

# Reading Record

[Pan and Doulet, 2003]

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Date

*Reading Record for [Pan and Doulet, 2003]*

## 1 Introduction

Close to an operational work in urbanism/mobility. Franco-Chinese colloquium (october 2001)

**Reflexion on evolving cities** Mobility crucial for modernity ; urban growth linked to intermodality/multimodality ; exchange experiences and ideas ; joint seminar.

**Benefits of scientific/cultural exchange**

**City as a preferred field of exchange** International and interdisciplinary (practitioners and scientists).

## 2 Linear Reading

### 2.1 Part 1 : Places of Intermodality

Importance of intermodality hubs in its concretisation.

#### 2.1.1 Perspective on Urban Mobility

Twentieth century was all about transitions ; latest is urban mobility.

**Pedestrian cities** Size of former cities determined by walking radius (around 3km) : pedestrian cities

**Multimodal cities** Industrial revolution : new transportation modes.

**Car cities** From the States, progressive diffusion of the all-for-cars model.

**Reasoned multimodal cities** Negative externalities of car have rapidly induced limitation of its share. Cities become multi-scalar. Requires a general political action for mobility.

**Only one model ?** Diverse trajectories across the globe. Bus can be before car. Or train for density (Japan) or political (URSS) reasons. China : bike.

### 2.1.2 Problems and Solutions in Development of Urban Transportation in China

#### Context

- Very fast economic growth and mutation of industrial structure induced an accelerated urban growth.
- Combined to an exponential growth of automobile ownership.
- Strong real estate and environmental constraints.

#### Current issues

1. Congestion for bikes as no dedicated road system.
2. Small share of public transportation
3. Increase of taxis share
4. Increase of private car
5. Specific strategy for lightweight rail
6. High construction density
7. Center redevelopment induce functional mutation and population migrations from center to sub-urbs
8. High pollution impact

**Solutions** Criteria : economic feasibility ; financial equilibrium ; social acceptation ; environmental sustainability.

Solutions : coupled development (à-la-TOD) ; concrete measures for public transportation ; increase investments in infrastructures ; specialization of road network ; projects of circulation ; increase regulation role of central government ; NTIC.

### 2.1.3 Transportation and Intermodality in Ile-de-France

**What is intermodality** Transfer between two modes. In practice implies a collective mode.

#### Requirements

- Physical organization of transfer space
- Coordination of timetables
- Coordination of tarification
- Information of travelers

Places of intermodality : exchange poles, multimodal poles, intermodal poles, multimodal platform.

**Why encourage it ?** Negative externalities of private car ; disillusion of Modern Urbanism.

Reduce use of car, preserve health, urban quality of life reduce infrastructure cost, energy consumption.  
One way to create a desirable city.

**Organisation in the past (70-95)** Concentration on commuting, radial trajectories, peak hours, between public transportation. Creation of “Carte Orange”.

Later understood need to encourage car-public transportation intermodality. (P+R). fail, because no significant improvement for the user. : larger span, in suburban stations. Then larger multimodal poles : La Defense, and 3 new high speed stations.

**Recent directions** New multimodal poles, densification around stations, quality improvement for median poles. Improvement of insertion in the city : less urban cuts e.g., better accesses, quality of exchange, services in stations, etc.

**Quantification** 552 P+R. 11% TC-multimodal.

Strong potential but geographical inequalities (long and very long travels have the strongest intermodal share).

**Current issues and perspectives** Weak penetration rate. Strong dispersion of responsibilities (governance of poles). Logistics and fret.

**Conclusion** Necessity of very large poles, but need of smaller as car is generalized. Answer for an efficient, agreeable and sustainable city.

#### 2.1.4 Project presentation of Beijing new transportation hub

In Beijing : 50 years ago, “cyclopousses”, 30 : bike, 20 : subway, 10 : car, 5 : public transportation (bus, subway, suburban rail). Transportation hub as a new urban component. Not only superposition, importance of organization (taking into account flows evolution on long time scales). Also tertiary hotspot. Conception : Chinese construction minister, in partnership with AREP.

In growth context.

#### 2.1.5 Invent the city of “mechanical transportation” (Duthilleul)

**Still to invent** Organisation of networks (modernism) was not enough, everything still to write.

**New spaces to construct** Hub as a concentrated urban space, convergence of flows.

Modern and agreeable city invented around all transportation modes. For the user, the space between infrastructures is crucial. The project, the expression of an ideal.

