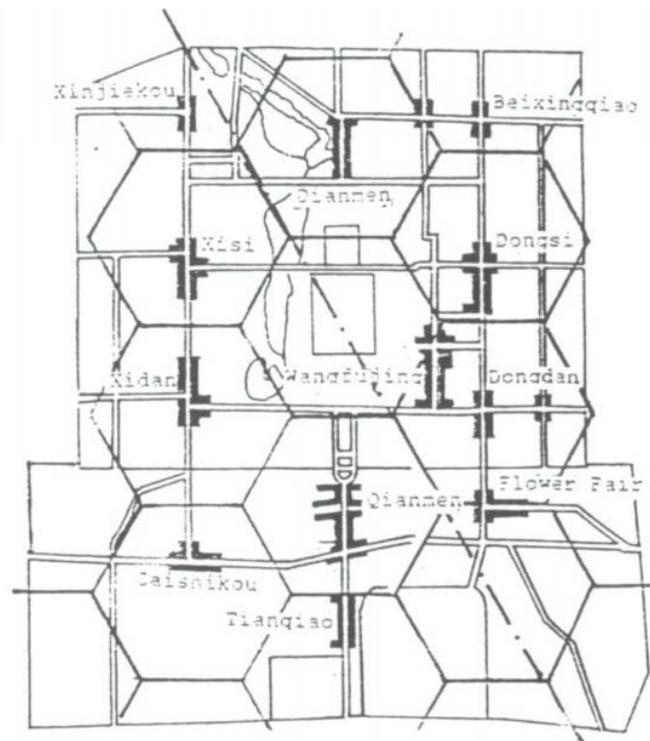


Figure 2: The spatial relationships between the various marketplaces of Republican Beijing SOURCE: Yang Wu-Yang

Reconfiguration of the city gates became a prime incentive of the reformers in city government. The gates, walls, moats and bridges, having long outlived their defensive utility in the era of gunpowder and explosives, were seen as bottlenecks interrupting transportation and communication within the city. Opening up new pathways of mobility through the walls became a priority. In 1915, parts of the city wall were demolished in order to create four new

gates between the Inner City and Outer City. The bricks from these sections of wall were then used to reconstruct the gate of Qianmen¹² in order to increase flows through what is the city's most important gate with stairways, railings, and terraces.¹³ The reconstruction was not without controversy, and the conflict between the New Culture and Old became apparent in some opposition to the project by people who believed the gate would disrupt the *fengshui*¹⁴ of the older gate. Nonetheless, the reconstruction created a center of traffic and connections in Qianmen, and it was able to expand beyond its role as a center of consumptive commerce to a hub of connectivity and transportation as well, with its location near Beijing's railway terminals at the time working to its advantage. Qianmen's monopoly on commerce eroded during this period, as the same improvements that it saw with infrastructure came to other gates and travel to other areas of the wall became easier. The thoroughfares and streets that were once obstructed by the Imperial City were now open, and accessibility across all parts of the Inner city increased.¹⁵ With this new accessibility Dongsi, Xidan, and Wangfujing, all along the wall around the edge of the Inner City, emerged as shopping centers during this period. Wangfujing, which had already started becoming a shopping cluster in the late Qing era due to establishment of Dongan Market by the Emperor in 1903, Beijing Hotel by French investors in 1907, and the American Union Hospital in 1915, rose to the status of the new high shopping street for foreign fashions, outclassing Qianmen, during the 1920s.¹⁶ Despite this newfound porousness in the city walls that created new opportunities in mobility and commerce, the

¹² Qianmen was formerly known as Zhengyangmen, which served as the location of the marketplace during the Qing Dynasty

¹³ Shi 71

¹⁴ *Feng shui* is a form of traditional Chinese cosmology that takes auspicious and inauspicious meanings from the relative and absolute positions of objects within a space, including buildings.

¹⁵ See Figure 2 (Yang 51)

¹⁶ Yang 51

walls still remained and commerce could not colonize the geographical center of the city. These gate-based shopping centers were all peripheral located around the wall in a ring. Use map.

Road Improvements

Improvement and expansion of the road network also became a priority of the municipal government as the desire to break out of the freeze in mobility as well as demonstrate Beijing's attempts to catch up to its Western peers. This sense of inferiority to the infrastructure of Western cities, part of the larger trend of cultural anxiety towards Chinese culture during this time was demonstrated in shame about the state of the city's streets. As such, programs to improve the streets were put forward. A government editorial proclaimed, "Although the capital cannot complete with other famous world cities where wide cement streets are kept clean and constantly washed by running water, the least we can do is make our streets walkable rain or shine, streets that are not muddy, bumpy, or foul smelling."¹⁷ Paving the streets of Beijing on a grand scale commenced, and from 1904 to 1924, when the capital was moved from Beijing to Nanjing, 96.7 miles of macadam road, and 8.27 kilometers of asphalt road were paved.¹⁸ However, this paving was distributed far from equally, with much of the new paving being put in and around the Legation Quarter, where foreign diplomats and businessmen resided, in order to impress them with China's progress, as well as concentrating on business districts and wealthy residential neighborhoods¹⁹. The poorer neighborhoods in the Outer City were largely ignored in the process, and the daily lives of the people stayed static.

¹⁷ Shi 73

¹⁸ Shi 74

¹⁹ Shi 75

Mobile Hierarchy of the Beijing Streetscape



Figure 3: Qianmen Avenue looking north towards Qianmen Gate during the 1920s. Pedestrians, rickshaws, bicycles, and trolleys all struggled to adequately share the crowded street SOURCE: Marilyn Shea

Alongside the limited infrastructural improvements on the roads themselves, new technologies made their way into Beijing during this time period, albeit new technologies that the working class had little time, money, nor interest to take advantage of. What was simply a walking city acquired new dimensions of mobility when technology including the rickshaw, streetcars, and a select number of automobiles. These new options did not wind up changing too many habits or opening up too many new opportunities, and working class Beijingers had a tendency to live where they worked²⁰. Studies on household budgets during the era showed

²⁰ Strand 26

that half of all Beijing families spent very little money on personal transportation²¹. Much of the Outer City still consisted of a labyrinthine network of *hutong*, narrow, winding alleyways that branched off of the wider main streets and housed the majority of the population. Built on an intimate scale in a haphazard, irregular pattern, navigational knowledge the *hutong* was typically a localized affair, with people rarely leaving their neighborhoods. The *hutong* by and large remained pedestrian-controlled as other vehicles began to appear on the main roads, where the differing vehicles with differing speeds sowed the seeds of conflict between different classes in this “hierarchy of mobility” that played out on the streets.

The Rickshaw

The first new manner of transportation introduced was the rickshaw²². First introduced during the final years of the Qing dynasty, the rickshaw rose to prominence through a confluence between the market and municipal infrastructure projects to pave the old avenues with macadam for the first time. The newly-paved roads allowed rubber-wheeled vehicles to swiftly make their way down roads without getting stuck in the mud that was still very much a reality of travel on Beijing streets. Ideal in Beijing’s flat landscape, the wheeled rickshaws allowed a new element of speed in intraurban travel, creating positive implications for spatial mobility and socioeconomic mobility.

Rickshaws symbolized a new mobile lifestyle of crisscrossing the city, but one that revealed divisions in Beijing’s society on a class level. For the first time, rickshaws provided a speed faster than walking speed to move back in forth. However, many in Beijing did not have

²¹ Strand 27

²² Defined by the Oxford English Dictionary as “a light two-wheeled hooded passenger vehicle drawn by one or more persons,” the rickshaw was essentially a man-drawn chariot with two wheels in back around a bench seat, with two poles extending forward from which a man would pull the passenger.

the pace of their lives fundamentally changed or quickened by the rickshaw. The rickshaw instead became the vehicle of choice of an aspirational professional class of bureaucrats, journalists, students, politicians and others in a new class of people that lived in the Outer City but worked in governmental, financial, or educational institutions in the Inner City, with the physical mobility afforded to its users a coexistent effect of the newfound socio-economic mobility available amongst the Western-educated given the collapse of the Imperial administration and its Confucian exam system. Likewise, the rickshaw was not popular amongst the upper classes either, as it was bumpy, uncomfortable and exposed to the elements in contrast with the traditional sedan chair, which was slow but gentle, or more expensive forms of private transportation. As such, the rickshaw was the “passport of the petite bourgeoisie²³” and symbolized a distinctive class that did not really exist before. The rickshaw occupied a middle sphere in the transportation hierarchy, with commoners still largely stuck to walking on foot and the wealthy preferring carriages or even the handful of automobiles that began to be imported into the city.

²³ Originally said by Xi Ying (Strand 28)



Figure 4: A rickshaw puller pulling a woman returning from market. Many found the idea of pulling a rickshaw degrading, likening the pullers to "human animals", but the wages provided proved alluring to working class men. SOURCE: David Strand

An intersection of modern technology of inflatable tires and ball bearings with the timeless affordability human propulsion, the rickshaw in many ways was emblematic of the mixed social and economic progress Beijing was making in the Republican era. The increased speed over the sedan chair, the traditional choice of the gentry was a symbol of technological process, yet this gain relied on the rickshaw puller in a task of extraordinary physical exertion. This image of a person pulling another person was a symbol of backwardness and exploitation, decried by critics of Westernization as the creation of a "human animal" and likening the lives

of rickshaw pullers to that of a mule²⁴. However, by all accounts, despite the hard work involved, rickshaw pullers were able to pull in a decent income, about fifteen dollars a day, and greatly improve the standards of living of themselves and their families, providing a ladder for financial stability among the urban poor and upward mobility for rural migrants. Rickshaw pullers and their families often ate better than rural landlords who formed the upper class of the countryside, and were able to save for the occasional entertainment expense²⁵. these improvements in standard of living among the urban poor via the job opportunities opened up by rickshaw pulling allowed some of the working poor to embrace the rickshaw as part of the Beijing streetscape just as much as the upper classes who rode in them. It helped as well that the rickshaw was a small, agile vehicle, on the same pedestrian scale as the existing streetscape.

Really –sounds as if you are defending rickshaw a bit too much on social grounds –Rickshaw Beijing underscores costs more than acceptance.

The Streetcar

Omnibus public transportation was also introduced to Beijing for the first time in the form of a streetcar system. Despite the streetcar's potential to revolutionize mobility within the city, shoehorning such a robust infrastructure, with its track, and reinforced roadbed, and overhead power lines into the city, would prove an intrusive task. This process altered streetscapes in ways that created conflicts with everyday life and threatened what was perceived by the population to be the established order while heightening mobility and movement as a point of tension for class struggles.

²⁴ Strand 36

²⁵ An account by rural landlord Xiangzi in a visit to Beijing noted surprise that rickshaw pullers were able to afford *mantou* (steamed buns) and fresh vegetables every day, and meat several times a month, something exceeded his own standard of living back home (Strand 29)

The stakeholders who built the streetcar systems consisted of foreign bankers and native merchants wanting a showcase project that cast Beijing in a modern light. The post-1911 Republican government passed an initiative for streetcar development in Beijing, but the financial instability of the government derailed this and forced the streetcar project like other economic development projects to be auctioned off as concessions in order to raise funds to keep the government running on a short-term basis. Under this environment of fiscal duress, the rights to build a streetcar system in Beijing were given by the government of Yuan Shikai to a Sino-French bank called *Le Banque Industrielle de Chine* (BIC).²⁶ Not seeing any immediate profit in a streetcar system in Beijing, BIC held on to its rights and did nothing with them until the autumn of 1920, when a group of Chinese investors approached the BIC and the government with a plan to revive the streetcar project, with half of the funding coming from a public offering to Chinese shareholders. The public offering was administered through the creation of the Beijing Streetcar Company and shares went on sale in May 1921. Bankers and bureaucrats made up the bulk of the investors buying shares, many of whom were not from Beijing but from Shanghai and other areas²⁷.

Opening to mixed reactions in 1925, the streetcar was received by the greater public of Beijing with suspicion, not enthusiasm, as summed up by historian David Strand “The streetcar was never able to establish a clear identity as a necessary convenience for enough people to overcome its other images as victimizer of rickshaw men... and a talisman of modernity of dubious value.”²⁸ The streetcars themselves were faster and larger than anything that had ever

²⁶ Strand 123

²⁷ Strand 125

²⁸ Strand 141

been on the street in Beijing, and people came to regard the streetcar as a menace. The faster streetcars were hazards on the street for the slower pedestrians and rickshaws not used to the mixed traffic. One incident exemplary of this mismatch of traffic speed and priorities included a steamed bun peddler being knocked ten feet into the air by a streetcar on Qianmen Avenue, spilling his buns all over the street. Another incident included a rickshaw man being caught mid-street crossing with a streetcar approaching. Panicking, he abandoned his rickshaw in the middle of the street and ran to safety, and the streetcar proceeded to smash into his rickshaw, destroying it.²⁹ And the passenger

This animosity was not helped by the fact that the streetcar provided little-to-no benefit to the working class. Reflecting its status as a for-profit corporation bankrolled by bureaucrats and businessmen, the average Beijinger could not afford to ride the streetcar on a regular basis, despite fares costing half that of hiring a rickshaw.³⁰ The high-paying factory jobs that provided trolley ridership in more industrialized cities such as Shanghai and Tokyo just did not exist in Beijing, which was mostly a city of bureaucrats and those who served them. Additionally, the original route, a 9.1 kilometer journey from Qianmen to Xizhimen, mainly served wealthy areas of the Inner City, and did not connect places the average Beijinger went in their daily life. Unlike the labor-intensive rickshaw, the streetcar also hired relatively few people and could not serve the working class in this capacity either. As such, the streetcar was cast as a public enemy, not a public service. It did not really work itself into the average Beijinger's life as an amenity and was

²⁹ Strand 134

³⁰ Strand 135

merely perceived for its hazard and disruptive effect on the everyday lives of those whose daily livelihood relied on walking.

