

Managing Modern Urban Mobility Systems from the Perspective of Social Science

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ABSTRACT: This article discusses the management of urban transport from the perspective of social science. The emergence of today's transport system is described and the present transport crisis and visions for confronting it are highlighted. The social aspects of managing urban mobility are then emphasized in a critical review of traditional ways of analysing the system. Finally, the need for development studies to address the arena of transport studies is stressed.

RESUME: Dans cet article, la gestion des transports urbains est analysée dans la perspective d'une approche de la science sociale. L'apparition du système actuel des transports est décrite et sa crise actuelle est mise en valeur aussi bien que les possibilités de l'affronter. Par la suite, les aspects sociaux de gestion de la mobilité urbaine sont accentués à travers une révision critique des méthodes traditionnelles d'analyse du système. Enfin, nous mettons l'accent sur la nécessité des études du développement d'intervenir dans l'arène des études sur les transports.

1 INTRODUCTION

This paper addresses the management of motorization in cities. Throughout history, people have experienced a need to meet others and to access markets. Today's rapid extension of transport infrastructure, designed to promote spatial and economic relations, is a key issue in the continued progress of modernisation. However, this occurs alongside ever increasing problems of urban transportation. The construction of complex transport systems has great momentum but for a variety of reasons (financial, natural resources, interdependence between the various parts) this complex is also vulnerable. The future reconfiguration of urban motorization may therefore have dramatic consequences. The purpose of this text is to elucidate some of the current problems of managing motorization from the point of view of social sciences and, in particular, development studies, which focus on modernisation in developing countries.

Looking back over the evolution of motorization we find that throughout the 20th century, the political and economic focus was mainly on the global extension of the motorized system of urban mobility. The urban growth of transport facilities was initiated and fuelled through the collaboration of public and private actors and by increasing the capacity of the

system builders. Huge investments, both public and private, have been made in infrastructure enlargement, institutional capacity building, and expansion of markets for motor vehicles and so on. The historical emergence of motorization has contributed to Western (mostly US (!)) hegemony in defining what is desirable but also in defining the character of the problems and desired strategies to solve these problems.

2 PRESENT CRISES

The continued expansion of motorization has brought urban transport to the verge of a crisis that none of the traditional actors seems able to manage. So far, none of these actors have addressed the entire system as such. Instead, priority has been given to issues of traffic efficiency, lowering the costs of transportation, and the various technical solutions regarding traffic flows, driver safety, emission control and a cleaner production process. So far, private and public builders of motorized systems have largely neglected the necessary system changes despite the impressive empowering side effects they have on environment and social equality. This development is aggravated by the fact that 50 percent of the global population lives in cities and that about 10 percent own a car. Today's crisis

therefore includes both the internal and external relations of the motorized system (climate change, resource conflicts, socio-economic divide—induced by for instance mass motorization) and the issue of management has become much more complex. Hence, the purpose of this paper is to highlight the technological and social aspects of urban mobility.

3 VISIONS AND VIEWS

For the major part of the 20th century, the implementation of the Modern City and strategies for improving organisation and accessibility was seen to counteract under-development and to bring to fruition visions of the attractive modern city (Brasilia and Stockholm are two successful examples). This period ended in the 1990's and was replaced by the notion of the Sustainable City (the concept of sustainability was introduced into politics by the Brundtland Commission in *Our Common Future* 1987).

There exists various techniques to increase sustainability in different areas but the political and social will to implement such techniques is weak. (In Sweden green taxation was supported politically and to a certain extent also socially but, movements in countries facing other economic challenges—such as Romania—often have weak support?). The OECD guidelines (presented in EST 2000) are an example of a commitment to support the idea of a sustainable city by implementing major international agreements (such as the UN Framework Convention on Climate Change (UNFCCC) 1994-1997, the Vienna Declaration, 1997 and the WHO Charter, 1999). But the ambitions of global environmental organisations are often in conflict with locally perceived needs and interests, such as local economic interests (related to a perceived need for industrial or social development in cities such as Tehran or La Havana). Some basic sustainable ideas for improving life possibilities and accessibility were launched *e. g.* in Curitiba and Singapore. In these cities changes were based on non-democratic forms of urban governance (*sic!*).

