

**BEIJING 2008: TRANSPORTATION NETWORKS TRYING TO CATCH UP WITH THE CITY**

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## INTRODUCTION

With Beijing preparing to host the 2008 Olympic Games, there are questions about the Chinese capital's capacity to deal with a real transport crisis as the date approaches; stories in the Chinese and international press constantly report that Beijing is too congested, that there are too many cars and not enough subways or fast buses! It would seem that Beijing's transport networks are trying to catch up with the city, as if they can't keep up, as if urban development was outstripping transport development, in particular track-based systems such as subways or suburban railways. Yet, local authorities have been boosting their efforts for the last few years to fill the gaps, to catch up: principles of a new public transportation oriented strategy were recently explained in the Transport Construction and Traffic Management Plan – Beijing's transport strategic plan for the Olympic Games released in 2002<sup>1</sup>.

To understand the challenges that Beijing has to face currently regarding its transportation system, we need to examine the links between city and transportation and to look at urban mobility in contemporary Beijing. Let's not forget that we are dealing with a city in transition, a city that in almost 25 years has experienced major changes both in the mechanisms of its growth and in the organisation of its lifestyles; in this transition, there is a visible break, or at least a problem of coherence, between the needs of the city and the needs of transport.

## TRANSPORT NEEDS, URBAN NEEDS

Beijing is a city that might be described as "post-Maoist"; a city that still bears the marks of the reforms introduced in the late 1970s and early 1980s; a city that is emerging from one system, the Maoist system, and starting out on the road to a new system, which is still being defined, the "post-Maoist" system. Over the last 25 years, Beijing has slowly adopted the functions of the modern metropolis; and the emergence of this metropolis has been characterised in particular by an explosion in urban mobility; let me explain.

In the early 1980s, Beijing was still closed to regional migrations and to the great flows of merchandise, a city organized by the work units – danwei, in Chinese. The work unit was the basic element of the Maoist principles for the organisation of urban life: it provided city dwellers with work, and accommodation and services, usually within the same space, to such a degree were lifestyles and production methods dominated by the rules of proximity (Bjorklund, 1986). In conditions where services, jobs and housing were all very close together, daily travel was very limited both in frequency and distance. Under the impact of the reforms, the partial disappearance of the work unit model led companies to withdraw gradually from involvement in personnel accommodation. In addition, the reorganization of the labor market fostered greater professional mobility, steadily eroding the close ties between individuals and their work unit. In the meantime, massive housing development programs in the suburbs, while jobs had remained concentrated in the city center, led to a rapid suburbanization process (Wang and Zhou, 1999). The freeing up of regional population movements and the gradual disappearance of the work units, mobility came to Beijing: population levels and products began to increase substantially.

In the transition period, the rising flows of people and goods raised questions about traffic spaces, about building or rebuilding the city around this new imperative: i.e. the need to facilitate movement; a necessity, but also a novelty, in Chinese approaches to the city. Although the explosion of mobility paralleled the process of metropolization, this does not mean that the networks that support mobility found their place quickly; there was trial and error, doubt, exploration, all kinds of experimentation. At the beginning of the post-Maoist period, bus networks in Beijing had something of a monopoly on transport: they projected the image of a mass transportation service, the reflection of a supposedly socialist society; these bus lines were numerous but inadequate in quality (Sit, 1996).

One of the best examples of the attempt to adapt the transport networks to the new needs of the post-Maoist city was the introduction of company coach services – banche, in Chinese; faced with the deficiencies of an archaic public bus transport system, companies—which were gradually losing their work unit identity—sought to provide a transport service for their employees; a way of preserving the culture of the work unit; these company coach services, operating at peak times to collect employees in the morning and take them home at night, formed their own parallel transport networks alongside the bus lines (Doulet, 2001).

The factors that really brought networks to the fore in the organisation of contemporary Beijing were, firstly, motorised travel and, secondly, the individualisation of urban transport<sup>2</sup>; these two phenomena transformed the way the Beijing city authorities approached the production and management of the transportation networks. We will identify two stages since the early 80s: a first stage until the late 1990s, during which modern networks were introduced into the city and the second phase, more recent, when

the city seemed to have caught up with the networks.

## STAGE 1: TRANSPORT NETWORKS DOMINATE THE CITY

Post-Maoist Beijing was built on an ideology of infrastructure: faced with the necessity of facilitating flows, the municipality of Beijing responded by investing massively in road transport infrastructures. Why this response? Because what was really needed was a quick solution to the concentration of transportation means on a totally inadequate road system; a necessity when most mobility comes through a surface network<sup>3</sup>. So, a concentration of transportation means, but above all a diversification of those means: the company buses and coaches were gradually joined by bicycles, taxis, minibuses, company cars and private cars. This reaction led to an all-road strategy: new roads had to be built and others enlarged; it was at this time that the dynamic of Beijing's road system was set in motion: a dynamic that is still visible today and seems to have profoundly marked the urban forms.

