

Towards a Knowledge and Research Agenda on
Sustainable Urban Mobility
- DISCUSSION PAPER -

The European Metropolitan network Institute (EMI) and POLIS are currently developing a Knowledge and Research Agenda (KRA) on *Sustainable Urban Mobility*. By strictly adhering to the motto “research based, practice led”, the overall goal of this KRA is to strengthen European cities and metropolitan regions by means of integrated, coordinated and overarching knowledge on urban mobility. The KRA starts from the current situation, its ‘achievements’ and the overdependence on car use. Its aim is to issue general directions for urban research on the ‘transition’ to more sustainable forms of urban mobility, based on the actual needs of cities and metropolitan regions in Europe.

The Knowledge and Research Agenda on Sustainable Urban Mobility | Cities, as living organisms, accommodate high-density populations and they offer space for activities such as living, working, education, shopping and recreation. Connecting these various activities spatially allocated on the urban / metropolitan areas creates a need for mobility of people (and goods). Thus, mobility is the engine of economic vitality of the cities and metropolitan regions, and contributes to the social life therein. Inhabitants of cities enjoy the socio-economic achievements of the last decades, with automobiles, public transport, bicycles and the possibility of walking all available within short reach. As a consequence of the widespread introduction of the car since the 1960s suburban neighbourhoods have become more and more a part of the city (extension of daily urban system) and its economic output. Mobility in cities in 2011 means freedom and choice for the individual citizens and social and economic development for the cities as a whole.

Next to its primarily positive connotations, urban mobility – especially based on road transport - has some negative externalities as well. Among the various modes for passenger transport, personal motorised vehicles, in particular, cars, are a major generator of various negative externalities such as pollutant emissions, traffic accidents, congestion. Further, the individualised vehicles claim more and more space. When the share of different transport modes in (urban) Europe is examined, car use dominates the use of other modes of mobility, such as public transport, cycling and walking. There is an evident need to shift to more sustainable modes of transport. Starting from involving the lowest level of environmental burden, the prioritised order goes from mobility modes; walking, to cycling, to use of public transport and finally mobility by means of personal motorised vehicles.

A modal shift thus necessarily involves measures directed at promoting walking, cycling and the use of public transport, as well as other supportive measures (incentives) to create connectivity between these different modes. This is parallel to the call of European Commission for a new type of mobility, which involves *a necessary transition from a primarily car based personal mobility in cities to a mobility based on walking and cycling, high quality public transport and less-used and cleaner passenger vehicles* [Working document White Paper (2011)].

This thematic framework constitutes a point of departure for our knowledge and research agenda on urban mobility.

Thematic introduction (based on EU policy context and urban research) | As transport technologies have evolved towards greater speed and freedom and urban citizens would like to travel the least time as possible, this has caused three types of cities

according to the landmark article of Newman and Kenworthy¹: the traditional walking city (since more than 10 000 years), the transit city (since the end of the 19th century) and the automobile city (since the second World War). Europe, with its urban history, has cities with all kind of profiles and variations and most cities today contain some elements of all three city types. Usually, one can speak of a (country-)specific combination of a traditional walking city, a transit city and an automobile city.

Originally, most cities in Europe were not built to be dependent upon car use. By now, people in urban areas in Europe use their car heavily, but there is in both scientific research and EU policy context the conviction that excessively automobile dependent cities will decline in the 21st century unless they adapt to a new urban reality.² This ‘new urban reality’ is most often called a ‘sustainable’ urban reality. The current urban design in Europe provides opportunities for change in order to be less dependent upon car use, as the cities are not originally built for its citizens to be dependent upon car use.

This KRA will look both at the current reality in cities with its dependence on car use and the (social, economic) reasons behind this. Further, this KRA will especially look at the, from both research and (EU) policy, unavoidable necessity of a transition towards the new reality of sustainable urban mobility. What knowledge do European cities and urban areas need from urban research in order to make their cities more sustainable?

The leading research article in the field of sustainable (urban) mobility is ‘*the sustainable mobility paradigm*’ issued by David Banister (2008)³. Earlier, in 2005, Banister pointed to the ‘schizophrenic path’ in transport policy as it “is clear that action is needed, but no effective action is undertaken to remedy the current situation”.⁴ According to Banister a sustainable mobility approach requires actions to reduce the need to travel (less trips), to encourage a modal shift, to reduce the trip lengths and encourage a greater efficiency in the (urban) transport system. As regards the ‘how’ question of a transition the pioneering approach was ‘information’ in its broadest sense: awareness-raising, information education, media and advertising.⁵ Lately, other (more hard) measures have been introduced to reduce car-use: so-called ‘push’ (as opposed to ‘pull’) measures. According to Banister himself it is only through understanding and acceptance by the people in cities themselves that sustainable mobility will succeed as playing a central role in the future of sustainable cities.⁶

