

## Urban Transport Directions: Challenges for Future Research

**David Hensher**

*Professor of Management  
and Director, Institute of Transport Studies  
University of Sydney*

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### KEYNOTE ADDRESS

Abstract:

Urban transport research and planning is facing some major challenges. There is a new realism emerging which is recognising that it is not possible to construct enough capacity to match projected growth in traffic, especially automobile-based traffic. Furthermore, there is no consensus. The important questions in very broad terms are: "what are desirable features?" and "how do we get there?" This paper sets out some major themes which urban transport researchers should address as contributions to the development of both a tactical and strategic view of better futures. At the heart of the debate on a desirable future is a consideration of the role(s) of the market and the role of non-market controls (including physical planning incentives and policies).

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Contact Author:

Professor D A Hensher  
Institute of Transport Studies  
Graduate School of Business  
The University of Sydney NSW 2006

Telephone: (02) 550 8631 Fax: (02) 550 4013

## Introduction

Urban transport research and planning is facing some major challenges. There is a new realism emerging which is recognising that it is not possible to construct enough capacity to match projected growth in traffic, especially automobile-based traffic. Furthermore, there is no consensus on just what additional capacity is required and the mix of road and rail investment (Goodwin 1991). The historical under-pricing of all motorised urban passenger transport together with somewhat blunt physical planning policies has failed to provide appropriate investment signals to ensure that cities in particular are not dominated by low density "solutions". While there should be no suggestion that the low density option is not a valid option, it should evolve together with other possibilities out of an environment characterised by efficient prices (and equity compensating packages) and physical planning policies which are consistent with giving the community real choices that are sustainable in a social, economic and environmental sense. The important questions in very broad terms are: "what are desirable futures?" and "how do we get there?".

Historically, the mobility offered by individual automobile ownership has been a major liberating factor, transforming urban areas, our way of life, and in particular giving individuals a greater command over time and space. The new command over time was very much technically driven, with forecasts of traffic growth being used as the basis of establishing future road needs. Actual investment went hand in hand with intended road investment for some years, but the gap has widened substantially resulting in congestion and, one might say, an erosion of a command over the quantity and the quality of urban time. Can we afford to increase urban road infrastructure at a rate to curtail traffic congestion, and should we?

The emerging debate will require a broadening of the research base of transport planners, to encompass the interrelationships between physical planning policies, pricing, the environment, social equity and political commitment. The mood is now being directed towards an assessment of the **linkages** between land use, transportation and the environment, in the context of understanding the linkages in contrast to a somewhat obsessive past (and current) interest by transport planning agencies in forecasting traffic well into the future. A new balance of research activity is required in recognition of the "new realism" (Goodwin et al. 1991). Research should move away from (long term) forecasting to understanding the relationships between the critical influences on the cost and the quality of urban life, and then concentrate on how we move from the current situation to preferred futures. This is the challenge ahead.

This paper sets out some major themes which urban transport researchers should address as contributions to the development of both a tactical and a strategic view of better futures. Determining what is desirable is a great challenge. We have few (generally agreed) guidelines. What we do have however are some very powerful forces at play in the form of markets, physical planning policy, and institutional regulation. At the heart of the debate on a desirable future is a consideration of the role(s) of the market and the role of non-market controls (including physical planning incentives and policies). Complicating this identification is the resolution of the question "how good a guide is the past in identifying the ideals of the future?". The arguments developed in this paper are based on the premiss that many principles enunciated in the past may still hold, but the practice has not served us well enough. An example is the breakdown of efficient price signals and physical planning policies, designed to recognise the full set of social costs of transport provision in order to focus the decisions of individuals on choices and outcomes which are consistent with the aggregate good of society.

The full set of social costs and benefits in the transport planning context manifest themselves most clearly in a better understanding of the interplay between land use and travel, especially in metropolitan areas. Historically we have acknowledged the importance of considering the land use implications of transport decisions, and vice versa. But have we advanced our knowledge to a position where we can answer the question: 'what land use patterns change urban travel, and what transport decisions impact on land use, be it a reduction or an increase in travel'? The failure to unambiguously answer this question may be due to the lack of a relationship which is not directly causal. An intervening influence on both land use and travel is the behaviour of individuals (and firms) that affects the demand for land use and travel. The recognition of this paradigm, as simple and intuitive as it is, refocusses the debate on the power of the consumer, the role of markets, and the need/desire for choice. Individuals have information about a set of opportunities to engage in activities at various locations, some of which will involve travel. The individual also has needs to work, shop, have a home and a particular lifestyle. These needs condition how the individual chooses among activity opportunities involving travel. The individual also has resources such as time and money that affect response to opportunities to travel and location of activities at various places and prices. Importantly, individual preferences also change over time and are influenced by the available set of opportunities.

