TRANSPORTATION SCENARIOS: LOOKING FORWARD AND LOOKING BACK IN FOUR EUROPEAN CITIES

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ABSTRACT

The post World War II history of European urban transport in cities involves trajectories, switching points and socio-political choices. The paper contributes to our understanding of such choices by confronting the results of a scenario-building exercise carried out with urban experts in four European cities in year 2000 with subsequent developments. Already by 2000 urban experts were committed to sustainable mobility in terms of both spatial planning and transport technologies. They tended to link these aspirations to the broader European social model. However they did not expect such aspirations to be realised. Subsequent developments in the four cities show that while experts' expectations in relation to urban transport technologies were overly pessimistic, the cities have not moved significantly towards sustainable mobility and new forms of car-based mobility have emerged.

Keywords: Sustainable Mobility, Scenarios, Urban History

1 INTRODUCTION

Urban transport policy is interwoven with urban planning policy: choices of transport technologies and transport systems are to some extent choices of urban form. In other words, choices of technology are certainly not just technical choices and not even purely economic choices. Precisely because such choices involve values and politics in the broadest sense, they are open to social scientific analysis: we can ask *why* and *how* and *for whom* specific choices were made. Such social science also has to be historical: transport choices made in the past have very long term consequences, transport choices are themselves embedded in long lasting historical structures. Furthermore, transport choices inevitably look to the future: they involve assumptions about what will happen and, even implicitly, aspirations as to what *should* happen.

This paper addresses the last of these issues. It is about urban experts' expectations and aspirations for transportation in four European cities in 2000 and what happened to these expectations in the subsequent decade. Experts hoped that mobility in their cities would become more sustainable and less car-based. In fact the reverse occurred.

The paper begins by arguing that the development of urban transport involves *path-dependent trajectories*, in which institutional structures lock in a particular set of technologies, and *switching points,* which move development in a new direction. One such switching point appears to have occurred in *some* cities in Europe in the 1970s, and this can be linked to the emergence of a distinctive European social model. This raises the question tackled in this paper: to what extent policy makers across Europe became committed to transport technologies and urban planning which differed from that of the previous period.

The paper then outlines research carried in the year 2000 on urban experts' aspirations and expectations in four European cities. The main empirical sections of the paper use this research to assess whether these views do show the emergence of a new commitment to sustainable mobility; we examine experts' scenarios for the future of their city and their understanding of possible urban transport technologies. The paper then confronts these views with an initial sketch of subsequent developments in the four cities. It concludes with the suggestion that experts in 2000 failed to fully

anticipate the development of a new form of 'post-modern' market-based automobilism.

2 PATH DEPENDENCY, SWITCHING POINTS AND SCENARIO-BUILDING

Car ownership and car usage have long become absolutely normal in all advanced societies. However, general discussions of 'automobilism' or 'automobility' can detract from the considerable diversity that exists both in the level of car ownership and in the level of car usage. Notoriously for example, car ownership and especially car usage are higher in the USA than in Europe. There are also well established differences between European cities in the extent to which people use for specific journeys cars as opposed to using public transport, or walking or cycling (e.g. Cameron et al, 2004). It is increasingly accepted that such differences have very little to do with the overall wealth of the city – rich cities often have low car usage and even low car ownership. Furthermore, within cities car ownership and car usage cannot be simply read off from income or occupation, since car usage also depends on location, life style and even personal ideology (Kaufmann, 2002). The fact that such variations exist increases the plausibility of public policies which attempt to reduce car usage.

Despite the growth of empirical sociological and even social historical research on urban transport in the last decade, our understanding of this diversity remains ad hoc and fragmented. Changes in the technological system of auto-mobility (the 'car system') needs to be located in broader accounts of social structure and social change. Political economy and historical institutionalism offer one possible framework. Thus we could differentiate between fordist (or modernist) and post-fordist (or post-modernist) forms of automobility. This could link car production and above all car usage to different social structures, different types of employment, different types of economic structure. We could contrast the regular and routinised journeys of the fordist period (home/suburb to work/city centre) with the more diffuse patterns of the contemporary city where most journeys are suburb to suburb and are more dispersed in time.

Such long term periodisations need also to be located in different physical geographical contexts. The great metropolises of 19th century Europe were built around a public transport system which was created before the advent of the motor car. By the 1920s cities such as London, Paris and Berlin had systems of trams, metros and suburban rail that allowed their inhabitants to move easily over a large densely inhabited area. In many ways the inter-war period was the golden age of public transport (Wolf, 1996). Unlike in the USA (with the partial exception of New York), these systems were not then destroyed. As any tourist will tell you, you do not need a car to explore a European city – you move around on foot and you extend your pedestrian journeys with relatively short distance journeys on public transport.

When World War II ended, most of Europe had not yet been shaped by the private car. Photographs of the bombed cities of Europe in the immediate aftermath of the war often show trams – presumably on rapidly restored tracks – threading their way through the ruins with hardly a car in sight. In the 1930s Germany had certainly embarked on its famous programme of Autobahn construction, but in fact Hitler's new motorways were largely empty. It was in Britain, or more precisely Southern England, that the private car first became an item of mass consumption. By 1939 private car ownership had reached two million and the car industry was producing 300,000 cars a year (Stevenson, 1984: 390f): the family car, just like the owner-occupied house in the suburbs, now became part of 'normal' life for the middle classes.

This normalisation of the car occurred in the rest of Europe only after World War II. During the 1950s the car became a key symbol of modernity, along with other mass produced consumer goods. Across Europe the car industry was at the centre of the mass production industry and car companies were national champions, often interwoven with the state or even in outright state ownership. The state was also crucial to the consumption of the car, planning and building new 'motorways', 'autoroutes' and 'Autobahnen'. However, even here Europe remained different to the USA. There the construction of the interstate highway system in the 1950s, claimed to have been the world's biggest construction project, along with the subsequent expansion of domestic airlines, ensured that US railways became marginal for passenger transport except in a few areas of the North East. By contrast, European railways were not destroyed, although many small rural branch lines were closed. There were major investment programmes in many systems after World War II, although they were not able to compete with road traffic especially in freight transport. Furthermore, road construction was uneven, with Britain only beginning a

motorway construction programme in the very late 1950s.

Nonetheless, through the 1950s and 1960s the general direction of policy was clearly towards the motorisation of cities with American developments usually held out as indicating the future. Although car ownership remained well below US levels, urban development usually involved the construction of urban motorways which began to destroy the fabric of the city.