The largest resistance came from rickshaw pullers who feared that their livelihoods were being put in jeopardy through competition for fares with the faster, more affordable, streetcar. The Beijing Streetcar Company anticipated this and made promises to the rickshaw pullers to set up a compensation fund to benefit those who would be rendered unemployed by the streetcar. To some degree these fears were unrealized as the streetcar failed to establish itself as an adequate mode of transportation for serving the particular needs of Beijing. Given the above unaffordability of the streetcar for working classes in Beijing, the same middle-to-upper classes that hired rickshaws were the main source of ridership. However, the rickshaw offered two distinct advantages over the streetcar: Door-to-door service into the intricate network of *hutong* (streetcars were bound to the main avenues) and security. Streetcars could not compete with rickshaws for comfort; they were crowded to the brim and often filled with pickpockets³¹. Nonetheless, feelings towards the streetcar were hostile due to the perceived job threat as well as a safety threat from the necessity of sharing the space of the street with the faster, larger streetcars. This common enemy in the streetcar created solidarity among rickshaw pullers that transcended the fierce competition they engaged amongst each other for passengers and a rickshaw puller's union was created in 1928. By October 1929, the Beijing Streetcar Company, short on money on account of lower-than-anticipated usage of the streetcar, had still not set up the compensation fund promised to the streetcar pullers and the union, and the class-conscious frustration boiled over into riot, with the "machine-breakers", as

³¹ Strand 136

they were called, hearkening back to the Luddite movement, ransacking and destroying streetcars and tracks, and attacking streetcar employees³². Streetcars, as a physical example of the class divides that plagued Beijing at the time, were an easy target for the frustration that was building up towards the socioeconomic hierarchy. Streetcars were part of this “hierarchy of mobility” that reflected the socioeconomic basis of access to movement and speed of life.

Bicycles and Automobiles

Rickshaws and Streetcars were not the only new forms of transportation introduced to Beijing during this time period. As can be seen in Figure 3, bicycles also were present in the city at the time. With the establishment of the treaty ports by European powers in Tianjin, Shanghai, and other cities as well as the first permanent diplomatic missions to Beijing in the late Qing, bicycles themselves had made their way into China for the first time in the late nineteenth century along with the foreign businessmen, missionaries, diplomats and colonial officers that conducted their affairs in the settlements. Foreigners on bicycles were a spectacle in the treaty ports, and Western cyclists became a frequent subject of pictorials in newspapers, displayed as strong, athletic, and in the case of fallen cyclists, amusing. Due to their status as a European import made halfway around the world, bicycles were expensive and only accessible to the wealthy. Among the Chinese elite who could afford such contraptions, the idea of being seen pedaling through the streets, mounted on an awkward looking machine, always in a precarious situation and visibly sweaty and exhausted was off-putting, going completely against social norms about how an aristocrat should appear in public. Wealthier Chinese, insisting on moving

³² Strand 241

in the most dignified manner, would only be conveyed by sedan chair or rickshaw, leaving the sweating and exhaustion to the peasants they could afford to hire.³³

It was the return of the first Western-educated Chinese in the early 1890s, along with the embrace of openness and resentment towards traditional Chinese values in the wake of defeat in the First Sino-Japanese War (1895) that enabled the bicycle to penetrate deeper into Chinese society.³⁴ By the late 1890s, bicycles were quickly becoming an upper class fad. Official import statistics show approximately £10,000 worth of bicycles and bicycle parts, about 500 to 800 bicycles, signaling growth that would explode even more with the coming of the new century, especially as the cost of imported bicycles dropped with the end of the Western European bicycle craze at the end of 1890s.³⁵ Without the reluctance to break from traditional Chinese social norms in public that prevented the older elite from adopting the bicycle with any type of enthusiasm, this new generation of businessmen, academics, journalists and socialites saw Western commodities, including the bicycle, as a badge of progressiveness and liberation from traditional Chinese social mores, a product of the cultural cringe produced by the humiliation of China by Western powers all throughout the Nineteenth Century as well as an increasing resistance to the ethnic Manchu Qing dynasty (ethnicity specifically? and the abolition of the old Confucian examination system.³⁶ It was this popularity on the new generation of scholars liberated from the examination system that started a strong culture of cycling amongst students and academics, something that continues to the modern day.

³³ Mikkolainen

³⁴ Esfahani

³⁵ Rhoads 96

³⁶ Rhoads 96

Beyond the fad among the new educated class, bicycles did not become a widely adopted form of transportation, especially in the face of competition with the cheaper rickshaw. In what was still a largely poor, un-industrialized Beijing, the labor of a rickshaw puller was much cheaper than the imported European bicycles. A 1910 survey at a Shanghai intersection in its cosmopolitan International Settlement counted 14,653 rickshaws, 942 horse-drawn carriages, and even 1,863 automobiles, but only 772 bicycles.³⁷ Still out of reach of the common person, it would take more than the overthrow of the Qing Dynasty and establishment of the Republic of China for bicycle to make inroads transition

In the 1920s, bikes were introduced to a wider range of people through issuance to postmen, soldiers, and police to assist them with their duties. No longer a middle class toy, this move granted bicycle access as a practical form of transportation to working class people for the first time and introduced the bicycle beyond the treaty ports to cities all over China.³⁸

Domestic production of bicycles commenced in the 1930s, making the bicycle for the first time affordable to the average worker.³⁹ At the same time the arrival of the automobile to China led the wealthy to abandon the bicycle, leaving it as a working class vehicle. The automobile was a fitting replacement for the sedan chair as it again shifted conveyance and work away from the traveler and towards an engine and a chauffeur. Yet, even more than the bicycle was in the 1910s, the automobile in the 1920s and 1930s was an expensive import that only the wealthiest could afford. Difficulties in the city –roads, gas, parking even width of major

³⁷ Rhoads 99

³⁸ Esfahani

³⁹ Esfahani

lanes? As a result, it never gained much traction. Reports on cars in Beijing during this time are scarce and hard to find.

Summary here on changes? Or after next paragraph.

Wartime and the End of the Republic

From 1937 China began an eighteen year period of straight war, first against the Japanese, and then between the Communists and the Nationalists. All expenses were diverted towards the war effort, and infrastructural improvements within the city halted. The ensuing gasoline shortage from war eliminated any non-martial use of the automobile had made into China and heralded the introduction of the pedicab, part-bicycle and part-rickshaw, to augment and replace the hand-pulled rickshaw and a trolley system that found itself increasingly unreliable with inconsistent access to electricity. Chinese made bicycles, too, rushed to fill in the void created by disruptions to other systems through wartime austerity⁴⁰. Eventually, Beijing was occupied by the Japanese, and martial law halted any continued development and infrastructure fell into disrepair. A situation that would continue after Japan's defeat in 1945 and the resumption of civil war between the Nationalists and the Communists that would see the city become a battleground. Urban development and growth would not resume until the establishment of the People's Republic of China by victorious Mao Zedong and his Communist Party of China in 1949.

⁴⁰ From 1929 to 1948, the amount of bicycles in Shanghai increased almost eight-fold from 40,000 to 230,000. Even as use skyrocketed, esteem plummeted as bicycles became a symbol of wartime austerity and the absent automobile the symbol of a prosperous future that slipped out of grasp. (Rhoads 104)

Needs conclusion summary on main themes of transportation changes and the city.

Chapter 2: Maoist Beijing

Chairman Mao Zedong and the Chinese Communist Party emerged victorious from the wars and power struggles of the Second World War and the Chinese Civil War and with the establishment of the People's Republic of China. Mao's People's Republic brought fundamental changes to the way China, and by extension Beijing, functioned. For the first time since the overthrow of the Emperor, there was a strong, central government at the helm of the Chinese state, a government committed to remaking China as an egalitarian society and overseeing the transformation of the nation from an agrarian countryside to an industrial power. Chosen as the restored capital of the newly minted People's Republic of China, Mao's regime wanted Beijing to be reshaped by applying socialist ideals to urban planning, overseeing the de-commodification of land, expanding the urban area far beyond its original footprint in the Inner and Outer Cities in a massive Soviet-influenced master plan. With this spatial expansion, the economic importance of the old center of the city was diminished as distances became longer and industrialization focused on the outskirts. Furthermore, this spatial decentralization was aided by functional decentralization in the form of the *danwei* system of factory work-units that served to encapsulate economic life in Beijing in a series of separated campuses that served to continue that same degree of localized, compartmentalized life that was so prominent in past eras, though accommodating much larger amounts of people and in a larger overall footprint.

The Socialist Capital

With the Communist Party's devotion to central planning and the authority to pull it off, Beijing in 1949 for the first time had formal city plans drawn up for planned expansion into a

new socialist capital, the crown jewel of the People's Republic. Soviet Planners were imported, and in consultation with CCP officials resolved to publish plans for a new, expanded Beijing in the Five Year Plan of 1953. This formal, planned, guided process being a stark contrast with the haphazard, unplanned growth of the Republican era. Still, the CCP had little experience with building and urban planning, and a need to revive an industrial base crippled by almost two decades of Japanese occupation and civil war so they looked to their elder Marxist companions at the helm of the Soviet Union for inspiration and support. Indeed the political slogan of this era propagated by the government was "Learn Everything From the Soviet Union". The philosophy guiding to Municipal Town Planning Commission formed in 1949 tasked with creating the central plan for Beijing was "to serve the masses, to serve production and to serve the Central Government", all of which are clearly Marxist-influenced goals⁴¹.

Defining Socialist Urbanism

Socialist ideology creates a unique set of priorities that defines an urbanism very distinct from that taking shape in the West at the same time. According to urban historian Victor Sit, the Marxist city seeks to create both a sense of equity, defined as "an attempt to reduce the gap between the proletariat and the peasantry, town and country, and the equal provision of all items of consumption within the city" as well as fulfill its role as an engine of the economy of "socialist construction", that is an emphasis of "productive activities" (industry, construction transportation, communication, etc.) over that of "non-productive activities" (finance, healthcare, retail, insurance, municipal services, etc.) and a strong emphasis on heavy industry

⁴¹ Sit 466

at the expense of the production of consumer goods and the service industry⁴². Soviet planners, working through these ideological goals, had created cities that had distorted occupational and spatial properties compared to Western cities, with a historic or relic core that serves as seat of government and display of national pride while having little economic function, and concentric rings around the city of relatively autonomous function-based sectors. Additionally, the flatter social structure of a socialist society creates both higher overall population densities and a flatter population density gradient compared to the cities of the West that have a strongly defined dense core and a moderately-to-sparsely populated edge⁴³.

⁴² Sit 463

⁴³ Sit 464

Moscow: A Model for Socialist Urban Development



Figure 5: The Moscow Plan of 1935. The overall shape of the circumferential ring roads and greenbelt respectively connect and break up the peripheral districts of the city. This is very similar to the plans for Beijing SOURCE:??

Wordy The main inspiration for the socialist principles behind Beijing’s plans of the 1950s was the Soviet Union’s 1935 plan for Moscow, given the desire by the Chinese government to emulate the model used by the capital of the Soviet Union and the symbolic center of Com`munist government worldwide. The “The General Plan for the Reconstruction of the City of Moscow” aimed to creating the most favorable and equal working conditions, welfare and recreation for all, in concordance with the guiding philosophy of Marxism-Leninism. The plan remade Moscow’s irregular pattern of crooked streets into a comprehensive network of radial and circumferential boulevards referred to as “rings”. All of this was centered on the

Kremlin at the center of the city, and residential activity near this center of government was minimized. On the periphery, instead of a continuous built environment, new development was formed around districts based off of use separated from other districts by parkland for a discontinuous urban environment consisting of residential, industrial, and institutional microdistricts, all built at relatively uniform density. The key growth was on these peripheral areas, where the heavy industry that Stalin and the Soviet government prioritized as part of the socialist mission of the city was concentrated, especially in the previously undeveloped South and West of the city⁴⁴. Part of his model for growth in this new periphery was a comprehensive metro network consisting of multiple radial lines and a circumferential ring linking them, also planned at the same time. The characteristics of circumferential ring roads, division of the city into use-based sectors, and a flat density gradient with discouragement of continued growth in the historical center of the city would all come to influence the plans for Beijing, albeit not quite at Moscow's grand scale due to financial constraints.

⁴⁴ Savas & Kaiser 54-59

Evolution of Beijing's Master Plan

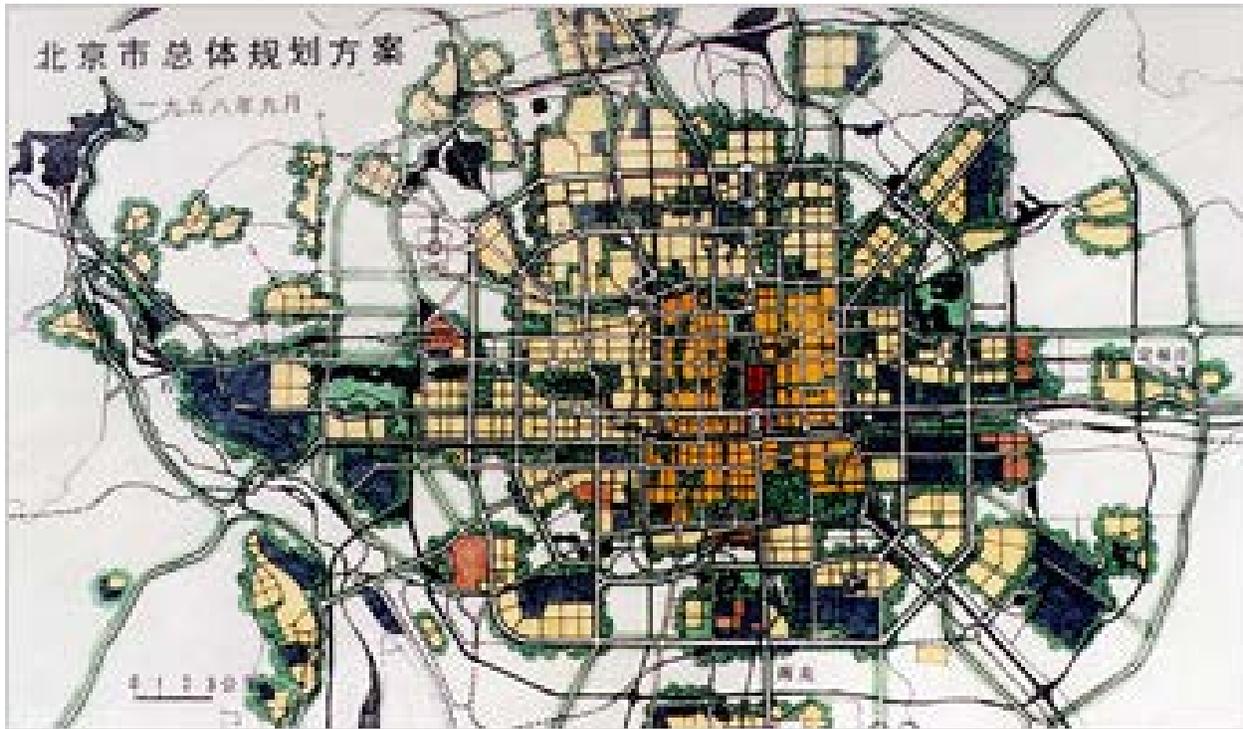


Figure 6: The Beijing Master Plan of 1957, like other Beijing plans of the 1950s, focused on a halo of new development in the form of *danwei* encircling the old city center SOURCE: Beijing Municipal Planning Institute

The 1953 Master Plan was a progressive plan that departed radically from the traditional urban form of Beijing and adopted a distinctly socialist direction of development, serving “the masses” through new housing blocks, “productivity” through industrial zones, and “the Central Government” through the adaptive reuse of the old city center. Drawing heavily from the Moscow Plan in 1935, the plan introduced functional zoning into the city for the first time since the prescriptions and customs of Qing Beijing broke down. This plan privileged industrial production, as it is a productive process in Marxist theory, with new industrial zones dispersed in the suburbs while new residential areas were located between the old city and new industrial zones, separated by greenbelts.

