

Contents

<i>List of Figures, Tables and Boxes</i>	x
<i>Preface: What, Why, How?</i>	xiii
<i>Acknowledgements</i>	xv
1 Planning the Mobile Metropolis	1
Mobile societies	1
Mobile metropolises	4
A key dilemma	6
The structure of this book	7
Chapter summary	12
What if?	12
Suggestions for further reading	13
2 Transport and Cities: Mapping the Links	15
The basic relationships: speed and diversity, capacity and density	15
A transport land use feedback cycle	25
How does the built environment influence mobility behaviour?	30
How does accessibility influence area development?	36
Chapter summary	42
What if?	43
Suggestions for further reading	46
3 Urban Planning as if Mobility Mattered	48
The de-coupling of <i>civitas</i> and <i>urbs</i>	48
The paradox of telecommunications	52
The social agency behind the evolving urban form	54
Mobility environments anchoring human interaction	56
The public dimension of mobility environments	62
Chapter summary	69
What if?	69
Suggestions for further reading	70

4	Transport Planning as if Places Mattered	72
	Assessing transport modes and services	73
	Designing transport networks: dilemmas and solutions	83
	Metabolizing transport infrastructure in the urban fabric	92
	Chapter summary	95
	What if?	96
	Suggestions for further reading	98
5	Integrating Urban and Transport Planning	101
	The challenge of sustainable mobility	101
	Pursuing sustainable mobility	104
	Transport and land use strategies for fostering sustainable mobility in cities	106
	From policy implications to urban forms	118
	Chapter summary	124
	What if?	125
	Suggestions for further reading	127
6	Planning for Transformative Change in the Face of Complexity and Uncertainty	129
	Identifying and overcoming the barriers to transformative change in complex systems: a multi-level perspective	130
	Putting transport and land use into the multi-level perspective	133
	What could a planning aimed at enabling urban mobility transitions look like?	135
	From small-scale, short-term actions to large-scale, long-term transformative change: an illustrative case	138
	Coping with irreducible uncertainty: evolutionary planning?	146
	Possibilities and limits of evolutionary planning in practice: an illustrative case	149
	Bringing it all together: contours of a planning approach aiming at transformative change in the face of complexity and uncertainty	156
	Chapter summary	158
	What if?	159
	Suggestions for further reading	160

7 The Role of Spatial Analysis: From Supporting Planning for Mobility to Supporting Planning for Accessibility	162
Joint accessibility design: an alternative four-step model	163
How can we measure accessibility?	175
A final reflection: can it be just about accessibility?	180
Chapter summary	183
What if?	184
Suggestions for further reading	186
8 Bridging the Gap Between Planning Research and Planning Practice	187
Integrating scientific and practical knowledge in planning	187
Using transport-related models to support reflection and innovation in planning	195
Using experiences elsewhere to support reflection and innovation in planning	200
Chapter summary	207
What if?	208
Suggestions for further reading	209
9 Connecting People, Making Places, Sustaining the Planet	210
The emerging planning process	210
What if? Towards a radical research and policy agenda	216
Which future for urban mobility? A closing and more personal note	226
<i>References</i>	228
<i>Index</i>	247

Chapter 1

Planning the Mobile Metropolis

The world we are presently in is the result of a dual, breathtaking process of rapidly increasing urbanization and mobility. The unprecedented opportunities and equally unprecedented threats this has brought about can only be confronted if the deep intertwining of these two processes is acknowledged. This chapter is dedicated to articulating and supporting this point. It starts by discussing why contemporary societies and metropolises should be characterized as intrinsically mobile. It then introduces and explores the key dilemma that this condition brings about. It concludes by sketching how the rest of the book will offer conceptual tools and practical experiences to help planners cope with this dilemma.

Mobile societies

Mobility has become an intrinsic component of everyday life in contemporary urban societies. Each day adults work, shop, spend leisure time, meet family and friends; kids go or are taken to school, out-of-school activities, friends; all in different locations. As a result, each day households must juggle complex mobility routines: a child needs to be taken to daycare before the trip to work and picked up on the way back; a doctor visited in the lunch break; a business meeting scheduled in the afternoon; errands done before going home. Another day there is a relative or neighbour needing assistance; a friend who wants to meet at a cafe for a chat. In the evenings there are hobbies and sports to be cultivated; social gatherings to attend. At the weekend there are longer recreational trips and farther-away shopping expeditions. Less frequently, but not less regularly, there are business and holiday trips. Smartphones or laptops are sometimes a substitute, but a lot of activities still require physical travel. Perhaps less visible but no less essential is