During this period there was some limited expansion of underground railways in the very largest cities. In the 1950s underground metro lines were built in Rome and Stockholm. However, part of the attraction of the underground at this period was precisely that it could relieve congestion on the roads and so facilitate car traffic. In West Berlin by the end of the 1960s all the trams had been removed, to be replaced by buses and an expanded U-Bahn system – contrasting with the eastern part of the city where trams are still in use.

From the 1970s onwards however the development paths of *some* European cities began to diverge from those of America, just as at the same time European welfare states as a whole became more different to that of the USA. The radicalisation of the late 1960s and early 1970s generated new social movements which contributed to a radical change in urban policy. A new urban aesthetic re-valued the existing urban fabric, areas of the city centres began to be pedestrianised, plans for urban motorways were slowed and even abandoned. Within this, and very much part of the expansion of the welfare state of the decade, urban public transport was expanded in particular with investment in urban rail systems. Differences within Europe also grew. Whereas the 1970s and 1980s saw a dramatic investment in urban rail in German cities, there was virtually no investment within the UK. (Whitelegg, 1988:48f). The 1970s are therefore a switching point in European urban transport trajectories. *Some* cities in *some* countries begin to move down a different path.

In the 1990s there was a second wave of urban public transport expansion. Within cities there was an almost complete halt to new road projects, and it became widely accepted that urban transport problems could not be solved by road building. Public transport was promoted, but now with slightly different arguments than before. There was a new concern for the quality of urban life, often linked to notions of urban economic competitiveness. Public transport was one of the policy areas increasingly appropriated by sub-national governments at urban or regional level. Indeed, public transport became a crucial area of activity for the resurgence of city and regional government across Europe. Furthermore, effective urban public transport was increasingly seen as contributing to environmental sustainability by reducing car usage within urban areas. In the new century, would these changes become built into the trajectory of more European cities? Above all, would car usage finally decline in importance as new transport systems developed in tandem with more compact urban areas?

Achieving such changes would involve a paradigm shift in urban transport away from auto-dependence. The sustainable mobility paradigm (Banister, 2008) can be thought of as involving both technologies of transport and spatial planning. Central to sustainable mobility is reduced expenditure on roads and greatly increased provision of public transport. Sustainable mobility also involves measures that restrain car use through re-allocating road space and which directly encourage walking and cycling. Instead of treating transport as a derived demand ('predict and provide'), such planning tries to reduce the demand for travel, especially car-based travel. It means designing compact cities with accessible local facilities so that people can choose whether or not to own a car. In the most general terms, it marks a reinvigoration of the ideal of the European city (Kazepov, 2005), an ideal which at least in Britain had been abandoned by the end of the 19ᵗʰ century (Hunt, 2004).

Given that, as we have seen, political institutions and social structures have influenced transport technologies in European cities, such changes in technology in the future will also involve social and political change. However, the nature of these changes is far from clear and is often contested. For example, in the second half of the 20ᵗʰ century urban public transport in Europe was almost entirely provided by state owned companies. Today however many such enterprises have been privatised. While some claim that this will inevitably mean a decline in public provision, others argue that it will lead to better services and higher usage (Wickham and Latniak, 2010). Furthermore, although compared to the 1950s there certainly has been a greater acceptance across Europe of investment in public transport and of some restraint on car usage in cities, there is no universal consensus on individual policy measures,

whether these involve road building, road pricing, improving suburban rail lines or building new metros.

Once transport technology is seen as even to some extent the result of socio-political choices, then clearly people's beliefs about transport are important. It matters what participants in urban politics consider to be possible, what they want and what they expect, and what connections they make between different technologies and between technologies and their socio-political context. One influential group in policy debates is what we might call the *urban experts*: urban planners, transport planners, lobbyists and interested academics. These are *not* those who necessarily make the decisions that matter, not least because many of the important decisions occur almost out of sight of the public political process. Although this too is variable, it does seem to be the case that *usually* rail projects, whether light rail or metro, have a higher public profile than road-building decisions, even though arguably the impact of a major road scheme is far greater, and that this can only partly be explained by the fact that many road schemes are incremental increases in capacity[1]. Equally, planning decisions such as new housing areas or retail parks have major impacts on transport in the city, but they too often occur out of the limelight. Nonetheless, to the extent that there is public debate, urban experts make an important contribution. Accordingly, their views are important in their own right.

A shift towards sustainable mobility raises questions about the views of such experts. Firstly, is there a new consensus across Europe amongst such people on the basic principles of sustainable mobility as outlined above? In other words, what changes in urban planning and transport technology do such experts want? Are they agreed amongst themselves? Is sustainable mobility seen as universally desirable and is it defined in the same way across Europe? Secondly, do these experts link their conceptions of sustainable mobility to a broader socio-political context? For example, is environmental sustainability seen as interwoven with social inclusion and social cohesion? For such experts, is market provision inherently inimical to sustainability? Finally, how do such experts evaluate the impact of their own views? They may have expertise, but does this mean that they have influence? Sustainable mobility may be desirable,

but do they consider it achievable? Once again, differences in Europe will be important here and will tell much about European cities' chances of achieving sustainable mobility.

3 RESEARCH APPROACH

In order to answer these questions this paper uses data from interviews carried out in 2000 with urban experts in four European cities; it also confronts this material with actual developments in the four cities. This section of the paper describes how the original interviews were carried out and how they are re-utilised for the specific purposes of the paper.

The interviews formed the end of a project on 'scenarios of sustainable mobility' in European cities which I co-ordinated[2]. Two cities – Bologna and Helsinki - were chosen as examples of relatively good urban practice: they had explicit policies to reduce car usage, they had well developed public transport and relatively successful urban planning. In both cities political movements in the late 1960s and early 1970s had been decisive in pushing transport away from continued development of the motor car, and such policies had subsequently become part of a broad-ranging consensus within the city and were supported by a broad urban coalition. Two other case study cities - Athens and Dublin - were the exact opposite. They were notorious both for their traffic jams and for their reliance on the private car; they were an international byword for failed urban planning; they had ineffective public transport. Crucially the urban social movements of the 1960s and 1970s had passed them by, and there was no urban coalition to carry forward policies that restrained the private car.

The research was carried out by four separate teams, one for each city; overall co-ordination and analysis was carried out by the Dublin team[3]. For this stage of the project we invited urban experts and policy makers in each of the four cities to an extended group discussion. This discussion was intended to produce a scenario for sustainable mobility in the city. The scenario was defined as

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[1] Of course, the extent to which road building projects are debated is itself a political process.