Much like in Moscow, this plan introduced a ring-radial structure for development consisting of a circumferential network of wide roads and boulevards that wrapped their way around the existing walled city alongside radial boulevards emanating out to far-flung districts, adding new layers to existing urban fabric of concentric layers in an effort to reduce density in the center and encourage development to spread out. This form had little-to-no resemblance of the narrow winding *hutong* of old Beijing, being built at an industrial scale instead of a human one. One key difference from the Moscow plan is that the roads of the center of the city, with the exception of a few thoroughfares, remained relatively untouched, encouraging travel around the old core instead of to/through it. The new districts built out on these concentric grids provided wide conduits for mobility along these orbitals of development along with grand boulevards providing expedient access across the city in a grid-like pattern. The wideness of the streets was one of the most striking features of the plan, most notably the central east-west artery of Chang'an Avenue, which was planned to be 100-120 meters wide. The impetus behind these wide streets was partially a desire for grandeur, but partially a defense concern in the aftermath of the Korean War. The wide roads could easily transport tanks, trucks, as well as other military supplies, as well as doubling as aircraft runways⁴⁵. Unfortunately, this defense-first mindset did not take pedestrian-friendliness into account, and these new boulevards functioned more as barriers to mobility than facilitators⁴⁶.

Economic activity, hence manpower, was situated the outlying industrial districts, and residences focused in new housing compounds separated from the factories by greenbelts in

⁴⁵ Xinhua

⁴⁶ Architect Liang Sicheng remarked humorously of the absurd length of the road, " West Chang'an Avenue is so broad that even an athlete takes 11 seconds to cross. Ordinary people probably take about a minute to cross, not to mention those foot-binding old ladies." Xinhua

order to shield residences from some of the aesthetic harms of living adjacent to factories and provide public space. % compared to those still living in hutongs. The greenbelts also served as edges and barriers defining sectors and separating them from each other. This also served to separate the center from the outlying areas, taking the place of the walls around the central city and cutting it off from the new development in its hinterland in much the same way. These physical characteristics made for a decentralized Beijing that had both expanded beyond the mostly pedestrian scale of the old Inner and Outer Cities and had little in the way of an economic or residential core. While not the plan that was ultimately followed through with in Maoist Beijing, it captured the basic pattern of continued growth and laid down the basic principles for what would become Beijing's development for the next few decades.

Planning in Beijing under Soviet influence continued throughout the 1950s with the most notable modifications made in 1957 and 1958 right before the beginning of Mao's Great Leap Forward, an idealistic but ill-conceived plan to develop a modern industrial base as fast as possible in order to bring China up to status as a world power. Part of this plan included eliminating class distinctions, dubbed in Maoist thought as the "three contradictions" of town/country, manual labor/mental labor, and industry/agriculture⁴⁷. As part of this leftist push to minimize these distinctions and further facilitate peripheral industrial growth, Beijing's circumferential Ring Roads were put on the map, wider and more prominent than any road from the center to the periphery, facilitating these intra-suburban corridors alongside them as the conduits of traffic growth in the city while stifling access to the center via their width, making them cumbersome to cross on foot. Accompanying the Ring Roads was the destruction

⁴⁷ Sit 472

of the city walls, severing the distinction between center and periphery, and a physical barrier between the intellectual labor of government administration and the manual labor of the surrounding factories be clearer. This abolition of separation continued on out to the industrial parks themselves, where the Soviet-influenced idea of segregating residential and industrial development into superblocks was discarded first in favor of smaller, more decentralized “microdistricts” of 30 to 60 hectares and 10,000 to 20,000 residents, and later for the integrated communal live-work units known as *danwei* that would become the hallmark of Maoist urban development across China⁴⁸. Size and scale? Additionally, the footprint and area of the city was expanded farther out than in the 1953 plan, further increasing distances between sectors as the sectors themselves became designed to look inward. Both of these conceptual units blurred the lines between living space and working space, and were designed to shorten commute times, hence increasing time and labor available for production. The end result of these planning and construction initiatives was a “jigsaw puzzle of spatially demarcated work units surrounding the old city core (Lu 49)” would continue to define the structure of Beijing to the present day. This systematic decentralization is the beginning of a distinctive Chinese socialist urban form, and the divergence from Soviet ideals would predicate the diplomatic and ideological Sino-Soviet split in 1963 as China developed its own concept of political socialism as well.

The Monumental Central City

The overall plan to expand and remake Beijing was a drastic break from the older urban form of walls and *hutong* and pedestrian-scale streetscapes, a decision that was just as

⁴⁸ Chaowen 100

ideological as it was practical. Mao wanted a new modern socialist city to match his new modern, socialist state. A casualty of this break with the past would be the older central core of Beijing. Government offices initially were planned in 1953 to reside in the old walled city as a symbol of the progression of power and a reinforcement of the legitimacy of the regime, but by the Plan of 1957, shifting government policies moved the planned administrative center to the West side of the city so that government office complexes could be built from scratch⁴⁹. With its bustling markets and decaying Imperial palaces, the older section of the city inside the wall was decidedly un-socialist in its form and uses. Its time as a center of government was rendered obsolete with the move of government offices to the west side of the city. As a result, the central historic areas were repurposed for monumental and symbolic purposes as a projection of state power: here new monuments glorifying socialism would be constructed and the site harnessed as one projecting the culture of the new state, while simultaneously harnessing the legitimacy of the old Imperial state.

⁴⁹ Chaolin 96

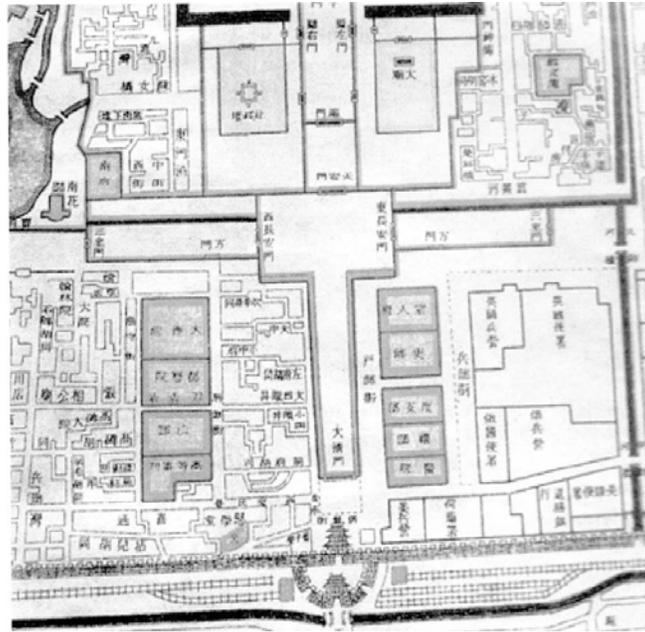


Figure 7: Tiananmen Square in 1908, showing the t-shape. Note the buildings and hutong flanking it to either side, which would be demolished during Mao's reinvisioning of the site. SOURCE: Hung

Mao's transformation of Tiananmen Square is a prime example of the types of changes that occurred in Central Beijing that diminished its economic value and importance to locals. At the establishment of the People's Republic in 1949, Tiananmen Square was a narrow t-shaped area between Qianmen and the Imperial Passage to the Forbidden City, flanked by residences and older buildings that served as government offices in Imperial times⁵⁰. The area was a high-traffic one, with the Imperial city just to the north and the markets of Qianmen just to the south. Upon ascending to power, Mao, seeing Tiananmen as a potential physical manifestation of the new state's power, wanted a square in which he could address the nation. He ordered a new, larger square to be built in Tiananmen's place "big enough to hold an assembly of 1 billion"⁵¹. While his ambitious number obviously could not be met, the square was transformed over the next ten years into a space that could accommodate more than 400,000 people. The older

⁵⁰ Hung 19

⁵¹ Hung 23

buildings flanking the original T-shaped square were demolished, leaving a large open space that would be bounded off by two other grand monuments to state power, the Great Hall of the People to the west and the Museum of Chinese History to the east.⁵² At the center of the empty square, the Monument to the People's Heroes, a 37.4 meter stone obelisk, was constructed, the only structure occupying the otherwise empty square. The old square, a lively, bustling place with plenty of foot traffic, was neutered, transformed into a stage for political theatre, empty and devoid of commerce except when packed with people artificially for parades, speeches, and other performative state functions. This deadening of a space that belonged to the people and replacement with a monument to the state is reflective of what happened to the central core as a whole, with the Forbidden City and various Imperial gardens also eventually preserved as a museum. Implications for mobility –loss of destination but still blockage for many flows.

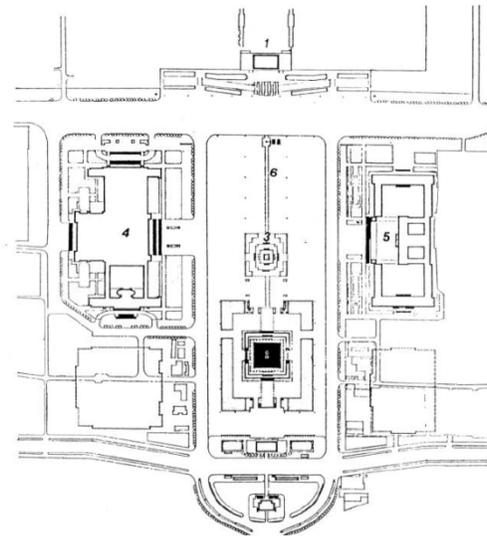


Figure 8: Tiananmen Square in 1959, after Mao's transformation. The open area has been vastly expanded, and the adjacent buildings demolished in favor of the Great Hall of the People (left) and Museum of Chinese History (right). The Monument to the People's Heroes lies in the center. SOURCE: Hung

⁵² Constructed in 1958 and 1959 respectively. The south side of the square would eventually be closed in by Mao's tomb, constructed in 1978 (Hung 23)

Danwei Urbanism

The *danwei*, or work unit, picked by the Master Plan of 1958 as the building block of residential and industrial development of Chinese cities, would prove to shape the mobility of the average person in Beijing for the next three decades. Designed in reaction to perceived shortcomings of the Soviet superblock, the *danwei* was a self-contained development housing residential housing and facilities right next to the workplace in a campus-like structure. The common physical features of the *danwei* according to Chinese architectural historian Duanfang Lu are summarized as:

1. *A walled and gated enclosure*
2. *A well-integrated internal circulation system*
3. *Close association of work and residence*
4. *A high level of provision of social facilities*
5. *Rationalist architectural layout and style*⁵³

The walls of the *danwei* function to set it apart from its surroundings as an autonomous unit, with wrought-iron gates being the only access to and from the work unit. In an environment reminiscent of the old city of walled sectors, the gates close at midnight only to be opened in the early morning, making coming and going for both residents and outsiders difficult late at night. This monopoly on free movement by the gatekeeper is very much akin to the pattern of walls and gates in the old Imperial Beijing. The internal circulation system of a typical *danwei* size? Pop?consists of a collection of roadways that serve as the right-of-way for pedestrians and vehicles alike, laid out in a flexible, non-standard pattern that fits the particular

⁵³ Lu 52

needs of the unit. Streets mostly remained straight to facilitate the movement of large industrial transport, and were often laid out in a regular grid. An internal absence of traffic lights, road markings, or signs created anarchy in the traffic flow that is perhaps still apparent today in Chinese motorists' infamous disregard for traffic laws.

This self-encapsulation of the *danwei* had social and societal implications too, as it was the method by which a Chinese person's entire life was organized. The *danwei* was one's community and societal identification, more so than identification as an individual or with a city, province, or region⁵⁴. Everything was done within the work unit, or with the blessing of the work unit, or as directed by the work unit. The work unit told its inhabitants when to rise in the morning, when to work, and when to rest. Meals were taken with the work unit, as was exercise, and schooling, and entertainment. This thorough dominance of the *danwei* in the lives of Beijingers meant that thoughts and conceptions of Beijing as an integrated city were neglected, leaving a gaping hole for when the city would have to pull itself together in the era after reform.