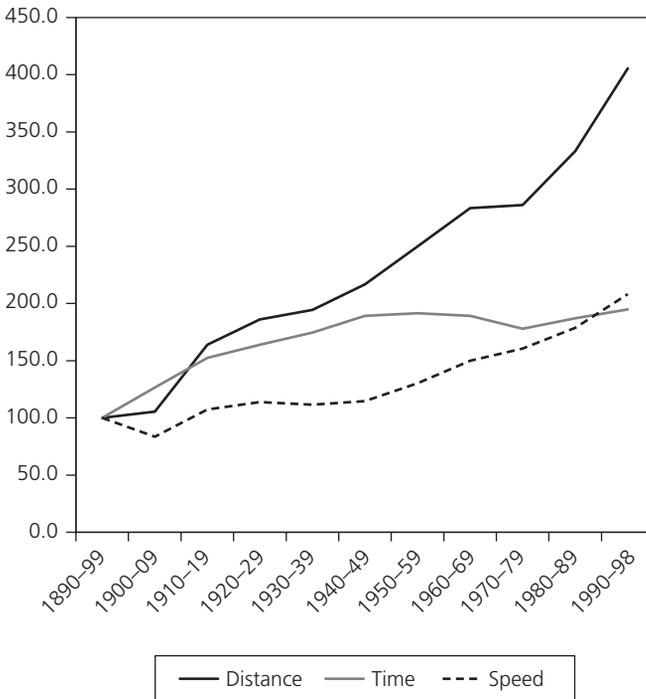
2 *Planning the Mobile Metropolis*

the mobility of *other* people and goods that is required to keep the houses, workplaces, services and shops we use each day performing their functions: personnel needs to be there; the shelves must be filled; appliances brought in or repaired. Our food travels extensively – sometimes thousands of kilometres – before it reaches our tables. The products we use are conceived in one part of the world, assembled in a second, with raw materials coming from a third, in order to be sold in a fourth. Even carrying out a simple business assignment might require extensive travel of workers, partners, suppliers and clients.

There are important differences in the amount and kind of mobility of different types of people and organizations: the daily routine of a two-earner household with kids has different mobility requirements than the daily routine of an unemployed single person, or a retired couple; the business networks of a local artisan have a different scope than those of a multinational corporation. However, today hardly any life can be lived or business run without substantial amounts of travel of people and goods. Mobility has become a basic condition for participation in society (Jones and Lucas, 2012), and a distinct form of capital (Kaufmann et al., 2004). It has not always been like this. Until the Industrial Revolution people and goods travelled much less, on average no more than a few kilometres per day. It is only after the introduction of such modern transport technologies as the train and later the car that this amount has grown exponentially, in parallel with the industrialization process, first in the West and later in the rest of the world. Today, in industrialized countries personal travel might hover around 40 kilometres per capita per day; prior to industrialization it was a tenth of that. For instance, Grübler (1990) estimates that in France up to the middle of the nineteenth century people travelled on average around 4 km a day; one century later the figure had risen to 10 km a day; and by the end of the twentieth century it had jumped to around 40 km a day. In a same age, daily travel distances are indicators of different stages and models of development. Schafer (2000) shows figures of average km/day/capita in villages in Ghana and Tanzania in the 1980s comparable to those of pre-industrial France, and in the same period around 20 km/day/capita in developed Asian countries, around 30 km/day/capita in Western European countries, and around 40 km/day/capita in the US.

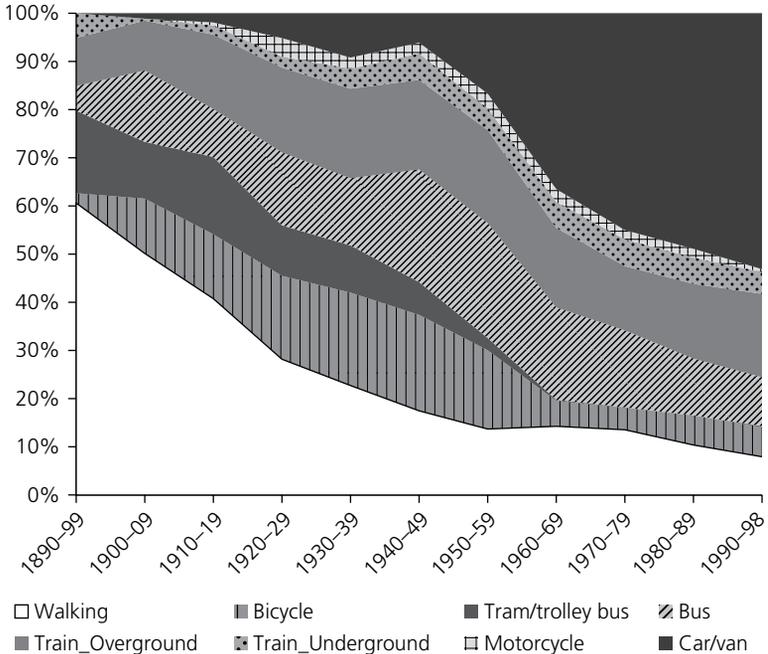
To help get better hold of the underlying dynamics, Figures 1.1 and 1.2 show detailed data about the home-to-work trip in Britain since 1890, the first highlighting relative changes in travel-to-work