[3] Team members were: D. Balourdos, A. Mouriki, K. Sakellaropoulos, E. Theodoropolos, K. Tsakiris (Athens); E. Battalgini, F. Farina (Bologna); M. Lohan, P.Poli, J. Wickham (Dublin); M. Javela, T. Rajanti (Helsinki).

involving both the overall context of mobility and the specific technologies of mobility. Despite our best attempts, in every city meeting politicians from the established political parties were conspicuous by their absence, whereas representatives of the local Green parties attended in Dublin and Helsinki. In Bologna a large proportion of the group was drawn from social activists; in Dublin various types of academics were particularly over-represented. While our original intention was to interview decision-makers in general, the members of the final groups do in fact correspond to those 'urban experts' defined above.

To structure the different aspects of the experts' views we used a slightly adjusted version of an established transport scenario model (Nijkamp et. al, 1998). This so-called spider model is based on the assumption that transport systems involve a number of *inter-related* policy aspects – spatial, economic, institutional and social. Each aspect can be conceptualised as comprising two distinct dimensions and each dimension involves a continuum between two extreme positions. For example, the spatial aspect of the scenario includes the dimension of **urban form**. Here one extreme would be the highly concentrated and high density **compact city,** at the other extreme would be the more **dispersed** and low density suburbanised city. Figure 1 presents the basic model as adapted from Nijkamp et. al (1998).
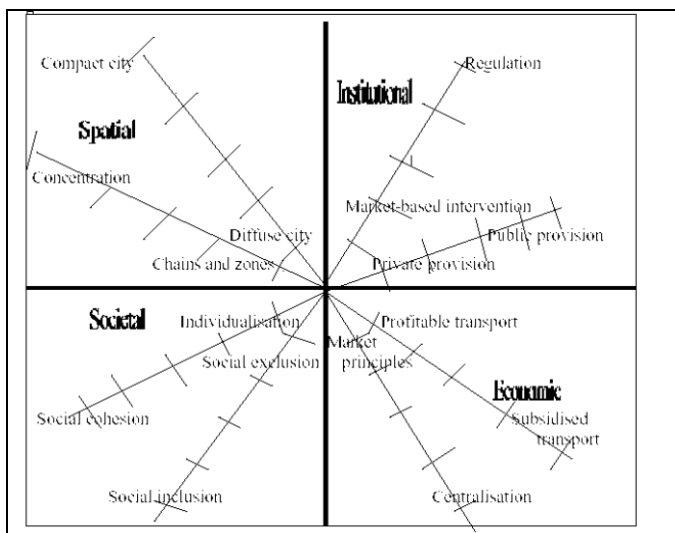

Figure 1 The Scenario Model

For this exercise we asked participants to choose points representing how they would *like* the city to be ('desired scenario') and how they *expect* the city to be ('expected scenario'). Furthermore, because the dimension takes the form of a numerical scale, it is possible to calculate the average value given to each dimension by all participants or indeed sub-groups of them[4].

The logic of the scenario is that the four different aspects and indeed their component dimensions are all independent. Thus a position on one dimension does not necessarily involve a similar position on any other dimensions. Furthermore, there is no explicit linkage between each dimension and the form of urban mobility. Equally, although the versions of the original spider diagram had been used to construct scenarios in which sustainability was an over-riding objective (Rienstra and Nijkamp, 1998), we made no explicit link between any dimension and environmental sustainability. How and why people make such links is one of the empirical issues we investigated.

While the spider diagram is concerned with the overall context of mobility, we also asked experts to evaluate various transport technologies. Once again they were asked to score these in terms of both whether they *expected* them to be widely used, and whether they *wanted* them to be widely used, in both cases using the same timeframe as for the scenario. The 'technologies' ranged from increasing the supply of roads, through improved public transport provision to regulation (e.g. road pricing) and alternative technologies (e.g. electric cars). Here again we treated the technologies as independent of each other. Of these technologies, increasing the road supply, whether by new roads or by road-widening, would be inimical to sustainable mobility, whereas all the other technologies could be part of a sustainable mobility package.

Whereas the spider diagram was originally to specify different possible scenarios for transport policy (e.g. Rienstra and Nijkamp, 1998), we treat here its elements in different ways. The dimensions or spokes of the diagram mostly refer to the possible *context* of sustainable mobility policy. We use the diagrams to specify the social, economic, institutional and spatial framework within which the experts saw mobility policy occurring. We do not assume any particular link between these

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[4] It should be noted that where this diagram is used to present the scores each dimension has been reversed. Thus for example on the dimension 'urban form' the position 'diffuse city' is at the **outer** rim of the diagram, while the position 'compact city' is at the **inner** edge of the diagram. This was necessary in order to generate the charts with Excel while keeping the original scores.

dimensions and sustainability, but ascertain whether the experts themselves made such links.

One spoke of the spider is however treated differently. Given that sustainable mobility involves reducing the demand for travel through urban planning, we treat the spatial dimension 'compact city/diffuse city' as a component of sustainable mobility itself[5].

Each team followed guidelines for the meeting which had been circulated by the Irish team. The meeting began with a presentation of the key findings of the research project. The team then explained the model and illustrated by showing the scenario for the city which they themselves expected; they also prepared their own desired scenario, but did not present it to the meeting.

We then asked the participants to fill out a questionnaire *in* the meeting. The questions referred directly to the policy dimensions of the model with some additional questions in relation to specific technologies. After this data collection stage, the results were immediately analysed using the SPSS statistics package to generate mean scores of the participants' policy choices and preferred policy outcomes. These results were then mapped onto the model and presented to the group towards the end of session.

While the questionnaire data was being analysed, the meeting was used to form a focus group discussion. Here the experts were asked to explain the choices that they had made on the different dimensions of their desired and expected scenarios, the extent these took into account environmental and social concerns, whether they felt that their desired scenario was possible within a 'business as usual' course of development, what factors they believed shaped their expected scenario and what would be needed to move in the direction of their desired scenario.

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[5] The status of the other spatial dimension, 'European spatial organisation', is more ambiguous. It could be argued that if urban development occurs in a series 'chains and zones' this is perfectly compatible with the cities themselves being relatively compact, and would reduce travel demand more so than if development is concentred in a few mega regions. The coherence of the spider model would therefore be enhanced if the scoring of this dimension was reversed.

Each national team wrote up a report of their meeting following an agreed template. These reports were then edited and collated together with an introduction and analytical conclusion to form the workpackage report for this part of the research project.

4 EXPERTS' SCENARIOS

Figure 2 represents the average expected and desired views of all four expert groups. On all dimensions except that of European spatial organisation, the experts' desired positions are closer to the centre of the web than their expected positions. If as suggested above, the scoring of this dimension was reversed, the picture would be completely consistent.