Thus individuals respond to opportunities, needs and resources by consuming both land (location) and travel. The set of market signals and institutional regulations (e.g. subsidies to particular modes) in the past have tended in general to create a "market" in which travel is inexpensive relative to housing such that one can acquire more house per dollar farther from the centre, creating an incentive for low density living (Deakin 1991).

We should not use this evidence to conclude that the observed outcome is undesirable per se. We can certainly conclude that it is not necessarily an efficient outcome. We can say this because unquestionably societies have failed to establish efficient prices for location and travel, including a recognition of the environmental and social costs associated with alternative bundles of land use and travel (i.e. spatial bundling). The establishment of appropriate (social) prices will, within a society of significant variations in individual wealth, produce a continuum of land use/travel bundles, accommodating the preferences of individuals for high-density/low travel requirements through to low density/high travel requirements. Low density/low travel requirements can also be included in the set, as exemplified by the decentralisation of workplaces and opportunities to reduce the commuting time while choosing a low-density residential location. The statement "I'll have mine medium rural please" should sit comfortably next to "I'll have mine well-done central please"! (Peiser 1989, Hensher 1992).

### **The role of markets and governments**

Transport planners are increasingly recognising that market forces have a powerful influence on the supply of transport infrastructure and the associated use of such facilities (Richmond 1991). The role of government is increasingly under scrutiny, as witnessed by the high-agenda debate on privatisation, economic deregulation and competitive tendering (Hensher and Beesley 1992, Beesley et al. 1992). A commonly levelled criticism of markets is that they fail in a number of ways and that government must be responsible for correcting the incentives of the market (e.g. the imposition of minimum levels of service under the 1990 NSW Passenger Transport Act) or to replace the market entirely (e.g. publicly provided bus services with a spatial monopoly)

The economist educated in the post-war period may have misled the transport planner into a potentially false belief of the role of government (and its great reliance on formal planning procedures). The mainstream paradigm tends to see the economic problem facing society as one of efficiently allocating scarce resources in the light of individual preferences, techniques and resource availabilities, knowledge of which is supposed somehow to be **given**. This paradigm neglects the importance of the **discovery** of these preferences, techniques and resource availabilities, and the basis of **changing** preferences. This difference in emphasis leads to alternative interpretations of the role of government. The accepted mainstream wisdom in welfare economics asks whether the market provides the right incentives to allocate resources efficiently. Where it does not they see the case for government to correct the incentives or to replace the market. The alternative view (known as the Austrian view) asks whether the market provides the right incentives to discover where there is scope for increased coordination leading to **improvements** in the allocation of resources. It is acknowledged that the market makes mistakes, but on the whole it is concluded that the government cannot hope to acquire sufficient information to do a better job. Market failure or government failure - the best of two bads? The role of physical planning policies as a complement to market forces needs to be considered within the debate on the effectiveness of market forces.

The challenge is one of identifying what kind of government policies provide the most encouragement for the coordinating process of the market. The mainstream interpretation has seen the requirement for institutions such as the Prices Justification Tribunal, the Trade Practices Commission, cost-benefit analysis and environmental impact statements, as devices to correct "market failure" and improve resource allocation. By contrast the Austrian perspective sees these institutions as more likely to impede the process of coordination. The emphasis is moved to the importance of freedom of entry and the development of private property rights as means to encourage the smooth functioning of markets and the competitive process and thereby to protect the public from exploitation and inefficiency, not only from monopoly but also from unnecessary government. Indeed this begs the question: would we have such low density urban areas if public transport was efficiently priced and not nationalised in the central areas of capital cities, and road pricing was in place? The value of **subsidised** public transport for the common good of the environment may be a fallacy (Hensher and Milthorpe 1989, Beesley 1991, Hensher 1992).