⁵⁴ *New York Times* Journalist Fox Butterfield described the dilemma he faced when trying to get a hotel room in Beijing in 1979 as one of the first to take advantage of China's relaxation of control of foreign visitors. The hotel clerk kept asking him what his work unit was, as it was a necessity to register at the hotel, as it was the *danwei* that sponsored travel, not an individual making his own way. Eventually, the crisis was solved, but only at the intervention of the Chinese Ministry of Foreign Affairs agreed to allow him to list the Ministry as his work unit on a temporary basis. (Lu 47)

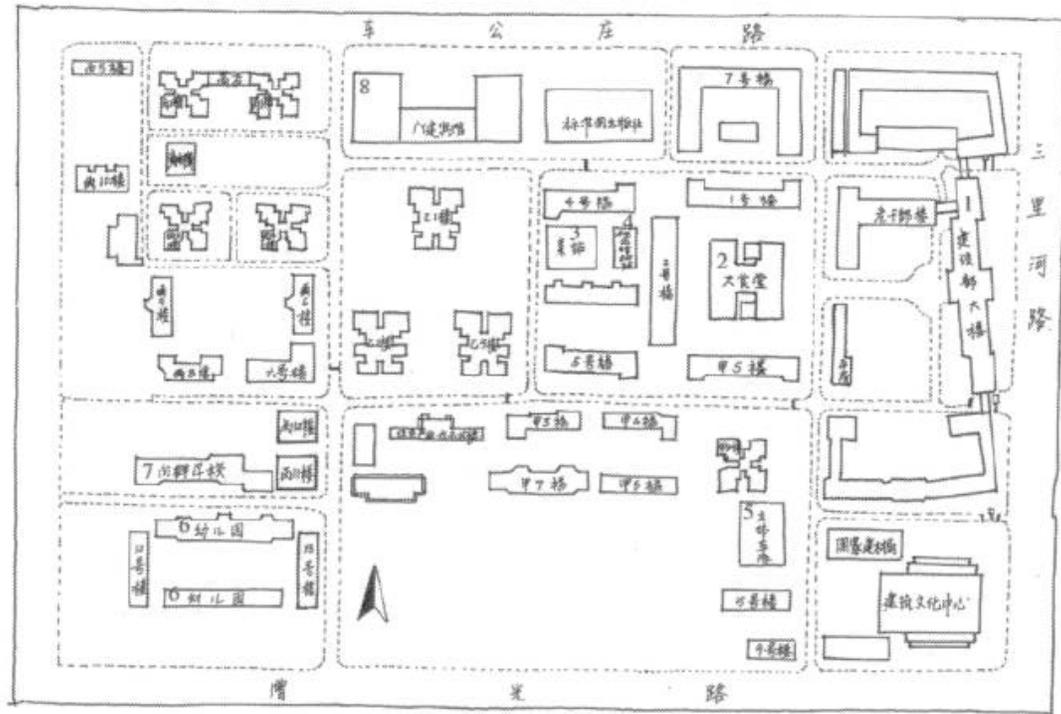


Figure 9: Map of the Ministry of Construction. The non-residential buildings (labelled) are mixed amongst the residential buildings (unlabelled) and a system of narrow alleys provides comprehensive connectivity within the complex. SOURCE: Lu

As can be seen in the following images of danwei plans, the residential housing for the employees of the commune was sometimes tightly integrated, and sometimes physically separated by gates and walls, but always adjacent. As such commutes were short, pedestrian or traversed on bicycle and the separation between work-life and domestic life was blurry. This lack of separation between work-life and domestic life was further enforced via the provision of the various community facilities by the *danwei* on site. Always present were canteens, social halls, medical clinics, and public bathing facilities. As the scale of *danwei* increased so did the varieties of facilities included. Nurseries, kindergartens, parks, libraries, sports fields, guesthouses, shops, food markets, hospitals, post offices, banks, movie theaters, workers' clubs, and schools could all be found in a given *danwei*. This plethora of communal facilities

meant that ones' effective community was not that of the larger city, but of the workplace and *danwei* itself. All of the needs of life were met inside the *danwei*, so reasons to venture outside of it were few and in between⁵⁵. Change of scale over time?



Figure 10: Site Plan of the Beiyangcun Experimental Microdistrict, 1963. The contrast in scale between the small interior streets and the surrounding boulevards is striking. Note the recreation center in the top right corner. SOURCE: Lu

Transportation in Mao's Beijing

Comprehensive transportation around the new expanded city was not a priority, given the way *danwei* ensured most workers would only rarely have to leave the compound they lived in. As such, connectivity between neighborhoods was quite low. The transportation priorities of most people involved getting around their individual *danwei*, and in this context the bicycle came to join walking as a main form of transportation. However, government ideology regarding making Beijing a model socialist city did push official to plan and begin

⁵⁵ Lu 53

construction on a rapid transit network that covered more substantial differences. Betraying the title as the “People’s Republic”, the largest government transportation expenditure was on infrastructure that mainly benefitted party elites with special privileges, a situation that echoes the situation with the Republican-era trolley system.

The Bicycle

The vehicle that came to convey the people of Beijing in and around their *danwei* was the bicycle. With the adoption of government-owned automobiles by the new ruling elite of party officials and the obliteration of the former merchant class that used rickshaws in the societal upheavals of the early communist period, the rickshaw had long died out by the 1950s. The bicycle, as a self-propelled vehicle, was fitting to promote for a socialist-inspired regime as a natural progression the decidedly classist Republican image of the working-class rickshaw puller pulling the elite as passengers.

With the establishment of the Communist government came a period of economic collectivization and confiscation of wealth that eliminated the plethora of transportation options available to Republican merchants. Private automobiles no longer existed as cars were reserved for official state business, usually the use by high-ranking party cadres. Pedicabs, a technological refinement of the rickshaw, shifted to mostly being used for transporting goods as there was no informal economy to generate cash for transporting people. The little public transportation that existed, mostly inadequate bus networks, was slow, underdeveloped and overcrowded, making it an option people avoided when possible⁵⁶. These realities made cycling the only feasible alternative to walking for most Chinese, leading the bicycle to improve its

⁵⁶ Rhoads 106

reputation through the 1950s, 1960s, and 1970s. The popularity of the bicycle in this era was rooted in their usefulness in getting around within the *danwei*. With their modest distances and tight, yet regular internal road networks, were easily negotiated on bike. Given the contained nature of the *danwei*, typical trips rarely exceed more than a few kilometers, ideal biking distance. The contained community of the *danwei* was perfect bicycle scale.

In the time of a backwards economy fueled by failed industrialization and squandering of resources during the Great Leap Forward and a loss of technocratic expertise and state control during the Cultural Revolution, bicycles were a direct improvement in people's quality of life. As such, a bicycle became a must-have item and one of the few outlets for consumerism during this era⁵⁷. This emergent consumerism surrounding the bicycle could be observed in the way children prided themselves on the perceived quality of their bikes. Li Fang, who grew up in Beijing during the 1970s, recalled, *"Getting a bicycle for my 12th Birthday was more or less a rite of passage. Every kid got one. I got a Feige [a prestigious brand] and was able to brag at school, much in the way today's youth brag about clothes or cell phones."*

⁵⁷ Bicycles were one component of the *sanshengyixiang* (three rounds and sound) that all people aspired to own, along with a wristwatch, and sewing machine, and a radio (Weatherhold).



Figure 11: A Chinese bicycle in 2013. This bike is not all that different from those that were ubiquitous in the 1960s and 1970s, with only one gear, and only a wireframe basket as an accessory. SOURCE: Author NICE

With increased demand for the bicycle as the backbone of local passenger transportation, increased production followed. Starting in the early 1950s when there were three bicycle factories in all of China inherited from the Japanese occupation, the amount of bicycle factories grew to eleven by 1965 and forty-six by 1979. A mere 80,000 bicycles were made in 1952, but this number quickly grew to 806,000 in 1957, 1,838,000 in 1965, and 8,540,000 by 1979⁵⁸. Different factories produced different brands of bicycles, but they were all fundamentally the same simple one-gear street bikes with a basket on the front, designed for simple urban chores and transportation. Despite the uptick in bicycle production, the enormous demand from almost every single person in China could not be met and consequently bicycle prices were high with regards to the typical wage, as well as subject to rationing, matching up with the bicycle's luxury status. In 1977 the average price of a bicycle was 159 Yuan, which was

⁵⁸ Rhoads 107

more than three month's salary for a typical urban worker during that time⁵⁹. Despite the somewhat prohibitive price, bicycles continued to spread, much like automobiles in postwar America, and the number of bikes in Beijing rose from 190,000 in 1950 to almost 3,000,000 in 1980. By the late 1970s, virtually every household in urban areas in China had at least one bicycle, with an ownership rate of 102.3 bicycles per 100 households⁶⁰.

Subway Beginnings

Public transportation existed in this era for trips that left the *danwei*, as private vehicle ownership was virtually nonexistent, but in practicality these trips were few and far between, with the majority of workers living in *danwei*. The pre-war streetcar network, in the interest of infrastructural robustness, had been converted to a network of trolleybuses and diesel buses that largely had the main roads to themselves, only sharing with truck traffic and the military, but the Beijing Municipal Planning Commission and the Communist Party had much grander plans for an extensive subway system that would move the people through the city.

The fledgling beginnings of the subway system also began during this era, as part of Soviet cooperation in making Beijing into a model Socialist city. Subways figured into both the 1953 and 1957 plans, modeled on that of Moscow, whose attractive, and extensive metro network was the envy of the Communist bloc, both for its ability to move people through the city and its practical use for self-defense⁶¹. A report issued in 1957 by the Municipal Planning Commission included seven lines, including a loop line, with 114 stations and track totaling 173

⁵⁹ Rhoads 107

⁶⁰ Rhoads 107

⁶¹ The 60 meter deep stations were used as bomb shelters during World War II, something that a Chinese government that felt threatened by US presences in Japan and South Korea felt would be an important use. Xinhua

kilometers⁶². The plan included concrete plans for the first two lines, a central line under the main east-west boulevard of Chang'an Avenue, and a loop line under the city wall, which was soon to become the Second Ring Road. Given the state of Chinese technical knowledge and technological capability at the time, Soviet experts were an important part of this planning process, but by the time China was ready for construction in 1963, diplomatic breakdowns between the Chinese and Soviets in the Sino-Soviet split led to the withdrawal of Soviet expertise from the project.⁶³ Without Soviet expertise, the project was further delayed, and a scaled back system located closer to the surface with more frugal construction methods began construction in 1965, and the first section of the east-west Line 1, also consisting of the southern section of what is now the Line 2 loop opened in 1969 to great fanfare⁶⁴. Further extensions to the line opened over the course of 1971⁶⁵. The line, connecting the universities, military installations, and government offices in the west with monumental and commercial sites in the center, served the comings and goings of diplomats, university workers, and government bureaucrats, all of whom had considerably more freedom of movement compared to the bulk of the population who lived under the restrictive *danwei* system. Indeed, only members of the public with credential letters from their work units were permitted entry into the subway, which in practice meant only said elites, and the subway functioned more or less as a convenience for the privileged as well as a showcase for foreign dignitaries. Further construction of the system to serve more of the city stalled as the political excesses of the

⁶²Beijing Daily

⁶³ The misguided industrial and agricultural policies of Mao's Great Leap Forward from 1959-1961 crippled China's productivity, delaying most non-defense infrastructure projects, including the subway.

⁶⁴ Beijing Daily

⁶⁵ The route of the original subway line is present in Figure 21 as the line going from the bottom corner of the Second Ring Road out to the Western suburbs.

Cultural Revolution led to a loss of central government control and focus. Multiple closures occurred for political reasons during this unstable time⁶⁶, and Beijing would remain with only this one subway line for the next fifteen years.

Cultural Revolution, Economic Stagnation, and Disappearance of Expertise

The aforementioned Sino-Soviet split that to large loss of technical expertise was only the beginning of China's issues with continued urban planning and development under Mao. An intellectual and cultural purge known as the Cultural Revolution was implemented starting in 1966. The Cultural Revolution was an attempt by Mao and a loyal inner circle known as the Gang of Four to violently remove so-called capitalist and traditional cultural elements that supposedly diluted pure Communism. As part of this purge, many intellectuals, professionals, and other educated people were suspected of being "counterrevolutionary" and locked up or killed or ruined, and basic bureaucratic function, including urban planning and construction, slowed in this period of economic and cultural stagnation⁶⁷. For the next ten years, China's economy grew slowly, little was built, and Beijing's *danwei* were left to function more-or-less independently in this decade of relative anarchy. It would take the death of Chairman Mao for development to once again pick up.

⁶⁶ Liu Peng

⁶⁷ Moser Messy footnotes

Give us more of a chapter end summary

Chapter 3: Contemporary Beijing

With Mao's death in 1976, the path was cleared for General Secretary Deng Xiaoping to become China's new leader in 1978. After ending the last vestiges of the Cultural Revolution and arresting the Gang of Four, a drastic shift in policy occurred. Out of a desire to improve the lives of Chinese people and the power of the Chinese state, Deng transformed the Chinese economy and society through a series of innovations in policy known as the "reform and opening up" which ended China's international diplomatic isolation, gradually introduced the elements of a market economy, and encouraged foreign investment and economic experimentation in an effort to grow China's wealth and influence. Any obsession over devotion to Maoist ideology was abandoned and instead growing prosperous by whatever means necessary was emphasized in what Deng dubbed "Socialism with Chinese Characteristics"⁶⁸.

With this new devotion to growing capital, wealth and international presence, the goal and purpose of the Chinese city also changed, no longer being specifically an engine of industrial production, but more generically a generator of wealth. With this change of purpose, and the new flows of private capital, both foreign and domestic, Beijing reshaped itself really who was the agent? to function as a dynamic city enmeshed the world economy. At the same time, it encountered (and continues to encounter) challenges with its rapid growth in population and wealth, particularly with regards to meeting newfound demands for mobility and connectivity

⁶⁸ This name was particularly ironic due to the fact that the central tenet of Socialism with Chinese Characteristics was a free-market economy, which is considered the antithesis of socialism. Political slogans of this era, in contrast to the ideological slogans of the Cultural Revolution, demonstrated these new values of the pragmatic importance of wealth and the disregard for adhering to ideology, including "To get rich is to become glorious" and "Black cat, white cat, whatever cat catches the mouse is the good cat". (Moser)

in a city that has developed in such a way that isolates neighborhoods from each other and lacks a logical center around which to connect people and markets.

Urbanism with Chinese Characteristics

In contrast to the mixed-use *danwei* that dominated the development strategies of Mao, post-Mao urban development in Beijing has taken a decidedly different path, seeking to differentiate districts based on purpose and dismantle the geographically small living-working communities in favor of a sectoral approach to single-use urban growth as dictated by the real estate market. The real estate market has been making choices the market itself makes choices within the frame of the urban form and infrastructure developed by the previous regimes, and within the regulatory framework of the current government. These three forces, private capital, historic form, and government policy, all have come together to foment increasing decentralization and sprawl in Beijing. Despite claims to increased planning, an integrated development pattern has not followed the dismantling of the *danwei* system and the re-integration of the city-wide economy.