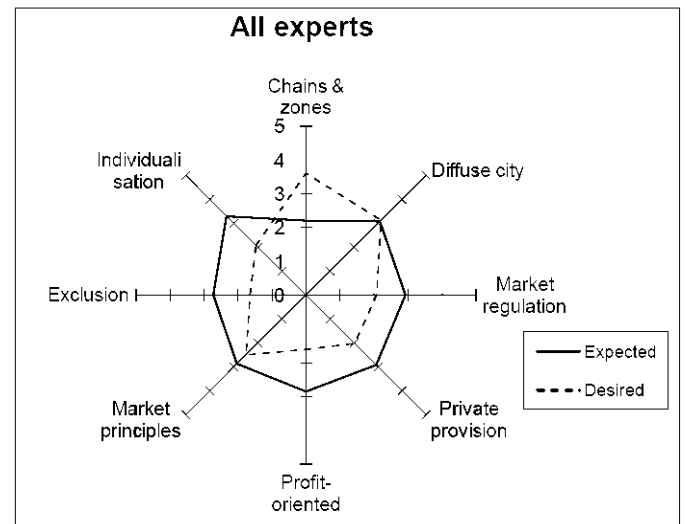## 4.1 Experts' desired scenarios

Figure 2. All experts' expected and desired scenarios

We begin our analysis by investigating the differences between the cities in terms of the experts' aspirations. Figure 3 presents the desired scenarios for the four groups of experts. The spatial aspect generated most disagreement. In terms of regional development (*concentration* versus *chains & zones*) most experts wanted what they considered a balanced population development rather than the concentration of growth at a few major centres. However, within the Finnish group there was no consensus. One set of participants welcomed the trend towards concentration of population in a few major urban areas, largely on the grounds that this was the only way they could receive adequate services. In most countries such a deliberate policy of rural depopulation is rarely explicit, though in the past it has been part of social democratic regional planning in Sweden. By contrast, other

Finnish experts argued that this move to the large cities undermined the traditional Finnish way of life and was anyway environmentally less sustainable.
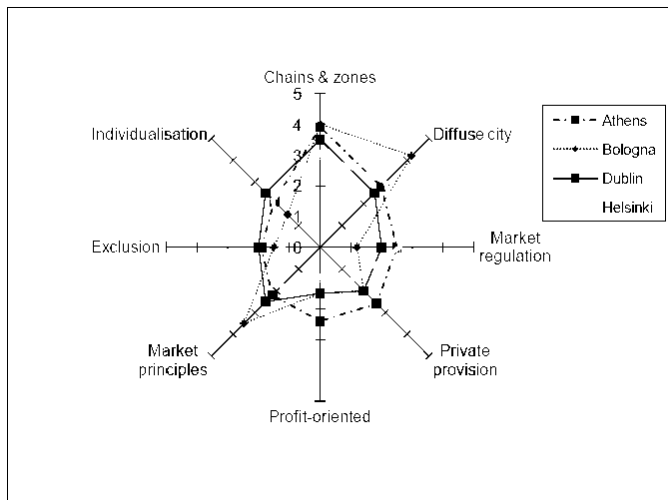

Figure 3. Experts' desired scenarios

In terms of the 'institutional aspect' of transport provision, all the groups stressed the role of the state and of public control and regulation. In Helsinki, where there was already some experience of limited competition on the bus lines, the group argued that regulation and market mechanisms can be combined and are not necessarily antagonistic. This was the clearest acceptance of some role for the private provision of 'public' transport. Here however the group insisted that overall public control was crucial, and that this had to involve public control of physical infrastructure. While this debate over the institutional structures for public transport has become commonplace recently, it is noticeable that nowhere among our groups was there a strong demand for more private provision.

The debate amongst the experts also raised two issues that are not usually heard in the conventional discussion, dominated as it is by the categories of economics or engineering. In Bologna participants stressed that public transport was 'public' in the sense of sociability – travelling by public transport allowed you to meet people, it was part of living in a city with fellow citizens. This rather understated connection between public transport and public citizenship was also developed by participants from Bologna and Helsinki, who talked of the importance of 'moral pressure' in getting people not to use cars. It both senses therefore public transport is seen as something belonging to the public realm, not as simply a technical solution to a given mobility need. Presumably this understanding of the public nature of public transport is difficult to reconcile with its private provision.

Significantly, there was universal support for financial subsidy of public transport. All experts accepted that public transport would require public subsidy, with the Finnish group in particular stressing that the reason for this was essential to ensure accessibility was available to all. Even amongst those directly concerned with the actual provision of transport in cities, there was clearly no discernible strong desire for private enterprise participation and deregulated solutions which were already being widely promoted by some national governments and the European Commission. Furthermore, even in the two cities where state owned public transport has been a manifest failure, namely Dublin and Athens, there was no strong pressure for outright privatisation and marketisation.

The two 'societal' dimensions are 'individualisation versus social cohesion' and 'exclusion versus social inclusion'. Here all the experts opted for social cohesion and social inclusion. This is hardly surprising, since almost by definition everyone is in favour of social cohesion and social inclusion! This is the sort of position can only be explicitly rejected by a clearly formulated neo-liberal ideology which regards inequality as desirable in itself and which values individualism so highly that it is prepared to tolerate high levels of social anomie. Such an ideology remains unusual in Continental Europe, unlike in the USA. Clearly most participants regarded social inclusion and social cohesion as linked, although interestingly in the Helsinki discussion it was suggested that social inclusion is the basis for individualisation of the full development of each individual's potential.

As far as the layout of the cities themselves was concerned, all the experts were opposed to European cities developing as suburban cities on the US model. However, there was disagreement in each group as to the extent to which their city should become 'compact'. Thus in Helsinki, some felt that making the city more compact would mean a loss of green space and be 'unjust' or even 'unhealthy'. In Dublin one participant argued that:

> I believe we could be living in a compact, dense city; a post-industrialised city, in a civilised city that is clean and efficient. I don't believe we are going to (Dublin focus group participant)

We will return to the issue of 'not getting what we want' later, but it is important to notice that this view was not shared by all the Dublin group:

> I think we don't want to have a tightly focussed European city where the centre is very dense. I think we are likely – just looking at the character of Dublin city as it is – we are likely to have a more diffuse shape and I don't necessarily think there is anything wrong with that. In my housing estate, for example, there is a huge big green pitch for kids to play football. I am not a believer, personally, in the European model of apartment living, which is often held up as the great way to do cities. I think it might be good from a <u>transport</u> point of view but not necessarily from a <u>society</u> point of view (Dublin focus group participant).