Figure 1.1 *Relative change in average distance, speed and time of journeys to work in Britain since 1890 (1890–99 = 100)*



Source: Based on data from Pooley and Turnbull (1999)

distance, speed and time, the second highlighting changes in the share of transport modes. Figure 1.1 shows that travel distance grew unabated throughout the twentieth century (about fourfold, from 3.6 km in 1890–99 to 14.6 km in 1990–98). In the first half of the century this was mostly at the cost of an increase in travel time, which almost doubled (from 17.7 minutes in 1890–99 to 33.5 minutes in 1940–49). Travel speed was roughly constant in this period. In the second half of the century the growth in travel distance was instead enabled by an increase in travel speed (from 14 km/h in 1940–49 to 25.4 km/h in 1950–98, or around 80% faster). Travel time was roughly constant in this period. Two periods can also be distinguished in Figure 1.2. The first half of the twentieth century is marked by a growth in the share in travel to work of train, bus and bicycle, at the expense of walking and the tram/trolley bus. The

4 *Planning the Mobile Metropolis***Figure 1.2** *Modal share of journeys to work in Britain since 1890*

Source: Based on data from Pooley and Turnbull (2000)

second half of the century is marked by a growth in the share of the car, at the expense of all the others, with the exception of the train. Together, the two figures document a momentous, and inter-related, change in transport technology, activity patterns and travel behaviour. Most notable are the fourfold growth of home to work distance and the dramatic increase in travel speed enabled by the car. Chapter 2 will further dwell on these processes and their driving forces.

Mobile metropolises

The momentous growth in the mobility of persons and goods since the Industrial Revolution has been matched by an equally radical transformation in the size and form of cities. Cities have grown in size and perhaps even more significantly in form. Before the Industrial Revolution walking was the main, if not only, mode of

daily travel. Speed was low, meaning that average trips were short, and so were the distances between the places where people lived, worked and spent leisure time. While animal-powered transport (on land) and wind-powered transport (on water) had also a role, the distances between the places where raw materials were gathered, and where products were assembled and sold, were also short. Cities needed to be compact, and functionally mixed, to allow life and business to be carried out on a small surface. This also set limits to their growth, and the complexity of the life and businesses they could host.

The explosion in speed and distances following the Industrial Revolution changed everything. First the rich, and later – as transport costs decreased and their income increased – the middle and working classes were able to afford larger, more comfortable homes on the outskirts, or farther away but still within commuting distance from the jobs in the city centre. Industry and services could also profit from dispersal. Industry decentralized as cheaper land and room for expansion became a more important location factor than physical proximity to the workforce, and the local availability of raw materials and energy was not relevant anymore. Services could concentrate where specialized labour and facilities were available, and still serve extensive markets. In all domains geographical specialization could occur, as households and firms were presented with an increasing array of answers to the question of how to find a balance between location needs and available time and financial budgets.

In the process, cities expanded into the surrounding region and beyond, functions got pulled away from each other, and areas specialized. Crucially, mobility was keeping it all together, both a factor and an effect of the process (see Figure 1.3). Geographers use the concept of ‘daily urban system’ (DUS) to characterize the city on the basis of the activities that its inhabitants carry out on a daily basis, the location of these activities and the linkages between these activities (e.g. daily travel between places of residence and places of work). Today, we use terms like city region, megacity or megalopolis to describe the result of this still-unfolding process (Neuman and Hull, 2009). These are vast areas – sometimes in the order of thousands of square kilometres or more – where urban centres of different size, functionally specialized areas (shopping malls, industrial and office parks, airports, ports, freight terminals), and pockets of nature and countryside are distributed in apparent disorder, but are in fact functionally tightly connected by extensive transport infrastructure and continuous flows of people and goods.