This dynamic is based on the persistence of the Hippodamian layout in the centre and the implementation of a radioconcentric model in the outskirts. The Hippodamian plan is inherited from Imperial times; the centre of Beijing is a grid of great avenues leading to gates at the inner-city boundaries; the Beijing authorities then enlarged the existing roads or cut new ones, as the Maoist authorities had before, under the influence of socialist urban planning; we all have in mind the symbolic significance of Chang'an Avenue which crosses Beijing from east to west.

Interesting examples include the development of Ping'an Avenue: an attempt to reproduce the symbolic and political impact of Chang'an Avenue; the development of this new avenue, which was officially opened on October 1, 1999 for the 50th anniversary of Communist China, involved enlarging existing streets and cutting a large opening through a very sensitive district of old Beijing: the lakes area of Shishahai, with its rich heritage. Despite pressure from preservationists, residents and the press as soon as the official announcement of the project in the summer of 1997, the Ping'an project remains a paroxysmal example that reflects the road development policy of the period (Doulet, 2001).

The radioconcentric layout is linked in a certain way with the Hippodamian plan, but with additional elements: first there are the radial expressways linked to the gates into and out of the city, and second the successive ring roads paralleling the original orbital boulevard, i.e. the road around the Forbidden City at the geometric and symbolic heart of Beijing; today, it is worth noting that Beijing is in the process of building its sixth orbital road! It might be said that Beijing is the victim of the persistence of a model, a paradigm inherited from geomantic culture: a model that has survived consciously or unconsciously in Beijing's decision-makers and engineers.

Paradoxically, the first road developments initially benefited from the use of the bicycle and, in a way, enabled that mode of transport to spread; let me explain. From the late 1970s, cycling became a widespread mode of transport in Beijing, prompting the first stirrings of the emancipation of the individual; the spread of the bicycle essentially coincided with a rise in revenues among city dwellers, the restructuring of the Chinese bicycle industry and, above all, the liberalization of the consumer market. From the late 1970s until the 1990s, Beijingers bought bicycles en masse. With the spread of the bicycle, the municipal authorities responded with appropriate developments: special cycle tracks along roads; the first "hardtop" cycle path in Beijing was laid in 1980... These road developments contributed to the establishment of what might be called a "bicycle network", a network made up not only of bicycle paths but also a dense network of small bicycle repair shops and bicycle parks by subway entrances. In a way, the "bicycle network" was Beijing's first universal network; i.e. the first transport network open to everyone and offering virtually total accessibility; of course, the bicycle's honeymoon period didn't last: the requirements of another, more powerful, system took over in the early 1990s: the car (Doulet, 1994)<sup>4</sup>.

The automobile network has gradually supplanted, through absorption, the "bicycle network", but while the cycle network could be managed through simple and manageable technical solutions, the automobile network requires more complex technical responses. Initially, the automobile system tended to dominate the road network in an exclusive, almost monopolistic fashion: road space quickly became a space for motorised traffic, rejecting other, slower modes of transport; in this context, the road space, the space of speed, in a way became cut-off from urban space, crossing it without really being a part of it. There is no shortage of major avenues that pedestrians or cyclists cannot cross, roads that have become divisions in space.

The roads network in Beijing largely focused on motorised travel, more than any other Chinese city: indeed, with more than 2,5 million motorised vehicles, Beijing accounts for more than 10% of the total national vehicle stock; another figure: from the late 1990s, real household car ownership was four times

higher than the national average (China Statistical Yearbook, 1999)<sup>5</sup>; finally, the number of taxis group from a few thousand in the early 80s to more than 70,000 in the mid-1990s! While the motorisation of travel, in a sense, was a way of adapting mobility needs to the new urban dynamics, it is no less true that, up to the present day, it generated particular problems; these problems—traffic jams, road safety, etc.—are issues that the Beijing authorities are conscious of: in contrast to a quantitative approach to transport systems – get as many vehicles as possible moving in the streets –, a qualitative approach is emerging; it is based on an idea already widespread in other cities: transport networks should contribute to urban development and urban mobility as a whole, and thereby contribute to the quality of city life.

## **STAGE 2: THE CITY IS OVERTAKING THE NETWORKS**

So it can be said that in the late 1990s, there was an awareness of the necessity for the transport networks to serve the city; in other words, to make the transport networks subordinate to the requirements of the city; these requirements were essentially qualitative, since the aim was to meet new demands and new needs, in particular as regards quality of life. The recent period has been marked by two currents of thought on Beijing's transport networks: firstly, the construction of rail networks (subway and suburban trains), and secondly, a review of road developments. While the first half of the 1990s was characterised by the "all car" approach, the late 1990s saw a new approach to urban development, associated with stated sustainable development goals; the municipal authorities, responding to government directives, asserted the need to improve the range of public transport, especially rail-based transport.