By contrast this notion of the European city was supported unanimously in the Bologna group. For them the city centre was an important source of identity for the citizens, as well as a place for recreation and if possible for habitation. This meant that for the Bologna group, the city as a whole should remain compact, as the Bologna report stated, in what is effectively a summary of sustainable mobility:

> In the experts' desired scenario, the city is an accessible, socially compact and liveable place, where the car becomes a residual means in the economy of mobility (Bologna scenario report).[6]

4.2 Experts' expected scenarios

Turning to the future of their cities, the experts were mostly pessimistic. Whereas their desires tended towards the centre of the 'web', their expectations (with the exception of 'concentration' versus 'chains & zones') tended towards the rim. Interestingly, the Dublin experts were the most pessimistic of all the expert groups (Figure 4).
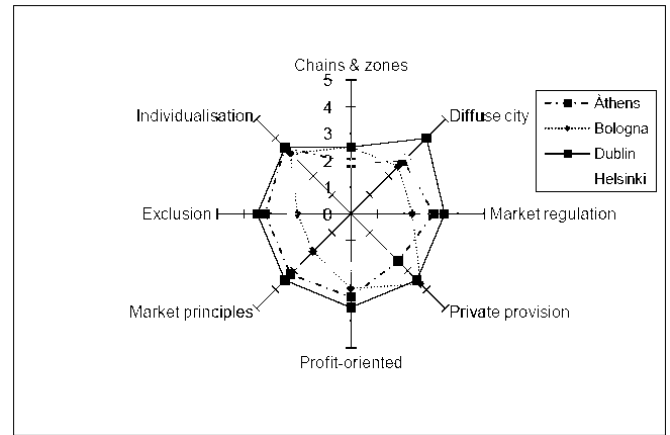

Figure 4. Experts' expected scenarios

In terms of spatial developments, all the experts expected population growth to be concentrated in the main urban regions, even if they would have preferred a more evenly distributed growth.

Rather similarly, the experts all expected a move towards more regulation through market mechanisms and more private provision of transport. Here again the Dublin experts took the most 'extreme' position. Our measuring instrument does not really measure the extent of change from the status quo. The comments however suggest that in both 'worst case' Athens and 'best practice' Helsinki, the experts expected very little actual change, so that state regulation would continue to be more important than regulation through the market, and public transport would continue to be largely provided by publicly owned enterprises. By contrast, in Bologna and especially in Dublin the experts anticipated a substantial shift towards market regulatory mechanisms and the private provision of public transport. None of the experts' contributions suggested that they anticipate any major benefits from these changes, and in the Bologna discussion it was suggested that they would create greater problems of co-ordination.

As we have already seen, the experts frequently found the dimension 'organisation of the European economy' outside their area of competence and not really relevant to transport issues. In terms of the subsidisation of public transport experts in Athens and Bologna in particular stressed that public transport would always need subsidies, no matter how it was organised.

Most experts anticipated a future of greater social inequality with social welfare systems becoming less redistributive. In Athens the experts expected the effects of the growth in social inequality would be softened by the continued importance of the family, thus echoing social policy

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[6] The Bologna experts' score of 4.2 on this dimension indicates a desire for a very diffuse city, but this seems to be contradicted by their comments.

writers who have suggested that the family lies at the heart of the 'Mediterranean' version of the European welfare state (Ferrara, 1996). At the same time however the Greek experts foresaw a growth in individualism and a diminishing regard for the common good. In Bologna too a similar theme emerged. Although the experts there foresaw that in the future the social welfare system would continue to restrain social exclusion, they worried that conventional mass participation in politics would continue to decline and that the social welfare system would becoming increasingly disconnected from new forms of politics and less able to tackle new forms of social exclusion. The comments from the Helsinki group were rather more optimistic. They were aware of growing inequality and growing individualisation; and they suggested that both changes were symbolised by the growth of gated communities of new housing. Nonetheless, their optimism derived from the fact that they did not expect such forms of physical and social withdrawal to become normal.

Turning to the compact city issue, the dimension we have directly linked to sustainable mobility, only the Dublin experts expected an extensive suburbanisation of their city itself. The reasons for this varied. In Bologna relatively compact cities were seen as inherent in the Italian way of life

> There isn't the English or American mentality that you work until Friday evening and you stay at home with your wife and children on Saturday and Sunday. In Italy, there is the custom to return to the centre to have access to services, cinemas, restaurants etc. This leads me to believe that there is an alternative to this expansion, in other words, people move out of the city because they are forced to because of conditions but if they can, they stay in an acceptable area in the centre (Bologna focus group participant).

In Athens high density would continue because the infrastructure was inadequate for more dispersed settlement, and only in Helsinki would this happen as the result of planning policies. It is often argued that cities land use policy should promote higher density in cities *in order to facilitate public transport.* Paradoxically however, our scenarios do suggest that some of our cities will remain relatively compact, but not, according to our experts, because of any closer linkage between land use policy and transport policy.

5 EXPERTS AND TECHNOLOGICAL STRATEGIES

As well as completing the 'spider's web' scenarios, the experts also discussed various transport technologies and the extent to which they saw them as *desirable* and the extent to which they *expected* them to be used. It is important to notice that these are discussed as 'technologies', i.e. outside of any specific institutional structure (such as discussed in the scenarios) and without any explicit discussion of costs. Some technologies (physical infrastructure, whether road or rail) would have a high capital cost as well as running costs, all of which would probably have to be subsidised by the state in some form. Other technologies mainly impose actual costs on car users (e.g. parking fees or road pricing) or physically restrain them (e.g. bus lanes). Finally the new technologies (e.g. electrical vehicles) provide alternative transport means within a system which is still based on individual mobility.[7]

Repeating the form of analysis used for the scenarios, Figure 5 presents the technologies experts wanted introduced and those which they expected to be introduced.[8] Although roads and rail infrastructure both involve costs, it is noticeable that the experts clearly preferred expenditure on rail systems. The three rail technologies all scored higher than any other technology apart from the new vehicle technologies. However, while the experts did not see roads as particularly desirable, they nonetheless expected them to be built, while conversely they saw rail systems as desirable but less likely to be actually built.

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[7] Obviously this is a simplification. Subsidies to roads (and cars) operate in different and less transparent ways than subsidies to public transport. Alternative forms of private transport may well involve different forms of private mobility – for example, if electric cars have a shorter range and lower speed, they would be less compatible with suburbanisation than existing cars.