The recent White Paper (2011) of the European Commission: ‘Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system’⁷ is as clear as the quoted research articles that “the current transport system is not sustainable”. However, curbing mobility is neither an option.⁸ A ‘transition’ to a more sustainable form of urban mobility is thus also promoted in the White Paper. The definition of a ‘new type of mobility’ is very interesting in this respect as this involves *a necessary transition from a primarily car based personal mobility in cities to a mobility based on walking and*

¹ Peter W G Newman and Jeffrey R Kenworthy (1996), ‘The land use-transport connection: an overview’, *Land Use Policy*, vol. 13, no. 1, pp. 1-22.

² *Ibid.*, p.9. See also COM(2007) 551 final: ‘Green Paper: Towards a new culture for urban mobility’, p. 8: The main environmental issues in towns and cities are related to the predominance of oil as a transport fuel, which generates CO₂, air pollutant emissions and noise.

³ David Banister (2008), ‘The sustainable mobility paradigm’, *Transport Policy*, vol. 15, pp. 73-80.

⁴ David Banister (2005), ‘*Unsustainable Transport: City Transport in the New Century*’, Routledge, London, p. 234.

⁵ David Banister (2008), p. 74 citing OECD (Organisation for Economic Cooperation and Development), 2002; ‘Global long term projections for motor vehicle emissions MOVE II project, Working Group on Transport, ENV/EPOC/WPNEP/T(2002)8/REV1, Paris.

⁶ David Banister (2008), p. 80.

⁷ COM(2011) 144 final.

⁸ *Ibid.*, p. 4-5

cycling, high quality public transport and less-used and cleaner passenger vehicles [Working document White Paper (2011)].⁹

In virtually every European city's mobility policy or general strategic vision, sustainable urban mobility is mentioned as one of the key elements of a future –prosperous and livable- city. However, there seems to be a mismatch between long term visions or ambitions and the concrete policy measures that are actually taken. Even when specific targets are being mentioned (e.g. percentages of CO² reduction or rise in share of cycling in the modal share), there is not much clarity on how, through which measures, these targets will be met.

Furthermore, although broadly advocated in science and politics, there are clearly more incentives (i.e. promotion of alternative modes of transport) than disincentives (reduction of car use through regulatory and fiscal measures). In other words; there is no synergy between 'carrots' and 'sticks'.

Recent scientific articles as well as the recent White Paper of the European Commission point to the unavoidable necessity of a transition towards a more sustainable form of urban mobility which necessary involves less car use. In this transition it is not necessary to overthrow the whole urban design and the 'achievements' of earlier generations. Therefore, the main question of this KRA is a dual question:

⁹ SEC (2011)391 final: 'Commission Staff Working Document accompanying the White Paper – Roadmap to a Single European Transport Area: Towards a competitive and resource efficient transport system', p. 89.

How do cities and urban areas in their policies for sustainable urban mobility both preserve the current social and economic achievements of their mobility system as well as strive for a transition towards a mobility based on walking and cycling, high quality public transport and less-used and cleaner passenger vehicles?

Sub-themes | To answer this main question mentioned in the foregoing paragraph, we will use more specific sub-themes that relate to our main question, the sustainable mobility paradigm of Prof. Banister (2008) and the definition of a ‘ new type of urban mobility’ as proposed by the European Commission in the Working Document accompanying its White Paper on Transport. A comprehensive overview, complemented with practical examples, is found below.

The subtheme ‘*urban space*’ relates to all measures and interventions that concern the design of a city. This can be developments of new areas, but also densification of existing parts of the city, reallocation of street space (e.g. bicycle paths instead of parking spaces). As physical interventions are of a permanent character, most interventions classified within the subtheme ‘ urban space’ therefore could be classified as ‘hard’ measures.

Through ‘*regulation and pricing*’, the second subtheme, -municipal- authorities have a powerful tool to reduce unwanted modes of transport and stimulate the use of alternative mobility. The topic is usually politically sensitive, besides there is a lack of clarity on which level these measures should best be decided upon.