**Examples** CDG2 : new place of life ; Valence ; Aix : optimal exchange space ; Lille : generate an economic development thanks to dynamism - the station as a new street ; Paris (RERE) : new parisian spaces, no “over” and “under”, all levels of the city are noble (*reflexion on that point : which implication for the superposition of networks. the multi-layer city is physically realized. the technical performance allows the complexity of network-territories interactions - reread Dupuy on that - on the importance of technical networks as veins of the city ?*) ; Marseille : keep identity ; Shanghai : Circular space, identity of this city far East, from which the sun rises on all other Chinese cities.

#### 2.1.6 Analysis of modal structure of mobility

Crucial step for planification. Frequency and distance of commuting depending on economical regime (planified or market economy).

Factors of modal choices ? formula of multimodal travel times : analysis of concurrency between two modes, as a function of  $\Delta t$  between modes (roughly).

Implications for policies to change its sign : examples : increase density of public transportation ; better info (GPS) ; improve traffic conditions ; coordinate timetables ; incentives for users.

Impact of congestion if use of individual modes. Change in income : change in transportation mode.

Taxis and motorbikes also strongly problematic. Cars : income transition, corresponds to when subway was built in European cities. Each mode has its corresponding spatial span. Depending on modal share structure for a given city, corresponding policies.

### 2.1.7 Political Management of Urban Mobility Places in Nantes - Parking as a regulation tool

**Situation** History strongly influenced by geographical localization : port, importance of water, economic hub. Urban innovation recently.

**Mobility** First city to implement a modern tramway line. Requalification of public spaces. Voluntary action for complementarity of transportation modes : coordinated networks ; common tarification with regional trains.

**Experiment of parking regulation** Creation of P+R to follow evolving practices.

- Positive aspects : increasing occupation rates ; choice motivated by travel time and cost.
- Issues : Modal report, some (20%) use car now.
- Favorable factors : Localization, transportation system performance, ambiance, services. General governance : reduction of parking in the city, beneficial tarification.

**Perspectives** Equilibrium between modes ; new parking offer ; modulation in some areas ; easing for residents.

Train : same transportation ticket.

Actions : modernisation of infrastructures ; new stations ; organisation around stations ; new intra-urban station ; new tarifications.

Objective : also increase inter-urban train modal share.

## 2.2 Flows management

Contemporaneous city as a space a flows.

### 2.2.1 Life modes and evolution of cities : a new Urbanism ?

Third urban revolution (Renaissance, then capitalist city)

**A new urbanism** *New Urbanism* : smaller Urban Projects, more flexible. Rodgers in UK. In France, Urban renewal (against modernism). But also increase in demand of individual housing. Organize urban sprawl. Countries where urban sprawl is reasonable. Crisis due to forms of modernism, and of lifestyle discrepancy between urban and rural.

**New urbanism as a consequence of lifestyle evolution** Increase in individual autonomy : change in housing demand (greater lodging). faster mobility. Increase in variety of demand, trajectories, etc. Issue of suburban mobility, at any time. Urban life less and less regular. Mobility and Information at the heart of contemporary urban life, make success of cities. Accelerating pace of life. Time is what misses most : implies use of urban services to compensate. Shopping in stations. Decrease of work time across lifespan. Life less determined by work. Mobility for leisure, weekend, also with family. Increase in interest for natural and cultural heritage (consequence of population fears) : influence on archi. But also regret old cities : urban tourism. European city, alternative to american cities. Soft transportation modes (tram, bike). Also risk society : increase in safety requirements (techno), but risks also increase with technology. Consequences : fears and individuality, everything must be debated, can have negative impacts on projects, but also beneficial if helps to understand needs. Generally, quality of projects is consequence of difficulties during conception. As Urbanist, better, as stimulate creativity and requires more.

### 2.2.2 New Mobility Behaviors and Transportation Uses in Chinese Cities

**Mobility Mode as an evolutive notion** Transportation mode as part of everyday life, evolves with practices. In China, rapid growth and urbanisation : broader commuting distances, new relation to residential choice. More tourism because more holidays. Concern of well-being in transportation network design. Smaller distance countryside-city. Increase in commuting distance but decrease in duration. General transportation structure has evolved.