[8] Desired scores were reported for all four cities; no 'expected' scores were reported for Dublin. However the Dublin report states that while the Dublin experts favoured rail-based technologies over the construction of more roads, they in fact expected more expansion of roads than rail. Dublin 'expected' scores would not therefore undermine the analysis of this section.
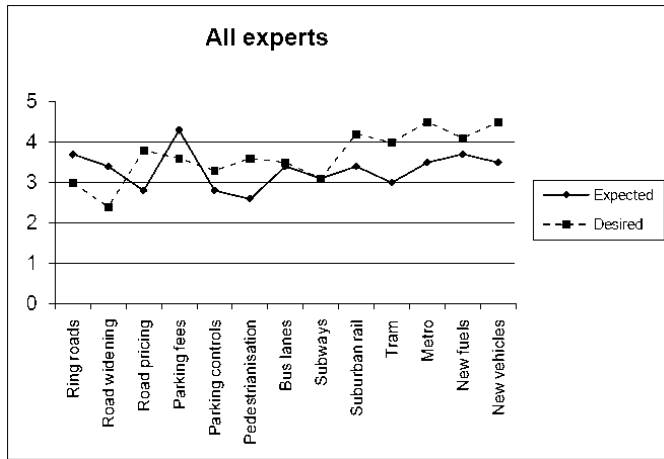
Figure 5. All experts' expected and desired technologies

By contrast for regulatory measures (bus lanes, etc.) the experts' aspirations appeared more realistic. Experts wanted some increase here, and this in line with what they expected to actually happen. Of the market measures, parking charges got a higher 'expected' than 'desired' score, whereas the reverse was true for road pricing and reducing parking supply. Arguably the experts wanted measures taken which would actually reduce car usage, but suspected that these measures would merely be introduced to raise revenue.

5.1 Experts' desired technologies

Figure 6 presents the experts' desired technologies in the four different cities. It shows that the key finding of the aggregate level analysis remains true at the city level: in each city experts were in favour of rail-based solutions and less favourably disposed towards road-building. There are however some differences between the cities on this and other technologies.
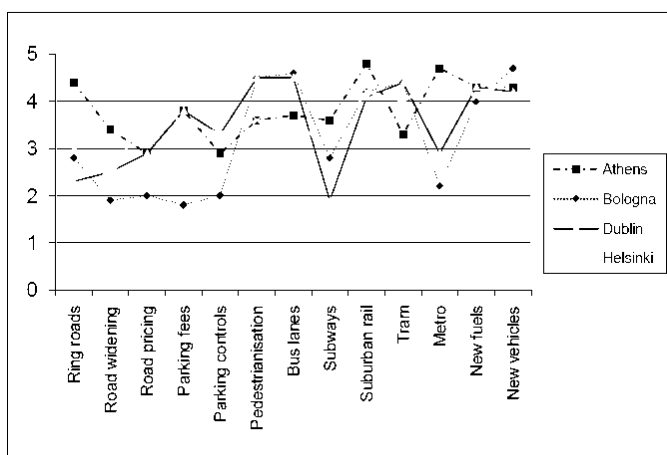

Figure 6. Experts' desired technologies

In terms of road building, Athens was unusual. Much more so than their colleagues elsewhere, the Greek experts were strongly in favour of ring roads and even supported road-widening within the city. The very limited construction of new roads in Athens before the construction boom of the Olympics was not because of any political decision, but because of general institutional problems. At the same time, streets were already filled with cars. In many other European cities it was already the conventional wisdom of transport specialists that road building merely generates more traffic, but this had little intuitive appeal in Athens. At the time of the research Athens had not had the negative experience of other cities, where new roads have destroyed the inner city without solving the traffic problem. In Athens the city was being destroyed - not by new roads, but by cars clogging existing roads.

There is also a divergence on the desirability of a metro system. Metro extensions scored highest in Athens and Helsinki, both of which already had a metro. By contrast, building a new metro received rather low support in Bologna and Dublin, neither of which had a metro at the time. The Bologna result can plausibly be explained in terms of the unsuitability of a metro for what is the smallest of our four case study cities. By contrast, even by 2000 detailed plans for a metro in Dublin had already been discussed for decades, but the metro was largely posed as a partial alternative to on-street rail, not, as in Helsinki, as a complement to it. Interestingly, in Athens a tram system had been mooted as an alternative to an extension of the metro, but the experts give the metro the higher rating.

In terms of the desirability of controlling car usage, Bologna emerges as the outlier. Although Bologna was one of the first Italian cities to introduce controls on cars, by 2000 the experience had become increasingly negative. Traffic control in Bologna had become widely seen as simply a restriction on citizens' wishes, rather than as part of a new and improved mobility for all. The Bologna reports also lead to the suggestion that restrictions on car usage should involve some appeal to social citizenship or 'social capital' – an asset that appeared to be declining in Bologna.[9]

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[9] Another term for social citizenship could be 'social capital' (Putnam, 1993). It is paradoxical that the term was introduced into social science by Robert Putnam in his study of civic activism in North-Eastern Italian cities – such as Bologna!

Finally it is worth noting that pedestrian subways are often viewed negatively - as dangerous and unattractive spaces - while new vehicle and fuel technologies appear as self-evidently desirable to all.

5.2 Experts' expected technologies

Disaggregating the experts' expected technologies shows that within each city it was still true that expectations for road building were higher than for rail infrastructure (Figure 7). In Bologna scores for both forms of road building were higher than those for all rail forms; in Athens the only exception to this is the metro (doubtless partly because the metro is at the moment the largest transport project within the inner city area). Only in Helsinki did rail projects come very close to road-building, and in Helsinki too, all three forms of rail infrastructure scored highly. In the experts' expectations therefore, Helsinki came closest to moving away from merely continuing to invest in the existing car system. Finally it should be noticed that Helsinki is also remarkable for the extent to which all technologies received relatively high scores – in other words, the experts in Helsinki expected their city to be implementing a broad range of measures to improve mobility.

Figure 7. Experts' expected technologies

6 EXPECTATIONS IN CONTEXT

These interviews suggest that already by 2000 European urban experts had become advocates of what Bannister later termed the sustainable mobility paradigm. They preferred the expansion of public transport in all its forms over continued road building. Indeed, only in Athens was there any real support for any new road projects at all. While they accepted that private cars would continue to be important, they hoped to see the introduction of more environmentally friendly vehicles and fuels. Crucially, while they supported measures to directly restrain car usage (road pricing, parking fees, parking controls), they considered all forms of rail-based public transport to be more important. Turning to the spatial planning aspect of the paradigm, the experts were fundamentally committed to the idea of the compact city and often identified this as a specifically *European* model. Our interviews suggest therefore the emergence of a clear European policy consensus in support of sustainable mobility and furthermore, that this is defined in broadly the same way across Europe.