From 1998, improvements began on Beijing's railway network, then accelerated, first with the extension of the east-west line, then the development of the first suburban train line and finally plans for the on-going construction of height additional subway lines<sup>6</sup>. This dynamic made it necessary to revise the mechanisms involved in the construction of public transport networks, previously dominated by highly centralised decision processes; in a way, there has been an institutional revolution in the recent wave of construction on the railway network. A very good example is Beijing's first suburban train line, line 13 on the railway network plan: a 42 km long light railway that forms a loop linking the northwestern corner of the city centre, at Xizhimen, to the northeastern corner in Dongzhimen. Firstly, it shows how the municipal authorities have had to adjust to the more open procedures of external partners (banks, real estate developers): a sign that the concept of governance has entered decision making process in the field of transportation planning. Secondly, it shows how the development of one line of the railway network has been initiated to follow, or even anticipate, the suburbanisation of the northern part of the Beijing conurbation, as the line serve fast-growing residential zones, especially Zhongguancun, Qinghe, Huilongguan, Shangdi, Beiyuan, Wangjin (Doulet, 1998).

Alongside the construction of the rail network, the revision of the road development plan is the main element in the new qualitative approach to the transport networks; a roads network previously characterised by a commitment to movement at any cost and the primacy of the automobile, is now subject to a more complex vision involving differentiated development and more advanced management methods. In the city centre, the roads network is taking on several forms and several realities: while expressways multiply, road spaces are emerging designed for slower forms of travel: walking and cycling.

One interesting example is the transformation of the Wangfujing shopping street into a pedestrian zone; an operation that is based on the recognition of the street as a space for strolling in a highly concentrated shopping area, and which implements a particularly strict method of flow control, with tough restrictions on access to the avenue (buses only) and parking provision designed for both cars and bicycles.

In addition to road development operations, legal and technical measures are in progress to regulate traffic on the roads network; these measures largely depend on the availability of advanced technical resources—such as centralised traffic light management—and the introduction of an universal highway code. Spatially, this involves, for example, limiting access to the city centre to certain types of motor vehicles or prohibiting parking on certain avenues or altering public parking provision.

I would also stress one factor: the qualitative phase of network urbanisation that I am describing here is based on a concept that is new in China but is beginning to take form: intermodality; i.e. the capacity of different transport networks—underground or overground, road and rail—to connect together to contribute to overall urban mobility. Although this seems an obvious concept, and although it was announced in Beijing a while ago, it only recently became a reality. In the Beijing's transport strategic plan for the Olympic Games, several axes are emphasised for the improvement of public transport networks, especially with regard to intermodality, including a plan to create park-and-ride (P+R) schemes

in the outskirts: these schemes hold vehicles in special car parks outside the city centre, while motorists are encouraged to enter the city by train or subway.

This concept of intermodality, while still in its infancy, already has its symbol: this is the Xizhimen intermodal station in eastern Beijing, which connects the subway circle line, suburban train line 13 and a certain number of bus routes; this first node in the Beijing network system is still only symbolic, and merely suggests the possibility of a genuine and realistic implementation of the concept of intermodality.

## CONCLUSION

This short and recent history of contemporary Beijing's transport networks raises the question of the dynamic that brings together the needs of the city and the needs of transport; I would tend to say that we are now in a new era, the era of the modern metropolis, which contributes to a combination of the two needs: this is the time when the city as form comes together with the city as movement.

However, we should not go overboard as regards the state of this alliance in Beijing: true, mobility behaviours have contributed to the establishment of a network rationale in transitional Beijing; true, there have been significant improvements in the management of transport networks; however, these transport networks are still all too clearly in a state of transition (underdeveloped mode mix, inadequate roads hierarchy, etc.).

One question remains on the tip of the tongue: when will recent efforts to improve the management of the roads network and to construct a genuine network of public railway transport have a positive impact on overall traffic conditions in Beijing? By 2008 or later?

## ENDNOTES

1. The document can be found on the official Website [www.Beijing-2008.org](http://www.Beijing-2008.org).
2. The individualisation of transport is directly linked with new social practices within city space (Davis, 1995).
3. The 1996 Beijing Urban Transport Study, directed by MVA Asia Ltd. and the Beijing Institute of City Planning and Design, contributed to promote a road-based vision in the city's transportation strategy.
4. Pressure from the automobile sector has diverted public policy from any attempt to control automobile access by the establishment of quotas. The document "Industrial Policy for the Automobile Sector" issued in February 1994 by the State Planning Committee was decisive in this respect (Doulet, J.-F., 1999).
5. The equipment rate was 1 vehicle per cent households for Beijing and 0.26 per cent nationwide, according to a survey conducted in 1997.
6. Subway 5th line, Baotong line, Subway 4th line, the north section of Subway 10th line, the Olympic line, Yizhuang line, Airport special railway line and the middle section of Subway 9th line

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