So far, sustainable city policies have been closely related to the political order and the prevailing visions (liberal democracy, welfare state) and to the dominating economic relations. The capital of the first democracy in the world, Copenhagen, has denominated itself as the Environmental Capital of Europe. Of course, the features of sustainability in Copenhagen are an outcome of the interplay between politics and economics.

Current evolvement of the Global and Network City in developed and developing cities stresses the intimate relation between the political and economic order and its impact on urban governance. The development of the Global and Network city might

have a bearing on how to cope with complexity and the management of motorization.

4 FOCUSING ON SOCIAL AND TECHNOLOGICAL ASPECTS OF MANAGING MOTORIZATION

Today's problem of urban transport has both a structural base and an actor orientated dimension. To what extent is the urban government in control of the transport infrasystem or the infrasystems for water, electricity and so on? In expanding mega-cities the decision-making process regarding land use and the location of industries sometimes have a weak or inefficient political institutional background. In poor countries the public sector cannot maintain or invest in infrastructure and usually national finances do not support large infrastructural improvements.

The vertical integration of mass motorization as a large technological system, mass production, standardization and the design of the institutional arrangement (through development banks, World Trade Organization etcetera) developed long ago into a universal standard and a strong push for a technical and systemic view on modern motorization. The transition to modern motorization and tele-technology has multiple impacts on social development. This 'progress' of communications influences the nature of urban growth, emergence of new business activities and social reproduction. The performance of the technical system varies according to socio-cultural and economic conditions. It is not possible to speak of a general outcome in large cities but what may be noted is the fact that uneven management of the various forms of mobility leads to further unevenness regarding for instance income distributions and economic growth.

The complexity of social relations that are involved in the transport sector is often ignored by economists and technicians and put into a 'black box'. It is clear that the notion of personal safety in public spaces has not been used to address traffic issues in mega-cities. Safety issues have been grossly neglected despite the severe human and economic losses caused by injuries and fatalities in developing countries (often 3-4 percent of GDP). This issue was raised for the first time as late as November 2003 by the UN when the General Assembly decided to devote an entire session to road safety with the following motivation: "Traffic accidents killed about 1.2 million people worldwide in 2000, "disproportionately" affecting developing countries, the assembly said, so it decided that a meeting on road safety next April would launch a World Report on Road Traffic Injury Prevention, currently being developed under the auspices of the World Health Organization (UN release, Nov. 5)".

A further social consequence of extended motorization is the strict structuring of street space, which excludes the needs of large groups of users such as the elderly, children and others who use non-motorized mobility. The traditional street design that now prevails in affluent parts of cities is also often gender biased; streets are not constructed to respond to the needs of women. The list of factors that are disregarded by designers of the modern technical system of transport is long but I will conclude by stressing the environmental concern that should be taken into account in the managing of motorized systems.

Support for public transport or the upgrading of the bicycle system can improve road safety and become a vital policy instrument for reducing poverty, creating social bridges but also for lowering toxic emissions. (Don't get me wrong—I am not cynical when it comes to the quality of life.) The successful management of urban mobility requires that a variety of factors be considered in planning. Aspects of structural relations such as demographic changes and economic inequality (gendering of physical space, exclusiveness in planning, the biased patterns of consumption and mobility) should also be taken into account.

The opportunities and limitations share some features and differ in others in the world's developing mega-cities. The modal split in developing areas is very different from that of richer areas. The definition of problems and the solutions adopted are of importance in this context. A pertinent question in this context is: who has the capacity and the power to define the problems and develop the strategies of urban transport? It is often said that modern motorization is poorly managed, yet the crucial role of politicians in developing efficient transportation systems is usually stressed by all actors (Thynell 2003).