Sectoral Specialization and Metropolitan Bifurcation

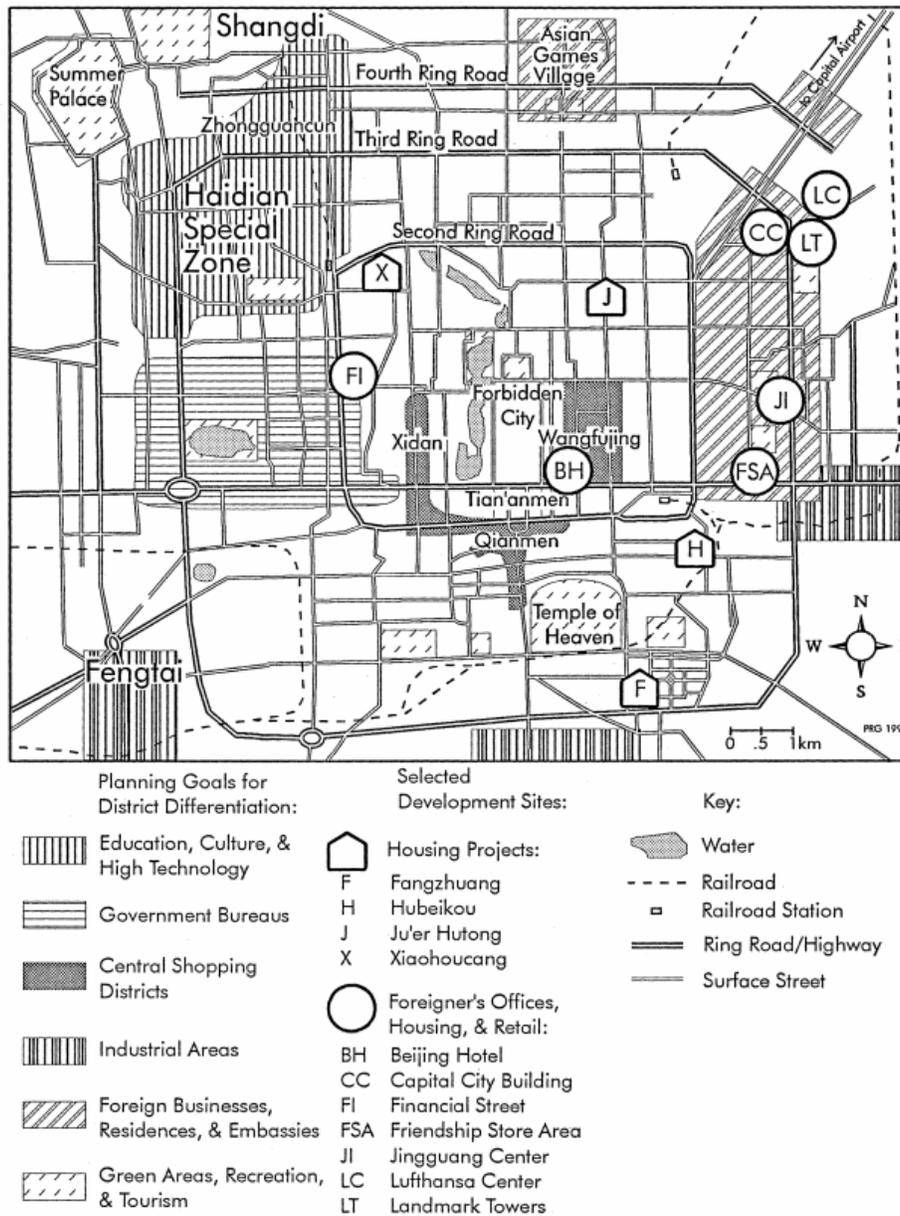


Figure 12: The Development Districts of Beijing as of 1994. The isolation of foreign business in the East and domestic and government business in the West can be clearly seen SOURCE: Piper Gaubatz date page?

The government's new city plans of 1982 and 1983 were tasked with preparing Beijing for the economic development that would accompany the opening-up of its economy. A signature of these plans is the designation of entire districts in the city for specific types of

economic development⁶⁹. With specific areas earmarked for specific types of development, entire neighborhoods devoted to a single economic use arose, precluding any local mixed-use nodes to arise within development and encouraging neighborhood compartmentalization and isolation from its neighbors.

Much of this specialization was more broadly focused into larger groupings of areas prioritized for domestically-funded and administrative use and foreign investment, respectively, creating a bifurcation of the city into eastern and western halves based on foreign investment versus domestic economic activities⁷⁰. The Eastern half of the city was prioritized for foreign investment and business. Beijing was traditionally more of an administrative and bureaucratic center, and government functions overshadowed its economic importance. In the post-reform era, Beijing elites sought to establish itself more properly as an economic center. It is in this section of the city that the embassy district, the nascent government-defined Central Business District where many foreign and joint Chinese-foreign business ventures housed their offices. Expectedly, most of Beijing's expatriate population, businessman and diplomat alike, resides on this side of the city in gated, guarded apartment complexes, alongside the wealthy Chinese businessmen they work with. Commercial life in this district also mirrored the foreign presence with the emergence of premier Western-style nightlife and international cuisine in the Sanlitun district between the Second and Third Ring Roads in Eastern Beijing.

The Western half of the city was instead a magnet for public service and other domestic functions, housing thirty-eight different universities, numerous government bureaus, and an

⁶⁹ Gaubatz 80

⁷⁰ Gaubatz 80

emerging domestic high-technology sector⁷¹. Western Beijing served the city's traditional role as an administrative center, as this was where government offices relocated under the Master Plan of 1958, and other domestically-driven industries that depend on close relationships with the government have been housed here. As a result, Western Beijing has become home to many public servants and other institutional employees. A practical effect of this bifurcation of the city is a differing built environment between the two halves. Each side of Beijing has different urban environments, with high rise office towers dominating Eastern Beijing, and institutional and industrial campuses dominating Western Beijing. The campus structure of Western Beijing creates many small, locally walkable areas around an institution in a situation similar to the *danwei*, but connections between the institutions are weaker and boundaries tend to be higher between adjacent areas, creating a network of ill-connected compartmentalized neighborhoods. On the Eastern side, the various developments are more seamlessly connected, but the area as a whole tends to be less dense with small businesses, side streets, and other structures that create a pleasant pedestrian environment. Both structures present challenges to nurturing stronger pedestrian culture, though in different ways. Can you explain how you know this?.

Restrictions on Development of Central Beijing

One of the policies to most dramatically affect the urban landscape of modern Beijing were the institution of concentric height restrictions based on proximity to the historic center

⁷¹ The Haidian Special Zone, one of several specialized industrial development zones instituted through government planning, harnessed the synergistic energies of higher education, domestic industrial capacity, and foreign technical expertise in order to create a cradle for the domestic high-technology sector in Eastern Beijing (Gaubetz 83)

of Beijing, in order to preserve monumental sightlines in and around Central Beijing⁷². With the opening up of China to foreign tourists, the Forbidden City, Tiananmen, and other historic or monumental sites in the central city have become prominent tourist attractions and preserving said charm in a marketable form has become a priority of the government. In the 1982 comprehensive master plan, anticipating the spread of high-rises in the still largely low-rise city, three concentric zones of height restrictions were initiated in order to preserve the sightlines of the Forbidden City, Tiananmen Square, and other monuments in central Beijing. Construction within the Forbidden City itself was held to three stories, while buildings within the Second Ring Road were limited to six stories and that beyond was limited to ten stories. Showing the limits of planning restrictions in the rapidly changing city and the power of economic might over regulations, many high-profile buildings constructed in the ensuing decade proceeded to ignore these restrictions in audacious fashion, most notably the fifty-two story Jinguang Center and the fifty-story Capital City Building. Forced to react instead of determining trends, the 1993 comprehensive master plan revised the height restrictions to consist of 10 stories within the Second Ring Road and no height restrictions in, around, and beyond the Third Ring Road.

⁷² Gaubatz 82



Figure 13: In this photo taken from the CCTV Tower looking east over the center of the city to the East side, high rise buildings on both the East and West sides of the Second Ring Road in a "bowl" shape. SOURCE: Author

The practical result of this arrangement was a “bowl” shape of development, with low-rise dominating the center of the city, trivializing its importance and draw as a center as skyscrapers and high rises rose along the Third Ring Road, creating a massive beltway of economic activity that left central infrastructure underutilized and made the Third Ring Road one of the most congested roadways in the city. The development encouraged by these height restrictions helped Beijing become a city of rims and edges, instead of one of centers. The promotion of the periphery and suppression of the center at the hands of zoning created an environment that would prove a transportation nightmare as the vexing problem of how to transport millions of workers through or around a natural center to multiple clusters of jobs along the edges of Beijing became apparent.

Jianguomen and Finance Street: Two Failed CBDs

Often the most visible landmark in many Western and colonial cities, a Central Business District (CBD) consisting of high-rise buildings became a marker of a robust urban economy and of cultural prestige. The cluster of successful business and economic capital symbolizes the economic might of the city itself. Yet in the urban landscape of modern Beijing, no true CBD can be properly defined. Aspiring to become a world city and emulate the great metropolises of the West, Beijing aspired to create a proper Central Business District in the 1992 plan, yet amidst the greater cultural trend of decentralization, sectorial specialization, and bifurcation of the city along the lines of domestic and international, no true CBD emerged out of the planning efforts of the city in the 1990s, and two separate business centers emerged, neither of which can lay claim to being truly central or iconic and failed to truly differentiate themselves from the other high-rise districts around them.

The emergence of Beijing as an important business center with a large demand in the new real estate market for office development made the lack of a CBD in early 1990s Beijing a problem. Planners in the city, believing that scattered, diffuse office buildings were inefficient and difficult to organize with regard to transportation, communication, and other services, suggested that a CBD should be planned in order to accommodate future growth in the city. Yu Zhou, former Beijing urban planner and expert on the phenomena of urban globalization in China, was part of a research group at Peking University in 1989 that predicted that one of the three retail centers in the old city would mature into Beijing's CBD, but this did not come to pass for a variety of reasons. Zhou attributes this to the conversion of the Second and Third Ring Roads from normal boulevards to full expressways created barriers for pedestrian access

to the Old City, which is surrounded by the Second Ring Road. The Second Ring Road now stood in the way to pedestrian and bicycle access much as it had in the Republican era when it was the city wall. Combined with the many narrow streets and *hutong* in these central areas that were not conducive to automobile traffic, meaningful access to the Old City, whether by means of automobile, bicycle, or foot, was rendered difficult and unsuitable for large scale development. Combined with the aforementioned height restrictions that prioritized the center of the city as a picturesque monument park, businesses looking to build modern office space shied away from the central areas in favor of outlying districts. All of these factors together meant that any CBD that would arise would assuredly be located away from the center of the city.

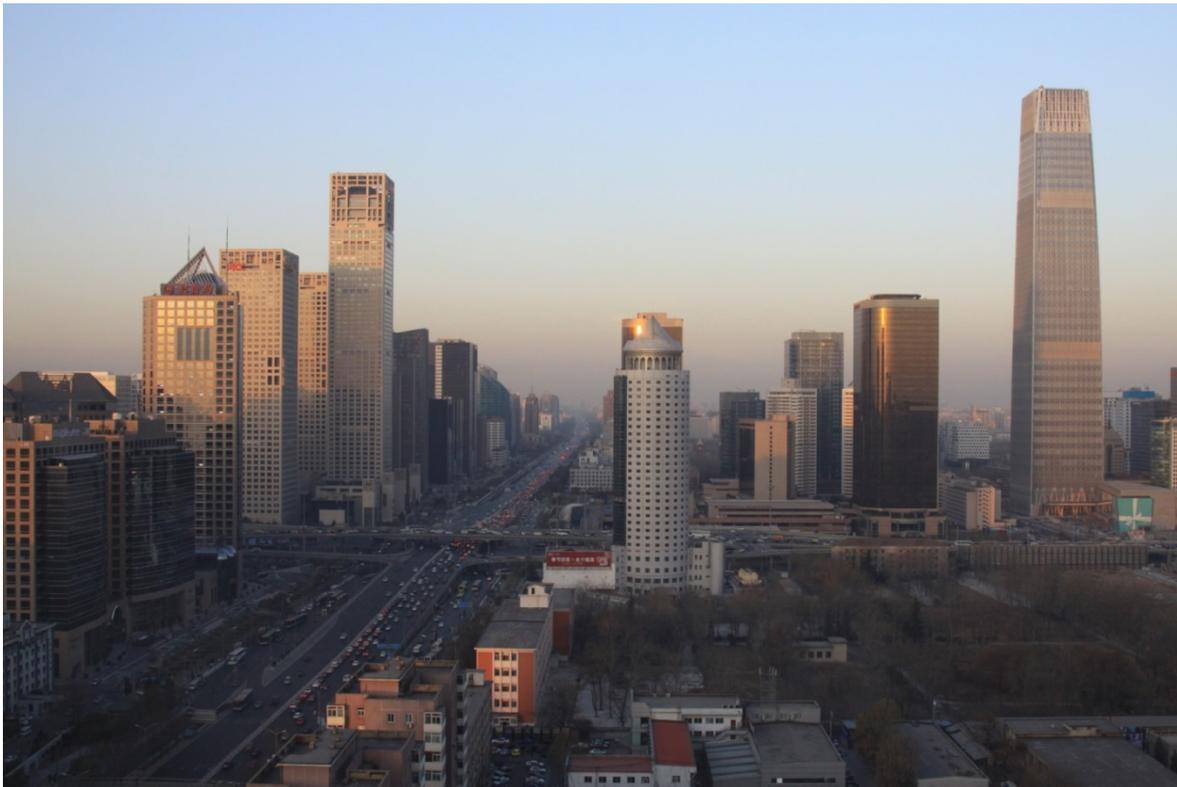


Figure 14: Jianguomen CBD, showing the relatively low building density. Buildings were instead built along the Third Ring Road (the large road on the ground) SOURCE: Wikipedia

This lack of mobility or economic utility in the center led to the Beijing Master Plan of 1992 to designate an area on the eastern side of the city, between the Second and Third Ring Roads, as the Jianguomen CBD. The establishment of this CBD was not one about office building growth of the free-market land reform but about globalization. It was strongly believed amongst intelligentsia in the city that the characteristics of an international city necessitate the establishment of a CBD⁷³. Establishment of a CBD was seen as a natural evolution in a city as large and important as Beijing, a national status symbol that would convey the arrival of Beijing as a preeminent world city. The East side was picked as it was already the location of the embassy district and the international airport, the two gateways from Beijing to the rest of the world. The prestige of address that makes a business district simply could not be constructed overnight via central planning, as the planners found out when in the ensuing years development projects by foreign business ventures, including office buildings, luxury apartments, and expatriate-oriented restaurants and nightclubs indeed clustered in and around Jianguomen, but also in the undifferentiated space around it and along the corridor of the Third Ring Road. A large proportion of the development failed to situate itself into the designated block for CBD development and with the high-rise boom happening in the other neighborhoods around the Second and Third Ring Roads. There was nothing special about Jianguomen to distinguish it from surrounding districts aside from endorsement in the government plan, something the newly reformed real-estate market found unimportant. The planners and city government, not used to working within the in their development, failed to in any sort of incentives, be they a favorable tax code or preferential zoning, to entice developers

⁷³ Attributed to Chinese architect and urban planner Wu Lang Yong from Zhou 434

into their arbitrarily designated block that was indistinguishable in geography and amenities from its immediate surroundings.