Furthermore, urban experts did appear to see sustainable mobility as linked to an important role for public authorities and the state. Although they gave importance to market principles in the general organisation of the European economy as a whole, they clearly wanted public transport to be subsidised and were somewhat sceptical of the effectiveness of private provision and of regulation through the market. The Finnish experts were the only group with experience by 2000 of the private provision of public transport (recall that Helsinki's bus routes were already provided by private companies). While their experience had been positive, they stressed the importance of overall public direction and regulation. Finally, this stress on the role of the state went together a desire for greater social inclusion and for some restraint on pure individualism. Transport, for these experts, did seem to be implicitly part of what I have elsewhere termed 'the European social model' (Wickham, 2002; Alber, 2010).

If our experts wanted sustainable mobility, they were however not very optimistic that it would be achieved. They expected road building to continue more than they would hope, and public transport to be expanded less than they would desire. Although they were more hesitant, they also expected suburbanisation to continue. For them, the compact European city might be an ideal, but the reality lay more in the past than in the future. They expected institutional developments to favour private provision and regulation through the market. Here however there was an important divergence between the concerns of these urban experts and those of many urban transport policy makers. Although the dimensions of the scenario building exercise focused strongly on issues of market versus state regulation and provision, such questions did not particularly concern them.
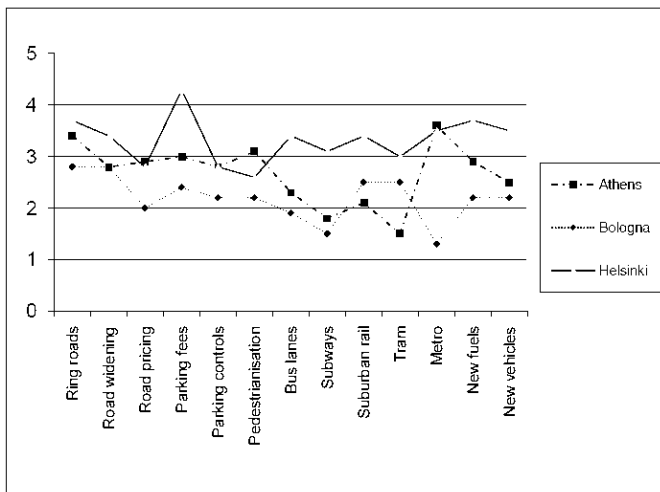
Privatisation, deregulation, competitive tendering for public service contracts – all the institutional innovations that were already attracting much attention at national and EU level – all played relatively little role in the open-ended discussions. In other words, such 'solutions' appeared to these experts at least as at best marginal and at worst irrelevant to actually tackling the transport issue in their cities. And finally, the experts saw the broader social context in gloomy terms: they might desire more social equality and more social capital, but what they expected was a society of greater inequality and greater individualism.

There were also significant differences between the experts. These confirmed and illuminated the systematic differences between the four cities that emerged elsewhere in the research. In the study as a whole Athens and Helsinki were our extreme cases, respectively the 'worst' and the 'best' cities in terms of car usage and car dependency. In these two cities the experts' aspirations and expectations were relatively close to each other. In Athens the situation was so bad that our experts' aspirations appeared to have been lowered in line with their expectations, while in Helsinki the experts' aspirations were really for minor improvements within what they considered already a reasonably adequate status quo. By contrast, in both Bologna and Dublin the situation appeared much less stable. In Dublin, the experts' aspirations diverged dramatically from their expectations, suggesting a pent-up frustration which perhaps reflected the contrast between the ambitious plans of the key transport authority (DTO, 2000) and the reality of congested roads and inadequate public transport. In Bologna, the experts looked nervously into the future, expecting an erosion of the political structures that had sustained the city's pioneering initiatives in the past. We now turn to evaluating these expectations.

The original research project originated in the belief that the current levels of car usage in European cities were a major threat to environmental sustainability. However, we deployed our competence as social researchers not to investigate this issue directly, but to ask about the possibilities and implications of change. The car is central to contemporary life: realistically, how could a reduction in car usage be achieved and what would be the social implications?

The scenarios provided one starting point. The experts' aspirations and expectations, provided evidence as to the possibilities of change. The first part of this paper suggested that motorisation was partly halted in some cities in Europe during the 1970s. Of our two case studies, both Helsinki and in Bologna experienced 'switching points' in the late 1960s and early 1970s: the first pedestrianisations in the Centro Storico and the experiments with free public transport in Bologna, the rejection of the Smith-Polvinen urban motorway plan in Helsinki. These social movements were part of a process which moved these two cities decisively away from continued fordist car dependency. However, such changes are not necessarily permanent. For example, also in the 1970s social movements helped to halt a massive programme of urban motorways in Melbourne. However, in recent years there has been a revival of large scale road construction in the city, financed by public private partnership and linked to a new ideology of urban growth and competitiveness (Davision, 2004).

In terms of transport technologies many of the experts' pessimistic expectations have *not* been realised. The expansion of rail-based transport has been on the policy agenda in each of our four cities. The most dramatic case has been Athens. By 2010 the city had restructured suburban rail lines and integrated them with an entirely new tram system and a vastly expanded metro. By the same year our other worst case city, Dublin, had two (unconnected) light rail lines and improved suburban rail including several new stations. In Helsinki there had been some minor extensions of the tram system, some enhancement of the metro, and work had started on the long debated major extension of the metro to the western city of Espoo. Only Bologna saw no extension of rail transport within the city, although discussion of a new light rail line centring on the nearly completely rebuilt mainline railway station does continue. In all four cities, as elsewhere in Europe, there has been a clear trend to maintain and improve the city centre as a leisure and tourist destination, what has been called 'museumification' (De Frantz, 2005), and this does require improved public transport. Dublin and Athens also saw additional restraints on car usage in the city centre, even though Dublin's historic College Green continues to be a traffic intersection (albeit with bus lanes).

Nonetheless, facilities for the motor car have also been enhanced. In the immediate environs of all four cities motorway construction has continued (e.g. completion of the Helsinki-Turku motorway and an entire inter-urban motorway network in

Ireland). Within the cities there has been the construction of massive urban motorways in Athens and of the Port Tunnel in Dublin, although especially the latter has been justified on environmental grounds as taking traffic out of city centre.