5 CRITICAL PERSPECTIVES ON SOCIAL AND TECHNOLOGICAL ASPECTS OF MANAGING MOTORIZATION

The manifold examples of rapid motorization in cities with economic growth and its impacts (*e. g.* Moscow, Warsaw, Tehran, New Delhi) suggest that the sooner motorization is regulated by policy instruments, the sooner people will adjust to the regulation and the better the outcome. There are a number of options and constraints, such as policy trends, that may increase the market mechanism in motorization. At the same time, the strategies for managing motorization, such as infrastructural improvements, economic steering measures (*e. g.* congestion charging in London, *hoy no circula* in Mexico City or Athens, green taxation) have not been properly elucidated in relation to social change

and increased need for mobility. The same can be said about the outcome of technological changes (catalytic converter, the transition to compressed natural gas in public buses in New Delhi) and various technological adjustments. For instance, the business interests of dominant actors affect rural emigration, the spontaneous creation of residential areas and the growth of new economic niches in ways that often remained unexamined. The existing infrastructure and the outcome of technological improvements are generally poorly evaluated. Social change and its relation to modal splits as well as to urban vulnerability is generally said to be complex and difficult to understand from the point of view of economists and technicians.

The outcome of a road safety programme or the introduction of Euro II standard in poor countries—*e. g.* Bangladesh cannot be grasped in case policies only address the ones that will buy a new vehicle within the next few years. The upgrading of some modes of transport may reinforce the existing socio-economic divide between different user groups.

The private and public partnership offers one option for handling these complex problems (planning, taxes, and road constructions). The content of these partnerships may be analysed according to how different actors define their role within the socio-technical process of change. One of the lessons learned from the welfare state projects is that in order to achieve the goal of even development, all citizens must be included. Of course, at the end of the day this goal may be impossible or unrealistic but the inclusion of the mobility needs of the whole population in planning is a *conditio sine qua non*. Despite the fact that, the non-motorized means of mobility have been largely excluded in the planning of the Modern City, these kinds of mobility interact with motorized forms and play an important part also in the performing of the technological system. Besides, it is also essential to clarify what kind of urban *leitbild* is attractive -- the Sustainable City or other some other vision.

In order to address the complex problems involved in the management of mobility from the point of view of development in my research I will make use of the perspectives of International Political Economy and those of the theory of Large Technological Systems. These perspectives focus on the strategies used by various economic and political actors in the management of any socio-technical system. In my doctoral thesis, which was defended last year, I stressed the importance of the outcome of negotiations between the state and the market (with emphasis on urban government). Crucial concepts in the managing of motorization are used differently by the various actors and in different cities. For instance, there is a variety of ways to understand the concept of sustainable mobility and the various

negative consequences of mass automobility. (The World Business Council of Sustainable Development forecast the number of vehicles to be 1, 6 billion in 2030.) (I consider six categories of negative side effects related to: social inequality, health, ecological system, man-made world, space and energy. The views of problems and of possible and desirable solutions also vary substantially between different local actors.

6 FINALLY

The current technological and social changes in motorization clearly need further analysis. It is a compelling challenge for development research to pinpoint the influence of technology on urban development (particularly its increasing role in developing cities). Using scientific methods, the political and social changes associated with motorization could also be clarified. Modern urban transport is still expanding in space and verticality (politics and economics) and therefore scientific contributions from social sciences, such as development studies, are needed to provide an understanding of the content in 'the black box' of managing motorization or, better still, to open that box. I would therefore stress how important it is that social science penetrates deeper into the arena of transport research.

6 REFERENCES

The OECD 2000. Guidelines for environmentally sustainable transport (EST).

Thynell, M. 2003 *The Unmanageable Modernity An Explorative Study of Motorized Mobility in Development* Ph. D. Thesis Department of Peace and Development Research, Göteborg University, Sweden, Göteborg: Vasastadens Bokbinderi AB.

Links to original UN release at:
http://www.unwire.org/UNWire/20031106/449_10168.asp.

The World Business Council of Sustainable Development. The EU transportation Conference, 5th of June 2002, Valencia, Slide 23. Geneva: WBCSD.

The [World Commission on Environment and Development](#) 1987. *Our common future / World Commission on Environment and Development* Oxford: Oxford: Oxford University Press.