Surrounding areas on the Eastern side of the city was not the only competition Jianguomen faced in its uphill battle to establish itself as the economic center of Beijing. A challenger to Jianguomen on the western side of the Second Ring Road, Financial Street, actually predates Jianguomen, going back to the 1980s, and contains most of China's major bank headquarters, including the Bank of China, People's Bank, Industrial and Commercial Bank, Construction Bank, and others. Being established before the land-market reform that established a free real estate market, this concentration of financial capital was driven instead by administrative priorities and preferences of the national government. Financial Street grew up around the headquarters of the Bank of China, which as a national-level apparatus of the government had considerable autonomy in locating its offices under the planned economy and chose a site that was close to the numerous national ministries, bureaus and departments that the bank regularly did business with⁷⁴. Government bureaus are more important business partners for banks, which are still largely state-owned, than private capital, as banking in China is an apparatus of public administration used to fund megaprojects instead of a source of loans for private capital. Other banks and financial institutions followed suit of the Bank of China and located at this spot and eventually government representatives from outlying provinces also picked this location as their business center of choice. The location is an easily accessible one, being the closest Beijing had to a multimodal transportation hub at the time with both expressway and transit access; the intersection of the Fuxing Road Expressway, under which

⁷⁴ Zhou 434

Line 1 of the Subway ran, and the Second Ring Road, under which Line 2 of the Subway ran just to the west of this cluster of bank headquarters, decidedly more accessible from the rest of the city than Jianguomen, but Finance Street never expanded beyond a banking center, becoming a single-industry center, consistent with the scheme of sectoral specialization proposed in the 1982 and 1983 plans. Good point.



Figure 15: Mid-rise bank headquarters make up almost all of the office space along Finance Street. SOURCE: Wikipedia

Between the Jianguomen Central Business District and Finance Street, Beijing claims to have two Central Business Districts that held worldwide institutions, but neither have the gravitational pull of commerce that is expected of a CBD. Finance Street and Jianguomen are merely loosely defined nodes of economic development in the greater scheme of sectoral development that has come to dominate Beijing. Jianguomen is an undifferentiated part of the

wider “international city” of Eastern Beijing dominated by hotels, nightlife, luxury residential high-rises, high-end shopping, and foreign corporate outposts sprawling along the Third Ring Road. Finance Street, likewise, is merely a concentration of administrative bureaucracy that happens to focus on a more financial aspect of said bureaucracy, nestled amongst similar sectors in Western Beijing devoted to other public bureaucracies, including government offices and institutions of higher education. Jianguomen was created as lines on a map by idealistic city planners, but a free market real-estate market that valued building height, frontage along the Third Ring Road, and proximity to the existing foreign enclave of the Embassy District overrode any theoretical notions and merely absorbed Jianguomen into their larger corridor of high-rise construction. Likewise, Finance Street was shaped by the forces of autocratic administrative and bureaucratic convenience, free from pressures from planners or the free market. The clashing visions of urban planners, real estate developers, and bureaucratic organizations created the sprawling, decentralized blanket of commercial development that has come to characterize modern Beijing and doom both attempts at establishing a proper CBD from taking root. Are we clear how this keeps us focused on transportation?

Addressing Congestion

Beijing’s rapidly expanding urban form has created new challenges in moving its people around, with longer distances than ever separating people’s homes from their jobs. The government forces planning transportation in the city have recognized the need to create a modern transportation infrastructure in order to ensure the mobility needed to secure Beijing’s continued economic growth. Beijing’s large geographic footprint has meant that transportation infrastructure has had to be built in unprecedentedly large amounts at very rapid rates of

construction. This boom in infrastructure construction has also been used by the government to promote new development and shape it further and further away from Beijing's historic center. As the city has grown, it has become rapidly congested, and government has been using transportation, whether it is roads or subways, to move more and more development to the outskirts of the city, and has neglected to build up infrastructure in the congested central areas. Based on the actions taken, the government seems to think the answer to saturated transportation infrastructure is continued dispersal and movement of development farther and farther out into the suburbs, yet congestion continues to spread around the city, instead of the central areas being relieved as outward expansion on the back of transportation continues.

Rise of the Automobile and decline of the Bicycle

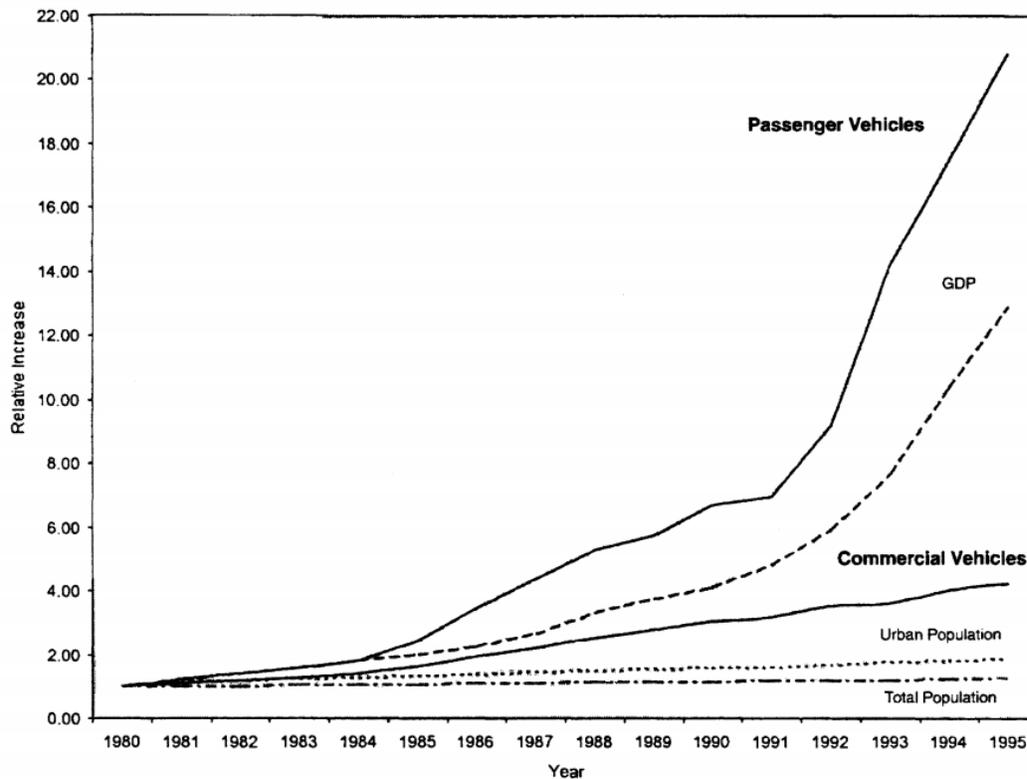


Figure 16: Rise in the number of passenger vehicles on the road compared to other indicators from 1980-1995. There is a strong correlation between rise in GDP and a rise in passenger vehicle purchases. SOURCE: Kevin Riley

In the decades since 1978, Beijing has gone from a city with few cars to one clogged with them. As China moved into the 1990s, its economic growth skyrocketed as reforms loosened up. Aspiring to become a modern developed economy the manufacturing sector began to be realigned towards higher-value products. As part of this shift, in 1994, the government set out to promote automobile manufacturing as a key tool of economic development and started encouraging individual car ownership.⁷⁵ Accordingly, automobile production skyrocketed with rising income, eventually culminating with China overtaking Japan and the United States as the world's largest car manufacturer in 2009.⁷⁶ Alongside this policy geared towards new automobile manufacturing came a mass relaxation of restrictions on private car ownership in an effort to promote domestic consumption. The effects on the relaxation of restrictions on purchase in the new free car market were immediate: From 1991 to 1996, private purchase increased at an annual rate of 28.1 percent on the back of a rapidly rising GDP and government-encouraged consumer spending⁷⁷. Into the 1990s and 2000s this rapid growth has continued with rising GDP and as of 2013 China has become home to 93 million cars, of which more than 4 million call Beijing home akw⁷⁸. This rapid rise in automobile purchase and use as directed by government and business has been compared to the fervor with which the United States adopted the car in the first half of the Twentieth Century⁷⁹.

⁷⁵ Bufton & Lorenz 144

⁷⁶ Rhoads 110

⁷⁷ Riley 491. Also see Figure XX for contextualization of automobile growth in the early Nineties

⁷⁸ Collins & Erickson

⁷⁹ Business Ethicist Martin Calkins has highlighted today's transition to cars in China as manifesting "*the same sort of lack of foresight, criticism, and imagination by political leaders and the same sort of excessive self-interest on the part of automobile industry executives that we saw in America during the twentieth century(159)*"

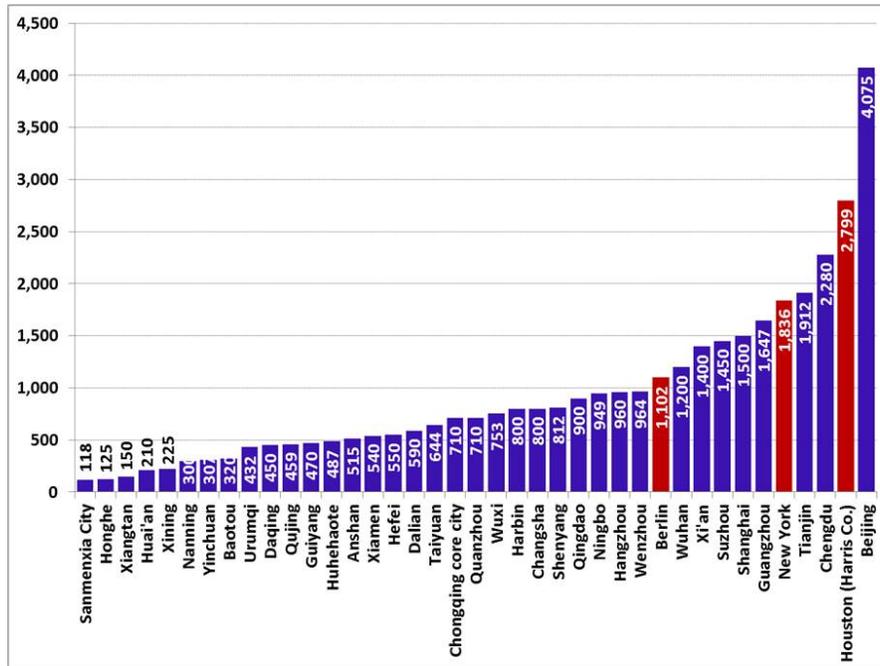


Figure 17: Comparing number of passenger cars on the road in 2013 between multiple cities. Beijing has the most cars of any city in the world. SOURCE: China SignPost

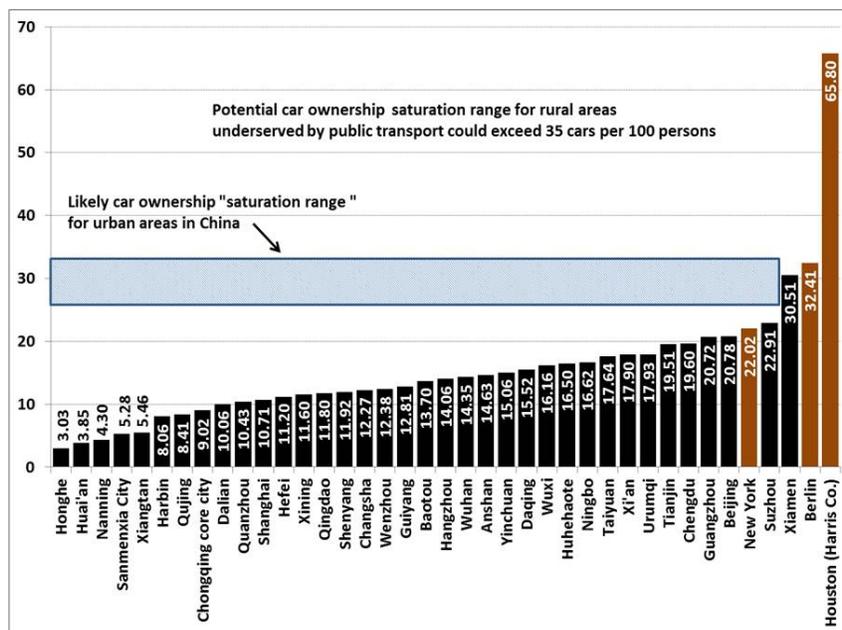


Figure 18: Passenger car ownership per 100 people in 2013. Beijing is fast approaching Western-level ratios of car ownership, with almost as many cars on the road per person as New York. SOURCE: ChinaSignPost

Beijing has become China's largest car city in absolute terms and the third largest in per capita terms. As of 2013 the city now has almost 45% more cars than Houston, Texas, and a per

capita ownership rate just below that of New York City.⁸⁰ Much of this automobile use has come at the expense of the bicycle, which is no longer the dominant form of transportation. The reasons for middle-class Beijing adopting the car while simultaneously discarding their bicycles are multifaceted. The same aspirations towards imitating Western modernity that encouraged the attempts to create a proper CBD in Beijing have also fueled the city's love affair with the automobile. Cars have become a status symbol for middle class Chinese, with brand names such as BMW⁸¹ becoming associated with economic success and social sophistication, while bikes are seen as an antiquated, low-class form of transportation for the poor, the old, and children⁸². A more powerful impetus towards this modal shift is the practical concerns that have arisen from Beijing's gargantuan scale and long distances. In large, diffuse Beijing, its denizens, especially those of the rapidly emerging middle class, routinely have to traverse across the whole city to get to work. The aforementioned relocation of factories and older low-rise housing from inner city neighborhoods to the suburban outskirts in order to make room for luxury high-rise apartments and large office buildings ensued as part of government and real estate developer-directed urban renewal led to increased travel distance for the average city dweller beyond the 10 kilometers thought of as feasible for a daily bike ride, making bikes less useful for the simple home-to-work trips that used to dominate. Many academic and professional workers the author interviewed told stories of lengthy commutes by bus that exceeded 90 minutes, crossing the city for long distances before they purchased a car. One person even took a taxi every day before they purchased a car, remarking that she abandoned

⁸⁰ Beijing's 20.72 cars per 100 people is just shy of New York's 22.02 and its 4.075 million cars dwarfs Houston's 2.799 million. See Figures XX and XX for comparison with other cities (Collins & Erickson)

⁸¹ When asked on a dating show on Chinese television in 2010 whether she would enjoy a bike ride, a contestant Ma Luo infamously responded, "I'd rather cry in the back of a BMW than smile on a bicycle." (Wetherhold)

⁸² Rhoads 112

use of her bicycle after getting her first job after graduating from university. This proved a story not too uncommon, given the transition from the spatially compact university campuses to the sprawl of commuting within the greater city⁸³. The long distances and serpentine routes taken by public transportation from district to district simply also made commutes by car much more practical.