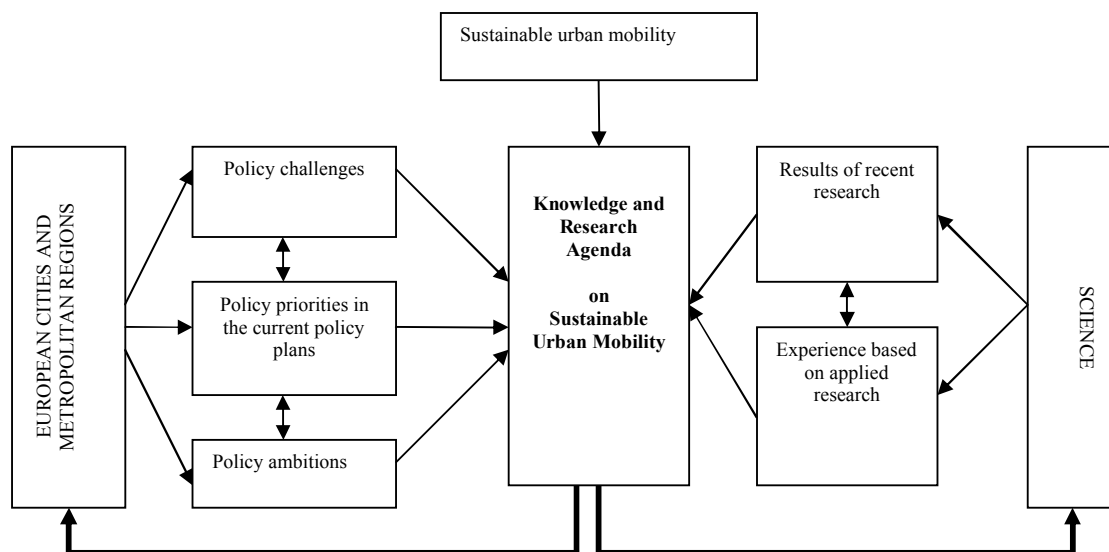
Within the subtheme ‘*people’s behaviour*’, one should think of any policy that aims to obtain behavioural change towards more sustainable transport choices. This could be awareness raising campaigns, providing information about alternatives or assisting large companies in setting up mobility plans. As these ‘softer’ measures are often easier to be taken (in terms of planning, finances and time) there are a great deal of examples of urban areas all over Europe.

‘*ICT & Technology*’ play a essential role in establishing a transition towards sustainable urban mobility. Partly, this subtheme covers current technological innovations such as cleaner cars and public transport. Next to these, other developments such as teleworking or teleshopping and providing real-time (and/or personalised) information for users of public transport are also phenomena that are part of this subtheme. An important question is: How can cities use the existing technical opportunities?

	Less / cleaner car use	More use of alternative forms of transport	<i>Other, general</i>
URBAN SPACE – use, layout, planning	Living closer to work Densification – smart growth car-free zones/development	Reallocation of space; priority for public transport, cycling friendly streets, Pedestrianisation of (central) areas livable streets	<i>Intermodality, nodal points Park + Ride</i>

REGULATION & PRICING	Congestion charging, road pricing, environmental zones, parking policies, subsidies for cleaner vehicles	Subsidies for (electric) bikes, public transport Green procurement (public transport)	
PEOPLE & BEHAVIOUR	Car sharing awareness-raising/education: is the car the best option for this trip?	Awareness information education mobility plans	<i>Behavioural change Shared mobility clearly targeted personal information health</i>
ICT & TECHNOLOGY	Green Cars; electric, hybrid, bio-fuel etc.	Opportunities to enhance use: ITS, real-time information, integrated journey planners, apps for public transport, walking and cycling	<i>ICT possibilities for working at home, shopping on the internet etc.</i>

Approach | By strictly adhering to the motto of EMI (“research based, practice led”), the overall goal of this KRA is to strengthen European cities and urban areas by means of integrated, coordinated and overarching knowledge on urban mobility. Our concept of sustainable urban mobility is based on the ‘new type of mobility’ as proposed in the Working Document accompanying the White Paper (2011) of the European Commission. The KRA will connect the policy practice of the cities and metropolitan regions and the research conducted in the scientific world in the field of urban mobility. In the KRA we will identify the urban research needs of the cities as conditions for the (from both research and EU policy) necessary transition towards a mobility based on walking and cycling, high quality public transport and less-used and cleaner passenger vehicles. This approach has many benefits: the experiences of the metropolitan regions and the accumulated knowledge of academia will provide input in shaping our agenda. In return, our KRA will contribute to giving direction to the future of urban mobility policy and research in Europe. This approach is visualised in the figure on the next page.



Deliverables | The deliverables of the Knowledge and Research Agenda on sustainable urban mobility are:

- A strategic Knowledge and Research Agenda (KRA) on sustainable urban mobility;
- Practical guidelines for cities and/or regions on urban mobility for the benefit of urban practitioners and decision makers;
- A selection of interesting practices in the field of urban mobility;
- A structural thematic network on urban mobility; including knowledge dissemination and exchange;



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