

Book Review

D. Hensher, K. Button, K. Haynes and P. Sopher (eds.) *Handbook of Transport Geography and Spatial Systems*

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1. Overview of the content

This is the fifth volume in the series 'Handbooks in Transport'. The series is developed to be a reference work for researchers, practitioners and students within transport and logistics. In almost 700 pages this volume provides an overview of many geographical aspects of transportation. The editors aim at providing a useful manual or guidebook, especially for those who are unfamiliar within this area of work.

In their introduction, the editors introduce some of their focal points within the book. They point at new technological changes, such as GIS, GPS and ITS which do have impacts on spatial systems, but which also can be of value in research (data collection and analysis). They point at the importance of institutional factors yielding the traditional disconnection between land use and transportation planning and hope that GIS may be an integrating factor. And they seem to be surprised that many urban areas still have no formal land use modelling capability.

The Volume has 36 chapters grouped into ten themes covering many areas of work currently fashionable:

- a. **Transport and geography.** This theme provides an overview of the spatial aspects of transport. It includes chapters on the history of transport geography in the US, on institutional aspects and on environmental justice dealing with the uneven impacts of environmental problems on specific population segments;
- b. **Transport and urban forms** in which mostly familiar aspects about ways in which transport and urban forms are related. Separate chapters are provided on transport in the urban core, development of transport hubs, spatial clustering and mass transport in work-related trips;
- c. **Land-use modelling** deals with a number of issues and approaches use to model the interaction between transport and land use. Well-known experts within this field

- provide a general overview of these models, specific model requirements, model structures (Lowry types, econometric types, simulation models) and specific approaches such as the evolutionary one and the general equilibrium analysis. A rather strange chapter in this theme is on urban compactness, which may have been more in place in the previous theme. This theme is the most extensive one in the book with 8 chapters;
- d. The theme on **spatial data** includes a historical perspective with issues on traffic zones and networks, but more importantly points in an interesting overview paper on relevant issues concerning links between spatial data and transportation data, including GIS;
 - e. The chapters on **GIS** deal with the role of GIS in land use and transport planning. After an introduction to the theme, applications for routing and logistics, collection of travel survey data and network analysis are included;
 - f. A special theme is included on **GPS** applications. Again, after an overview paper chapters on use of GPS in household travel data collection, vehicle travel measurements, traffic monitoring and 'other transport applications' such as vehicle location detection and safety are included;
 - g. The chapters on **spatial cognition** deal with cognitive maps, spatial processes with trip-chaining analysis and mental maps;
 - h. The theme on **geosimulation** has a chapter on spatial simulation allowing detailed, dynamic and interactive simulation of vehicular traffic and pedestrian traffic at microscopic scales;
 - i. The theme on **networks** deals with the design and analysis of transport networks, spatial equilibrium and traffic assignment;
 - j. The final theme deals with **time use**, including an overview paper on time use and activity systems and on time geography.

2. Assessment

The editors and authors provide an up-to-date review of many issues in this field. In particular, I found the themes on data collection and analysis using GIS and GPS providing excellent overviews of the state-of-the-art both for practitioners as well as for researchers at universities. Other notable papers were written on environmental justice, geosimulation, network analysis and new elements in time geography.

Most papers are written for researchers at universities and research institutions who want a quick overview of current issues in the field of spatial aspects of transport. References added to the papers provide a good starting point for deepening understanding the field. With this target group in mind, the contributions are very accessible and well-written. In my opinion, neither practitioners struggling with day-to-day planning issues nor policy-makers will find this handbook very useful since the volume doesn't provide many directions to find policy alternatives nor benchmark results to be used in practice. I was surprised to find out that issues concerning planning cycles were not addressed at all

With their broad objective to provide essential knowledge in this area, choices by the editors are required. These choices have to be inferred from the chapters since the editors do not provide much of help in justifying these. One of the choices to be made is the selection of authors. Without doubt they have gathered many prominent experts in transport geography,

economics and transport. However, most authors are American or are affiliated with American institutions. This gives the book a rather North-American flavour, in the choice of content, examples as well as references. It is like the World Series in baseball. European answers to issues are often looked at from the US perspective. Issues in Asia, the developing world or Eastern Europe are not dealt with. An example is the contribution by Richardson and Bae on urban compactness. They state in their conclusion that the evidence on the need to apply land use strategies to affect transportation is far from conclusive, which is the general opinion of most researchers. However, in each of the sections of their contribution, they provide many examples of planning failures in compact urban development policies in the US. Also, they point at narrowing contrasts between the USA on one hand and Europe/Asia on the other yielding more sprawl. What misses in their contribution is an assessment of many market failures, not only congestion, leading to these developments and government failures to deal with them. These authors do not provide an assessment of new strategies to cope with these problems, but are just negative on any government intervention. In addition, there is more to new urbanism than an invention of architects being a form of social engineering and spatial determinism, as stated by these authors. Leaving opinions to individual authors, as a reader I would have expected that the editors would have included papers dealing with research on factors determining urban land-use and transportation problems and strategies to cope with them.

In the selection of themes/chapters many important issues are addressed at length; a well-structured overview is presented. However, some important topics have been addressed. Consider first the general themes on transport geography and on spatial forms. It was promised in the introduction to clarify the impacts of technological changes in transport on spatial systems. Of course, applications of some systems (GPS) on transport system components such as freight transport are discussed, but spatial effects of the use of these systems by road users are not discussed, despite a considerable literature on the spatial characteristics of the 'information society'. In addition, hardly any attention is paid to the spatial effects of the E-economy for transport issues. It may be that ITS will have spatial effects in addition to the effects on the transport system discussed in other volumes of this series. Providing new research in this area of work may have made the handbook more complete. I also find the chapter on institutional aspects interesting, but in light of the important institutional aspects and complexities more attention could have been paid to issues on how to deal with multi-level, multi-actor settings with separate decision-making units for transport and land-use problems as well as to instruments with proven success. Finally, I missed an introduction of the implications of the new economic geography for transport; the chapter on spatial clustering might have been an appropriate place for that.

Many chapters have been filled with the so-called LUTI-model issues as practical models for understanding spatial and transport systems as well as for assessment of policies. These chapters are useful. However, I missed an overview of more simple econometric models, data issues and applications, dedicated to specific issues. For example, much work has been done on formulation of theories and estimation of coefficients in which effects of transport systems on location of households and firms are assessed. Such micro-models do establish a rationale for specific targeted investments in the transport system, provide a good basis for cost-benefit analysis in which indirect effects are important and so on.

The final chapters look at the spatial aspects of transport from the perspective of an individual decision maker. Relevant selections have been made from the psychological and sociological literature, but there is more to this. For example, activity analysis deals with

more aspects than just trip chaining behaviour interestingly written in a paper by Kitamura. In fact, I hope that the editors will consider producing a volume to be dedicated to modern aspects of travel behaviour. Of course, insights from this field have been included in this and other volumes, but a good starting point for understanding transport is of course the individual household and firms making spatial choices

In short, I think that this volume belongs to shelves at libraries of universities and research institutions as a reference work. However, practitioners may be better off with books and articles dealing with specific issues they are interested in.

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