In terms of spatial planning the experts' worst expectations have been fulfilled. Everywhere urban sprawl has continued, with Dublin leading the pack. Indeed, Dublin's sprawl was highlighted as an example of bad planning by the European Union (European Environmental Protection Agency, 2006), and this before the final splurge of the Celtic Tiger. As we have seen, the compact city is a core component of the sustainable mobility paradigm. Sprawl is usually measured simply by population density, yet the link between density and car usage is not actually straightforward. On the one hand, some Scandinavian cities, such as Helsinki but also Copenhagen, have low overall density but effective public transport, largely because development is clustered around public transport nodes. On the other hand, car usage is rising in high density cities such as Athens, just as it is in newly affluent but compact cities of Asia.

Reviewing the evidence to date a preliminary assessment is that by 2010 there had been no major shift away from car usage and indeed car dependency, with the possible exception of Athens. Of all four cities, Athens had appeared most clearly locked into its original trajectory, but partly because of the 2004 Olympics a series of major infrastructural projects have transformed public transport provision (extensions to the metro, reconstruction of the suburban rail line, a new tram system). In addition, institutional changes have improved the integration of the public transport system. Nonetheless, these prestige projects have made relatively little impact on overall levels of car usage.

Bologna turns out to be the most negative city from the perspective of sustainability. Having once stood at the forefront of transport change in Europe (Jaeggi et al, 1977; Topp & Pharoah, 1994), the city appears to rejecting the trajectory of the last thirty years. This was in fact in line with the findings of our scenario exercise. The discussion suggested that a growing individualism, allied to political changes, had already begun to undermine the collectivist (and rather 'top down') solutions of the previous generation. The measures needed to directly control car usage were seen as particularly unlikely to succeed in Bologna. Although in the

scenario discussion the experts were clear that the Italian preference for relatively compact cities would persist and an important role for the state would continue to be important, Bologna appeared as a city where car dependency could well be *less* controlled in the future. These predictions have been borne out. Bologna in fact is the only one of our four cities in which there has been no expansion of public transport infrastructure in the last ten years.

The remarkable feature of the Dublin scenario-building was the experts' dystopian vision. While those involved in policy formation argued for radical solutions (a very compact city with a strong reliance on rail transport), they were pessimistic as to whether such solutions would be implemented. Shortly after our meeting, the body charged with developing a transport strategy for the city published its proposals for the period until 2016: whereas in 1997 73% of all journeys to work in the Dublin area were by car, it was planned to reduce this to only 37% in 2016 (Dublin Transportation Office, 2000). While it is indeed noteworthy that such radical plans were being formulated in Dublin (Ellis and Kim, 2001), in 2010 such a change now seems totally implausible.

Finally, the Helsinki situation suggested the traditional maxim 'If it's not broke, don't fix it'. Throughout the project Helsinki consistently emerged as a best practice case, with the highest levels of public transport usage and low car usage and low car dependency. This despite the fact that the institutional structures were the more market-oriented options in the scenario. The discussion during the scenario building continually raised the linkage between citizenship, public spaces and public transport, all centred around a positive evaluation of powerful local government. Indeed, Helsinki is the only case of all our cities where public authorities had clear plans which they appeared to have a realistic chance of implementing.

7   CONCLUSION

By the year 2000 many urban experts across Europe accepted what has been termed the sustainable mobility paradigm. As we have seen, in our four cities experts expressed a clear preference for investment in rail-based public transport over further road-building; they favoured restraining car usage; they hoped to limit urban sprawl; for them the European city was a compact city. Sustainable mobility thus involved both technologies of mobility in the broadest sense and spatial planning.

For these experts, sustainable mobility was linked to a strong state, restraints on social inequality and extensive social cohesion (social capital). For them, as for enthusiasts of the 'European Dream', environmental sustainability was interwoven with social structure in a distinctively 'European' way (Hill, 2009; Rifkin, 2004).

Yet our experts did not expect such aspirations to become reality. The gap between aspiration and expectation was lowest in Athens and Helsinki, but for very different reasons. In Athens aspirations were not quite so clearly within the framework of sustainable mobility as elsewhere, and so were more consistent with the anticipated (and less sustainable) future. Only in Helsinki did experts anticipate that their aspirations towards sustainable mobility might be achieved. By contrast, in Bologna and in Dublin, experts looked to the future with trepidation. They anticipated a move away from sustainable mobility and they linked this to (to them) undesirable changes in social structure and political institutions.

In fact in relation to technology per se our experts were perhaps over pessimistic. The worst case city, Athens, saw a massive expansion of rail-based transport, while rail was also expanded in Dublin. Unlike in the USA, some rail transport is increasingly the norm in European cities. However, what is less obvious is that road building and motorisation have also continued, so that sustainable mobility technology is probably further away than ten years ago. In relation to the spatial planning aspect of the paradigm, here too the gap between aspiration and reality has probably increased. In our four cities, but especially in Dublin, our experts' gloomy (to them) expectations have been fulfilled: the compact European city remains an ideal of the past rather than a realistic aspiration for the future.

For some researchers this is hardly surprising. They consider that urban sprawl is the inevitable outcome of greater individual mobility, itself an inevitable result of greater individual choice resulting from economic growth. Accordingly, sustainable mobility has to mean more environmentally friendly technologies above all electric vehicles (e.g. Rienstra and Nijkamp, 1998). Yet such arguments ignore the sheer variation of urban form and urban transport within Europe. At its most extreme, a few cities such as Munich and Bilbao with very good public transport and strong urban government have been able to limit sprawl (EEA, 2006); cities such as Helsinki and Copenhagen have an overall low population density but their spatial planning and extensive public transport make mobility more sustainable.

The claimed inevitable domination of the automobile also ignores the linkage between sustainable mobility and social structure in its broadest sense. Our experts were challenging fordist automobility, where the private car is facilitated by massive expansion of publicly funded roads. Today the family car is as outmoded as the family telephone: the car, like the mobile phone, is individualised. The infrastructure which promotes this automobility is increasingly privately financed through various forms of 'public private partnerships'. Just as our experts linked sustainable mobility to other features of European society, so new forms of automobility appear to be linked to the erosion of European social structures by financialisation and individualisation, to the destruction of public facilities and public spaces by an expanding market. In this increasingly unequal society, urban ideals become the leisure ideology of the affluent, but for much of the population, the car and its unsustainable environment remains an essential, if expensive, necessity. In far away Melbourne too the car wars of the 1970s have led to a new defeat in victory:

> Walking or cycling to work from a warehouse apartment, drinking caffe latte in a sidewalk café , sociability rather than seclusion are the new urban ideals. Now it is the poor, marooned in far suburbs, who are most dependent on their cars, and most vulnerable to the rising costs of urban sprawl' (Davison, 2004: 261).

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