How then do we suggest to government, and planners who advise them that it is time to recast the dice. The central issue is a recognition that governments will respond to political pressures. It cannot be assumed that the use of techniques such as cost-benefit analysis and externality (Pigovian) taxes or charges will ensure the remedy of externalities in the manner assumed by welfare economists and transport planners. Taking a step backwards, we must recognise that the task is not primarily one of computing the optimal solution to a well-defined "problem", but rather one of discovering the problem in the first place. There is not enough consideration given to good ideas; where this does occur they are increasingly being stifled by debates on intellectual property rights and the desire of governments to put private ideas out to public tender. Having identified a problem and a possibility of making some improvement, necessary information is gathered and analysed within a process which moves forward to implementation of an improved solution.

The important question becomes: what kind of institutional framework is most likely to promote the discovery of activities with significant externalities and to resolve them with minimum cost and maximum benefit? Will complaints from individuals and lobby groups (potentially) affected by a new tolled freeway be sufficient to alert the appropriate government authority, or is the prospect of paying and receiving damages more likely to spur the parties to agreement? How will the information necessary to reach an efficient solution be obtained? In the market, negotiations take place between parties who act in accordance with their own preferences and opportunities they believe open to

them. In a public inquiry and cost-benefit analysis or a setting of establishing externality charges, a major difficulty is that these preferences must be estimated. If a lobby group has to "purchase" the right to prevent open space being developed for a freeway, this action will reveal the value placed on this "commodity".

What incentives do individuals involved in the process have to implement the solution thought to be most efficient? In the market the incentive is "private" gain (liberally interpreted to accommodate the gain of members of a lobby group who see the gains to them being gains to society). In a bureaucracy other incentives and pressures take precedence. For political reasons, it is unlikely that the recommendations of a cost-benefit analysis will be unhesitatingly accepted or that an externality charge (e.g. congestion charge, environmental levy) will be imposed at the rate calculated as optimal. Governments tend to attach political significance to the outcomes of various alternatives which is often different to that of the inquiring Commissioner and probably different from the view which consumers would have expressed in the market. The Kyeemagh-Chullora Road Royal Commission (Hensher et al. 1983) and the Castlereagh Freeway - F2 inquiry are two examples of such outcomes. Politicians are in office to respond to public pressures, not to ignore them.

Given that governments will ultimately respond to political pressures and that inquiries, cost-benefit analysis, externality charges etc. may not produce the outcomes which such procedures generate, it may be better to look elsewhere for "planning solutions". An appealing paradigm is that of the creation of appropriate property rights within which the market operates more efficiently. If providers were held legally liable for damages caused by their actions, they would have to take these damages into account without any government intervention. The need for appropriate **incentives and sanctions** is at the heart of the problem of implementation. Indeed, it has been argued by Coase (1959) that property rights were beginning to emerge and would have evolved into an efficient market in radio broadcasting in the USA had not the government intervened to prevent it.

#### **Physical planning policies: how do they fit in?**

The discussion thus far has recognised that efficient pricing signals are required for all transport facilities and services. Any revenue raised from new charges such as a road congestion charge should be earmarked in such a way that those incurring the charge can see some overall benefit. As a charge and not a tax, the derived revenue equates with the resources consumed in the act of travelling. Politically, road pricing will not be perceived to be acceptable unless it delivers a "better off" environment. Part of this deliverable must be improved road space for all, including priority to users of roads who have economic or other precedence (e.g. high occupancy vehicles and freight vehicles), and if less road space is required to satisfy the above improvements, an enhanced physical environment in the form of increased open space etc. may result.

The revenue raised from road pricing will be so large, however, that it can provide the financial base for new transport investment, in particular better roads and public transport facilities, for a reduction in other taxes, and for increased social spending. While this revenue sum has a large number of end uses, the investment signals may not be consistent with desirable long run economic, social and environmental outcomes. Physical planning policy as a complement to efficient pricing together with investment incentives may be the appropriate direction if we are to contain the invisible hand of the market even with efficient prices. Another way of looking at this is that we want to provide some additional guidance on the selection of investment options which arise from efficient price signals. Physical planning policy should provide explicit

incentives to complement the market incentive of private gain, so that the overall incentive structure has some symbiosis with social gain.