**Trends** Polycentric planning in Greater Beijing. Link Urban/interurban. Problems of congestion of road network. Replanning of amenities and urban environment. Answer to the contradiction service increase/congestion : relation offer-demand, mobility-modes, link public-private, relation between life modes and mobility.

**New mobility behaviors** Directives :

- increase public transportation use
- better pedestrian accessibility
- hierarchy of roads according to function
- better public transportation service
- safety and convenience
- associate city and countryside
- quality of infrastructure
- well-being, integrated vision of cities.

### 2.2.3 Strategies for Transportation Development in Chengdu

Old city, developed around a center. 3.35Mio inhabitants

**Characteristics of public transportation** Bike : 40% of commuting ; 75% of non-motorized travels. Short distance travels in majority. Growth of private vehicles. Infrastructure satisfies short and slow traffic ; already quite congested. Multi-modes roads : pb at intersections ; specific measures to desynchronize and fluidify. Improvement of road infrastructure : transportation hub in SouthWest. Take into account land-use, planning and socio-economic factors. *Urban growth coupled with transportation growth.*

**Perspectives** Database to establish perspectives.

Spatial structure : from a monocentric to a polycentric organisation, should improve congestion problems (rq : // theory Remi)

Transportation : sustainable.

Strategy : no increase in congestion, objective in commuting time.

Masterplan for road network.

Public transportation : bus on reserved lanes ; rail.

Bikes : improve conditions.

Link with surroundings cities (satellites) : rail.

**Conclusion** Importance of transportation in city development. Difficulty of sustainability and contradictory objectives.

#### 2.2.4 Inter-mobil project in Dresde

**Project** East Germany : profound changes in mobility, huge increase in motorisation rate. Project to tackle traffic increase and decrease public transportation use. Intermodality and NTIC.

**Couple NTIC with infrastructure development plans** Various infrastructure projects, combine with NTIC.

**Interdisciplinarity : offer and demand control** Long term : land use and activities localization ; mutation of network, including adapting service techno (automatic metro experiments). P+R, timetable synchro.

Middle term : work at distance : should decrease mobility demand ? **Wrong**. Universal transportation ticket.

Short term : videosurveillance and real-time management.

Evaluation of the project as a subproject.

**Management** Multiple stakeholders, academic, institutional etc.

#### 2.2.5 Strategies for Transportation Development in Beijing

**Harmonized development between transportation and the city** New “Schema Directeur” (Masterplan). New developments, renovations. Remote/suburbs late. Green belt attacked.

City growth and its morphology is strongly linked with infrastructure (more particularly transportation) development. Strong demand in center : congestion.

Need to adapt to new modes, establish transportation corridors. Polycentric planification. Interconnexions. Improve interurban accessibility, regional growth, more integrated growth ?.

**Sustainable development** More cars, against environment protection.

Solutions :

- Better composition : efficiency, low consumption, flexible management structure, humanist point of view.
  - Develop public transportation and control private cars. Rail reorganisation : scales, management, production at national level. Other modes : bus accessibility, hubs, reserved lanes, real-time regulation, change transportation market (concurrency).
  - Better environment for pedestrians

- Cycling development : already well used ; keep reserved space ; better planning (experiments)
- Restrict car use : strong increase led to problems
- Clean fuels, against pollution, change vehicles (city and public, taxis)
- Improve road network : improve capacity ; hierarchisation of roads - interconnexion between different levels : careful.
- Protection of historical districts : motorisation against preservation. Regularisation of land-use ; reasonable modifications ; role of public transportation (subway) ; pedestrians and cycling ; lack of parking to regulate cars.

**Improve accessibility rather than motorisation** Accessibility : mobility in a broad sense. Lack of connexion and secondary accesses/roads, interconnexion difficulties : bad level of service, people take other modes.

Minibus, small transportation roads. Better regularity and complementarity. Increase transportation density in historical districts, coupled with minibus : increase accessibility and complement public transportation network.

### 3 Synthesis

*TBW*

### References

- [Pan and Doulet, 2003] Pan, H. and Doulet, J.-F. (2003). Croissance urbaine, modes de transport et intermodalité: actes du séminaire organisé à Chengdu (Sichuan), dans le cadre du colloque du Comité France-Chine des 29 et 30 octobre 2001. Presses de l'université de Tongji.