Bicycles (or increasingly, electric bicycles) retain a foothold in the transportation around the city but unlike in the West where cycling has hit a renaissance amongst the professional class as a chic way to make an “eco-friendly” fashion statement, bicycles have mainly remained as the vehicle of those who do not have access to a car and ride out of necessity, namely children, the poor, the elderly, and students. Associations with these groups have given bicycles a decidedly un-trendy reputation. Surveys of students on the campus of Capital Normal University used a variety of adjectives to describe bicycles, including “childish”, un-classy”, and “old-fashioned”. Even among students use of the bicycle is falling, as many now prefer to walk, utilize public transportation, and ride taxis before being seen on a bicycle.⁸⁴

⁸³ Capital Normal University Faculty Interviews May 2013

⁸⁴ Capital Normal University Student Interviews May 2013

Roads and Traffic



Figure 19: Bumper to bumper traffic on the 2nd Ring Road in Beijing. Scenes like this are more or less a daily occurrence during rush hour. SOURCE: Reuters

With the explosion of automobile ownership, the city has been road capacity, but not at a pace that is keeping up with the rising tide of traffic. Many major roads have been widened into large boulevards with multiple lanes of traffic, and all of the Ring Roads have been converted to expressways, but due to a lack of road improvements in the preserved, obsolete city center, direct trips from point to point are often impractical and traffic is funneled into the Ring Roads, making them even more congested. The roads themselves are being built to encourage outward expansion as well, with radial expressways starting at the Third Ring Road reaching deep into the hinterland and the recent constructions of the Fifth and Sixth Ring Roads, reversing speed gains from faster travel as distances continue to increase.

These wide boulevards and Ring Road expressways, while facilitating movement of the automobile, have become barriers in mobility to pedestrians and bicycles. Crossing these streets on bikes or foot is often very difficult, due to their width, speed of traffic, and a general

lack of respect for traffic laws. Pedestrian overpasses are semi-frequent, but this still does not stop the roadways from inhibiting interaction between neighborhoods on different sides of the street. Wordy A dedicated bicycle lane separated by a curb from the main traffic lines are often present, but cyclists are often forced to share lanes with cars as bike lanes become obstructed by parked cars, stopping busses, or even food carts as the space gets re-appropriated for other uses.



Figure 20: A bicycle lane on a street in Beijing in 2013. A truck and multiple cars are obstructing the lane. Note the clear lane marking underneath the grey car. Sights like this are commonplace as Beijing becomes more congested. SOURCE: Author

Despite all of this capacity-building, traffic congestion has become a severe problem in Beijing, to the point where the city government is taking drastic measures to limit the amount of cars on the road. In attempts to reduce automobile use and encourage usage of other forms of transportation, Beijing implemented a road space rationing scheme starting in the months

preceding the 2008 Olympics where on one day a week, certain pairs of license plate end numbers are prevented from driving within the 5th Ring Road between 7 AM and 8 PM⁸⁵. This policy has seemed to have little effect on alleviating congestion as the amount of total cars on the road continues to increase⁸⁶. Additionally, license plate numbers are not distributed evenly, leading to some days where traffic has actually gotten worse⁸⁷. The other major initiative has been the implementation of a car license plate lottery for new vehicle registrations. Starting in 2011, a limit of 240,000 new registrations annually to would-be drivers, and a limit of one car per person was implemented, with new licenses awarded via lottery⁸⁸. This has slowed the rate at which people have been able to grow the pool of automobiles, but has also placed the car on a pedestal, where it has become even more desirable, with people relishing winning the lottery and purchasing the car they desire⁸⁹. Ironically, the government continues to see further expansion as a potential cure for the severe traffic problems the city faces, despite the fact that it is the large travel distances that induced many Beijingers to desire cars in the first place.⁹⁰

⁸⁵ Add this to bibliography <http://www.bjtgl.gov.cn/publish/portal0/tab41/info31614.htm>

⁸⁶ Deputy Director Wen Jemin of the Beijing Traffic Research Center has noted in 2013 that, "The average weekday congestion time in the first half of the year was 100 minutes, 30 minutes more compared with the same period last year [2012]." Additionally, The weekday traffic index - a measurement for road congestion ranging from 0-10 - rose 6.4 per cent in the first half of the year compared with the same period last year - hitting 5.0. The higher the index is, the worse the congestion.

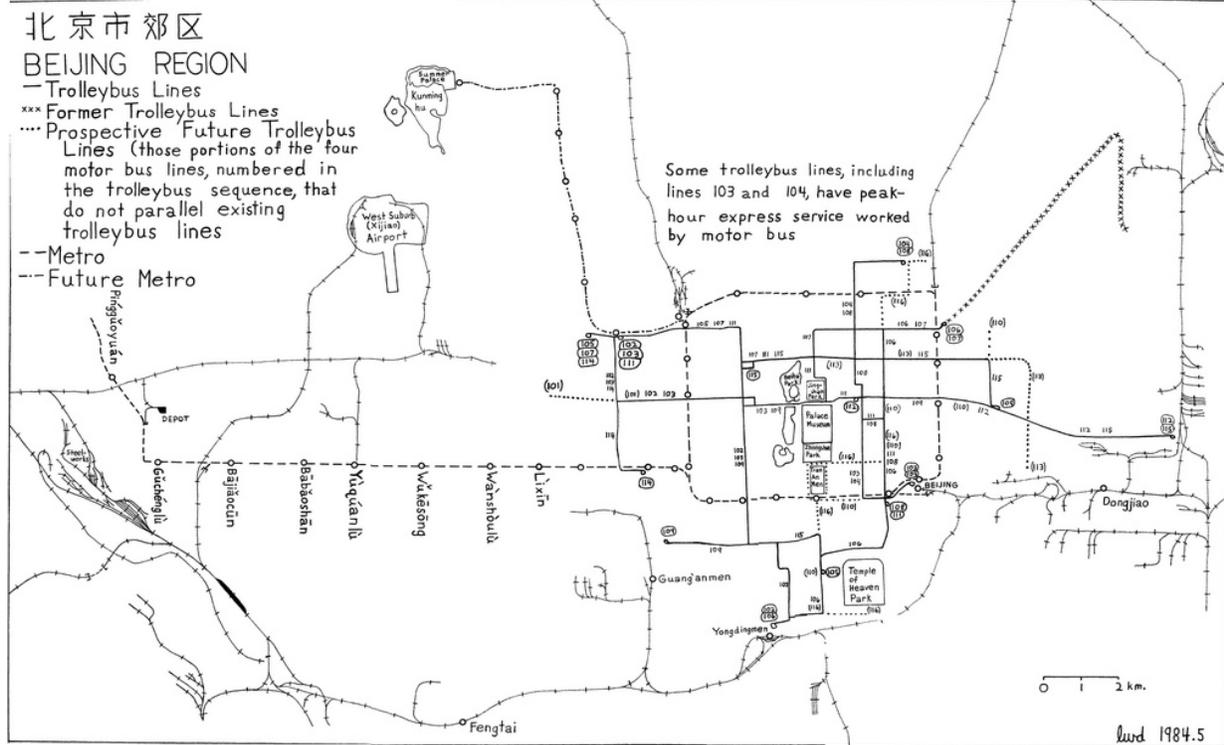
⁸⁷ Wen also noted "The worst days are normally when cars with tail numbers of 4 and 9 are banned from entering the city centre. During rainy and bad weather days, or before and after major holidays, traffic congestion is particularly bad. On these days, traffic jams can last more than three to four hours and even longer." http://www.china.org.cn/china/2010-12/23/content_21604345.htm

⁸⁸ Same as 54

⁸⁹ A colleague of mine likened his monthly tuning into the car lottery to going to the horse races and hoping to win a bet, his obsession over getting the opportunity to buy a car having become so strong.

⁹⁰ "Amid others measures, Beijing will also improve city planning, speed the development of some outskirt areas and invest more on public transport." Same Xinhua article with regards to continuing problem of congestion in Beijing

Beijing Subway



迪利來 © 1983, 2012 Leroy W. Demery, Jr. 出目里利呂井

Figure 21: A recreation of a 1983 map showing the trolleybus network plus Lines 1 and 2 of the Beijing Subway. SOURCE: Leroy W. Demery Jr.

The largest and most successful project to dissuade the current pattern of excessive automobile dependence in Beijing has been the building of a comprehensive rapid transit system in the city. The grand plan of the Planners of the 1950s and 1960s had been derailed by political instability and by the time stability was re-established by Deng Xiaoping, the institutional enthusiasm towards an extensive subway system as a crowning achievement of socialism had passed. However, with freedom of movement came the opening up of Line 1 to the general public in 1981. The city also used the newly established stability and investment to complete Line 2, the planned loop line under the Second Ring Road, which was completed in

phases between 1984 and 1987.⁹¹ Additionally, eastward extensions to Line 1 opened up in 1992 and 1999, bringing subway service to the embassy district and the Jianguomen CBD as development accelerated on the east side of the city. Throughout the 1980s and 1990s the subway system remained static with these two lines, an east-west corridor and the inner city loop, and 53.5 kilometers of track, but ridership still grew at an impressive pace with Beijing's massive population growth and the lines providing important transportation links for those who lived near them. Infrastructural spending during this period was focused mainly on expanding road capacity to accommodate the contemporaneous automobile boom.

⁹¹ Beijing Subway Company Limited

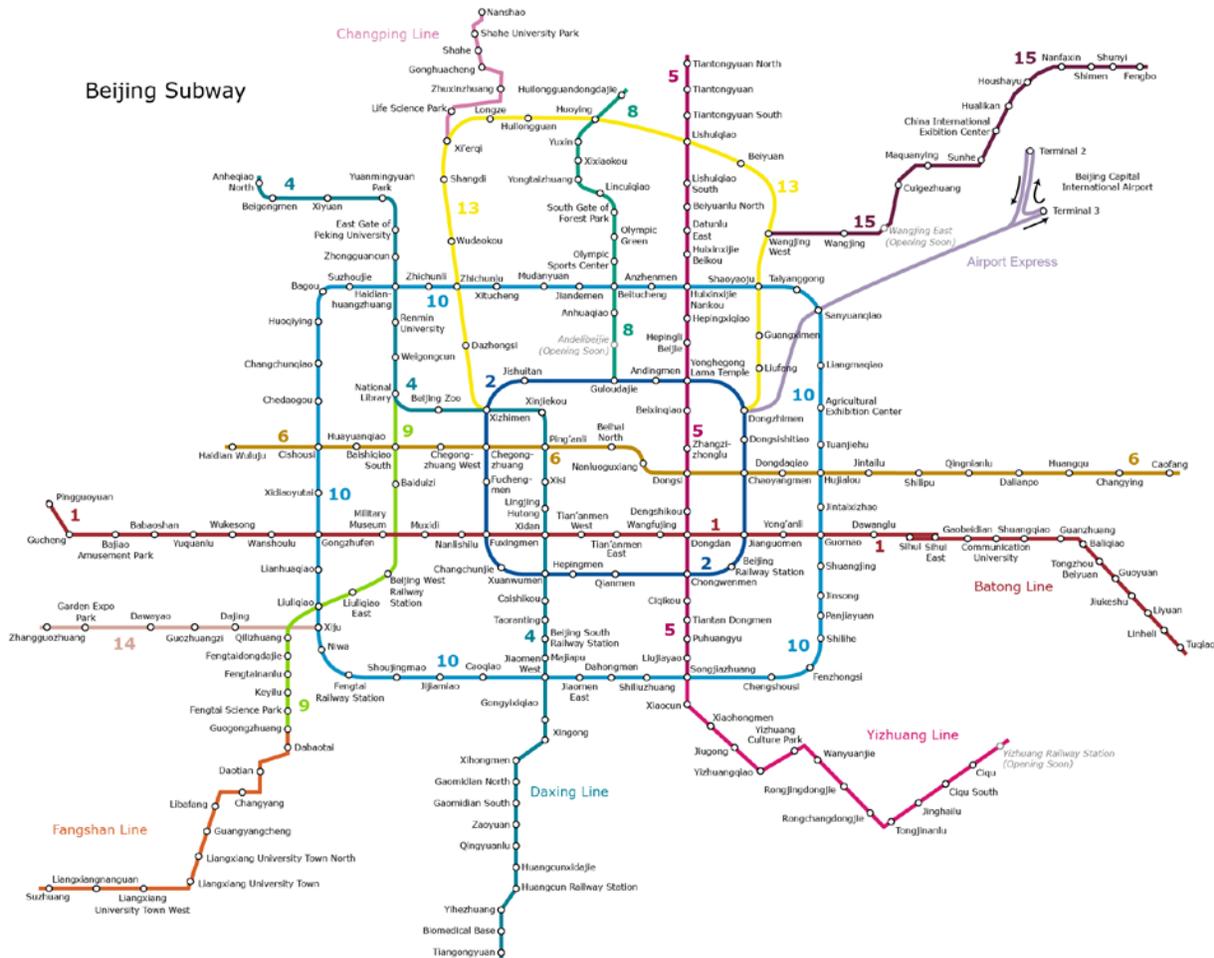


Figure 22: Beijing Subway map as of 2013. Note the extensive coverage in the suburbs beyond Line 10, but relatively sparse coverage inside of Line 2. SOURCE: Wikipedia

In 2001, Beijing was awarded the bid to host the 2008 Summer Olympics, and with this came an infrastructural push to rapidly expand the subway network in preparation for the Olympics, as well as looking beyond to solving Beijing’s increasing problems with automobile congestion and help placate demand to continue expanding the city’s footprint to match its booming population. In the 12 years from 2001 to 2013, 403.33 kilometers of new subway track opened for a total of 15 new lines, giving Beijing the largest rapid transit network in the

world by track miles, surpassing New York City and Shanghai⁹². Beijing's now-robust subway system enjoys abundant ridership, but it has not eaten into the share of traffic in the city as the amount of automobiles continues to grow. Part of this problem is low speeds and long travel times on the subway, even compared to the congested streets. The network, while expansive, is sparse, and there is only one spot in the whole system (Xizhimen), where more than two lines meet. This poor connectivity means journeys often require multiple transfers, most of which are 100-200 meter walks in the poorly-designed stations. There are no cross-platform transfers in the system. Combined with the many stops a train makes over the long distances the lines travel, a journey by subway can often be more than twice as long on the subway as it is by car. As such, those with cars continue to drive and the journeys made on subway are disproportionately made by working-class Beijingers, creating a situation where the wealthy car-owning class is uniquely privileged in being able to cross the sprawling city in a reasonable amount of time.