Physical planning policy in isolation from efficient pricing is not desirable. Road pricing, unlike physical planning, provides revenue. Furthermore, it satisfies the popular view that the future of public transport (especially new rail propositions) will be dependent on the future of the automobile in the context of alternative regimes of pricing and physical planning signals. Without this context, the whole debate is lopsided and unproductive. Without a major effort to make the car less attractive, the **economic** future of public transport (especially rail), in the absence of massive public subsidy, does not look good.

### The best of two evils?

If we accept the view that markets often fail and governments also often fail, and that market failure may be less harmful than government failure, then we have to identify institutional reforms which will oversee the elimination of market failure. Abandoning government inquiries does not mean that externalities will be ignored. Private property rights have to be better **defined and enforced**, so that these less tangible goods can be transacted in the market. If a developer has to compensate local residents for loss of amenity, it is much more likely that if the residents accept the compensation, they are revealing a reservation and market price for this "good". Part of this process of establishing property rights recognises the willingness and ability of environmental groups to raise sufficient funds to protect the environment, or persuade taxpayers to do so. A failure to do so would indicate that a particular environmental concern is a minority interest. An environmental trust akin to the National heritage trust could evolve.

Inevitably, interest groups would still argue that government has a role to ensure that the environment is protected. The response here is: we all have a role to see that the environment is protected and that a reliance on government is a failure to establish appropriate property rights, incentives and sanctions. Society has to be extremely careful that in giving government too much influence on the state of our nation that we might be straight-jacketing our prospects for progress. We are where we are primarily because we did not attempt to plan progress or subject it to any central direction, but left it to be guided by a spontaneous ordering mechanism, or a self-generating order (Hayek 1976). Although all is not well, it does not follow that the market is the culprit; indeed the involvement of government, however modest, has certainly been harmful if the low density outcome is deemed undesirable. The role of government has historically been modest: to **assist** the forces of markets in the context of appropriate property rights. The challenge for the future is to assist the market rather than contribute to forces of resistance. This calls for an independent planning regulator, (OFIPLAN), along the lines of the independent regulators set up in Britain for telecommunications (OFTEL), gas (OFGAS) etc. The combination of a legal system and the independent regulator is designed to create opportunities for market participation, using a managed competitive planning policy. The regulatory task embraces the notion of a "cost-benefit analysis on behalf of society" where the arguments are approached by the traditional economic response of efficient allocation of resources in line with a commitment to the consumer and social interest.

While this umpiring role is desirable, we acknowledge the political problem of democracy. Even if all individuals as consumers stand to gain from a general policy of non-intervention, each individual as employee or investor stands to gain from **particular** interventions; and as long as government is responsible to electors within a tight response period, so long will organised lobby-groups be able to impose their will without

appropriate **representation** from the community at large. The independent regulator can, however, have a powerful role to play in guiding the evolution of physical planning policy as much as umpiring the state of play.

## **Conclusion**

Urban transport research and planning in the nineties and beyond will face the challenge of the market and the balance between the role of market forces and physical planning policies. It is true that new skills of a formal kind will be required - everyone needs better information and opportunities - however there is a quiet revolution taking place which should if it matures, place a greater onus on the planning community to be more imaginative ("entrepreneurial") in the way it studies the future. There needs to be increased advocacy for policy - to not unwittingly add grounds for rejection of an alternative but to shift the burden of proof to a continuum of alternatives. The emphasis then moves to identifying what instruments can achieve similar ends, by beginning with a selection of current planning concerns, setting up rival instruments and letting an alternative emerge as the outstanding performer.

There is a need to stop "preparing to fight the last war or the last trend" but to understand the implications of alternative futures based on a stronger role of markets (especially the role of socially desirable price signals in particular for promoting efficient use of existing investment and in establishing markets for new investment), property rights, independent regulators, physical planning policies and modest government interference. Hopefully what should emerge is a more useful debate on the relationship between urban form, urban density, the role of all forms of public transport, infrastructure needs, transport pricing, and the structure of transport agencies. The issue of how to move forward from today to the future will be more important than the point forecast. Transport planning in a free market is not a contradiction of terms. The agenda for urban transport research should desirably emerge from an acknowledgement of this new realism.

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