The expansion of the subway network after construction was a missed opportunity to correct some of the planning ills plaguing Beijing. Absent from this network is as any effort to use this new rapid transit network to densify the city and create nodes of connectivity, which can act as conduits for denser development and solve the problems of dispersed journeys and large geographic footprint. Most of these new lines extended far into the suburbs, often being built out to vacant land in order to entice real estate developers to continue building farther and farther out from the city. Additionally, few new lines were built within the core of the city, with lines 4 and 5 skirting the edge of the old city on north-south routes and Line 6 paralleling

⁹² Beijing Subway Company Limited

Line 1 as an east-west corridor to the North. This paucity of central city lines parallels the same shortcomings of the road network. Likewise, crosstown traffic, which is more common than not given the off-center commercial hubs and diffuse pattern of economic development, is disproportionately forced onto the two loop lines 2 and 10. Indeed, upon being completed in 2013, Line 10, the outer loop around the Third and Fourth Ring Roads, has become the most heavily-ridden line in the system, surpassing Line 1, which formerly bore the brunt of east-west traffic in the city⁹³.

⁹³ http://news.xinhuanet.com/fortune/2013-05/06/c_124667054.htm

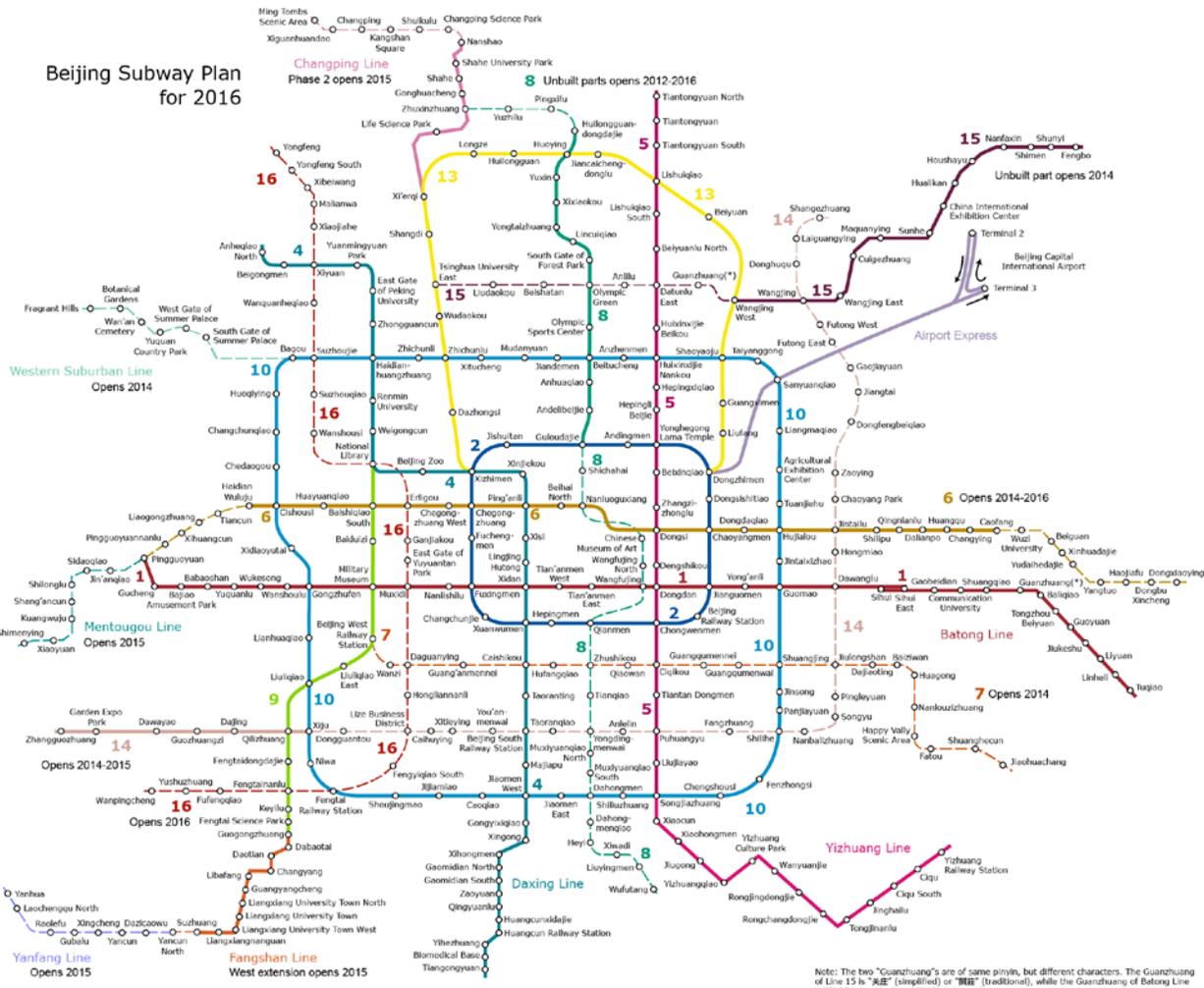


Figure 23: The Subway system with proposed extensions for 2014-2016. Only one new line is expected within the city center. The rest are peripheral lines or suburban extensions. SOURCE: Wikipedia

Beijing is not finished building subways, and many are still currently under construction. The Municipal Transportation Commission of Beijing is committed to meeting increased travel demand with public transportation⁹⁴. By 2016, the government plans to have 19 lines totaling 561 kilometers of subway built. Some of these new lines are dedicated to improving coverage and station density within the Fourth Ring Road, which in the increasingly sprawling,

⁹⁴ Li Xiao Song, Deputy Director of the Municipal Transportation Commission was quoted as saying that "The fundamental way to meet the travel needs is to rely on public transportation," when announcing a number of transit projects. <http://zhengwu.beijing.gov.cn/gzdt/bmdt/t1151969.htm>

suburbanizing city is getting known as the new definition of Beijing's inner core, but most of the planned expansions are continued extensions deeper into the suburbs alongside a further new peripheral line (Line 15). Further densification of the subway coverage within the heart of the city is not occurring, and no new hubs in attempts to make easily accessible centers are being planned. Beijing's subway lines are continuing to be laid out in a grid-like pattern to attain maximum spatial coverage on the large, expansive grid that is Beijing's surface layout, and this is not conducive to creating dense centers. The continued development of the subway is only continuing to encourage further far flung sprawl, and the city will in all likelihood continue its expansion out instead of up.

Needs summary paragraph

Conclusion

Synthesis

Time Period	Pre-existing Urban Template	Enactors of Change	Changes in Urban Form	Transportation innovations	Consequences
Republic of China	Compact, walled Imperial Capital	Chinese merchants, Western banks, weak municipal government	New gates in walls, decentralization of commercial areas to surround Inner City	Paved roads, trolley lines, Rickshaws, limited automobiles & bicycles	Imperial City lapses into obsolescence, "hierarchy of mobility" between elites and commoners,
Maoist China	War-torn infrastructure, neglected former capital	CCP, Beijing Municipal Urban Planning Commission, state industry/bureaucracy	Demolition/expansion beyond city walls, compartmentalization via work units,	Network of radial arteries and ring roads, widespread bicycle use, first subway line	Short commutes, little interaction beyond local areas, Institutional control of individual movement
Post-reform China	Expanse of self-contained work units connected by boulevards and ring roads	Real estate developers, Municipal Urban Planning Commission	Continued expansion, suburbanization, sectoral specialization of land use/economic development, decentralization of living/working patterns	Expressways, comprehensive subway network, automobile culture	Long commutes and congestion issues, new "hierarchy of transportation" between classes

Decisions made in urban form through all three eras of modern Beijing history, the Republic of China, the Maoist state, and post-Reform era, had a collective effect on the methods of mobility in the modern city, the evolution of which is summarized in the chart above. The collective forces of compartmentalization, sectoral specialization, decentralization, and urban sprawl have come together in Beijing to make a city that faces challenges in connecting the residents of its dispersed and isolated residential districts to jobs in similarly, dispersed, isolated commercial and industrial districts across the wide flat basin that has come to house Beijing.

At the heart of all of these changes is the systematic deconstruction of a coherent center of Beijing, creating instead a city of edges and peripheries. The existing center has been frozen in the past –not even acting as a coherent axis for transportation or an underground hub, much less a center for the city. This lack of a true center of business activity has led to a city that prefers to expand out instead of up, organizing new districts of activity in concentric rings moving outward instead of intensifying existing ones inward.

This behavior of development in Beijing can be traced back to the physical compartmentalization of the era by the layers of walls and decisions in the Maoist era to expand industrial development into the rural periphery of the city. The remaining antiquated, relatively-untouched city core was preserved as a monument to power and cultural heritage. Subsequent reuse of this older area for monumental and touristic uses created a “hollow core” that houses monuments, cultural institutions, and residents but not much in the way of the commercial or industrial economic activity that the city revolves around. With the marginalization of the center, the peripheral neighborhoods along the Moscow-inspired ring roads became the location where Beijing’s economic fortunes bore fruit in a dispersed, decentralized manner, though this pattern echoes the development of multiple, dispersed shopping districts around the Inner City wall in the Republican Era. Alongside abandonment of the core of the city as an economic center, creation of a new center during the era of Maoist attempts by the state to remake Beijing’s urban fabric did not take place either, with the *danwei* and residential microdistricts instead creating a patchwork of small, compartmentalized communities that only built up networks of human circulation within themselves, with a center once again neglected. This form of peripheral development continued to take place in the

“bowl” of commercial high-rise development observed around the concentric Ring Roads, a consequence of government zoning that restricted height, enticing developers to build out on the edge.

Continued geographic expansion and sectoralization is the other major issue behind Beijing’s current situation. A concentric network of ring roads built to avoid the center and a set of long, multilane, freight-oriented east-west boulevards designed to connect the scattered, insular *danwei* during the Maoist era has created a streetscape that has neglected compact scale, further diffusing population and economic activity and creating an array of spatial barriers to effective navigation by the pedestrian when economic activity re-integrated post-reform. The long distances and lack of physical integration between adjacent areas allowed the automobile to take root when economic conditions allowed for their proliferation. Aided by building-height restrictions and encouragement of sectoral specialization in favor mixed-use zoning, Beijing real estate developers responded in kind and expanded the city outward rather than upward, continuing to increase distances between homes and jobs via a plain of endless sprawl. The wide geographic area across which homes and jobs are dispersed creates long travel times. Moving anywhere becomes a chore in such a large city.



Figure 24: Undifferentiated, centerless Beijing sprawl as seen from the CCTV Tower looking Southeast. The city is continuing to expand farther and farther out. SOURCE: Author

In order accommodate the large, sprawling, inefficient, un-centered city created by these forces, a large, sprawling, transportation infrastructure is being built by resources harnessed en masse by the totalitarian state, but this is inducing as many problems as it is solving. The outward spread of the metropolis has merely continued as far flung suburbs pop up on the ends of expressways and subway lines, continuing to feed into the almost immediate congestion that arises. The expressway network, road widenings, and a newfound embrace of the automobile have helped launch Beijing's economy and infrastructure into the modern era, but this has come at a cost as traffic jams have become a regular occurrence in the city and the amount of cars on the road has rapidly met road capacity. A subway system is supposed to

meet the needs of those unable to afford or obtain a car, but the large distances involved make travel times excessively long, creating a class-based dichotomy in mobility between those who can afford to drive and who cannot. The end result is a massive, sprawling city where the quality of life is deteriorating. Long commutes, high levels of smog, and chronic congestion, now plague Beijing, all symptoms of an overcrowded, decentralized, sprawling, automobile-dependent city.

Is Beijing too Big?

Beijing continues to accumulate expenses building infrastructure to meet a city that seems to never end, and the trajectory still seems aimed towards continued outward development. All of this expansion and decentralization has been pursued in the name of economic growth, and by and large Beijing has been successful, along with the rest of China. Subway lines and expressways are being built out onto virgin lands far from the center, inducing further development themselves in a city that keeps growing to accommodate the millions of migrants coming from all over China in search of economic opportunity. The city now has 6 ring roads, with the farthest extending more than 20 kilometers from the city center. Newly opened Subway Line 15 extends past the 6th Ring Road to the far-flung suburb of Fengbo, demonstrating how Beijing's fringe continues to expand with no end in sight. Perhaps it is impossible to keep a city with a population as large as Beijing as orderly, centralized, and compact as is ideal. When a city adds more people in the pursuit of economic activity, it must find places to house these people. Beijing might just simply be too big.

In order for Beijing to reform itself into a denser, more cohesive city, it might have to take steps to curb the rapid pace of economic and population growth within the city and focus

on serving properly those who already live there. To some degree, this approach is already being taken. The Chinese government since 2000 has focused economic development efforts on the economically depressed provinces of West, Northeast, and Central Plain in an effort to spread China's newfound economic prosperity beyond the wealthy coastal cities (Beijing included)⁹⁵. Interior cities such as Chengdu, Xi'an, and Heilongjiang are now experiencing the growth exhibited by Beijing, Shanghai, Guangzhou, and Shenzhen a generation ago in an attempt to deflect China's economic growth away from the overcrowded coastal cities and onto these underdeveloped regions. What remains to be seen is whether or not these cities repeat the same mistakes as Beijing, or whether government and business cooperate to find a new way to accommodate rapid urban growth on top of the existing urban structures of these cities without over-expanding themselves and hindering seamless mobility.

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⁹⁵ The “China Western Development Plan” dates to 2000, the “Revitalize The Old Northeast Industrial Bases Plan” dates to 2003, and “Rise of Central China Plain Plan” dates to 2004. They each envision different economic roles for each region, but all focus on urban growth. (China State Council)

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