

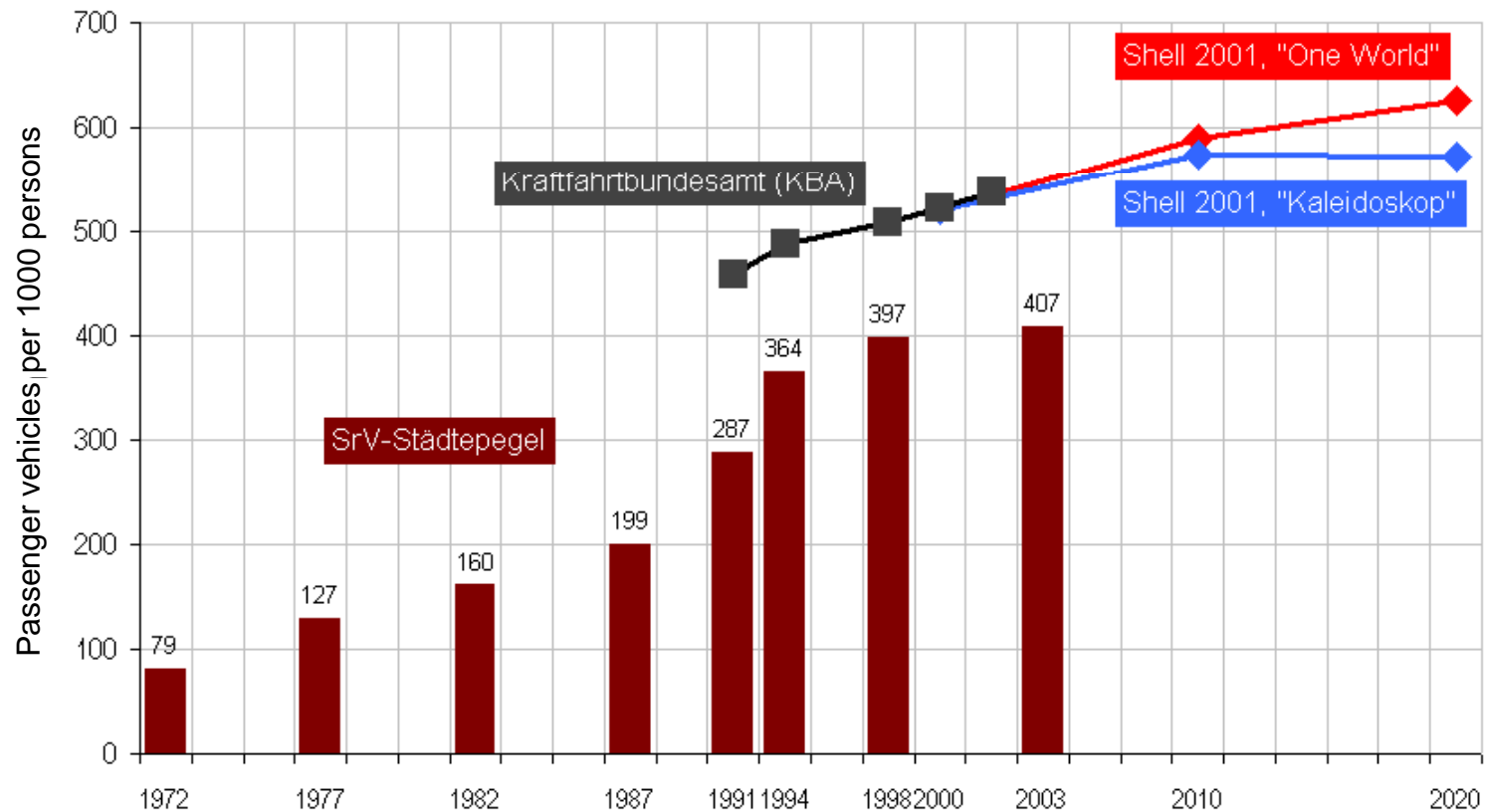
“Ways of influencing behaviour in passenger transport”

International Transport Forum

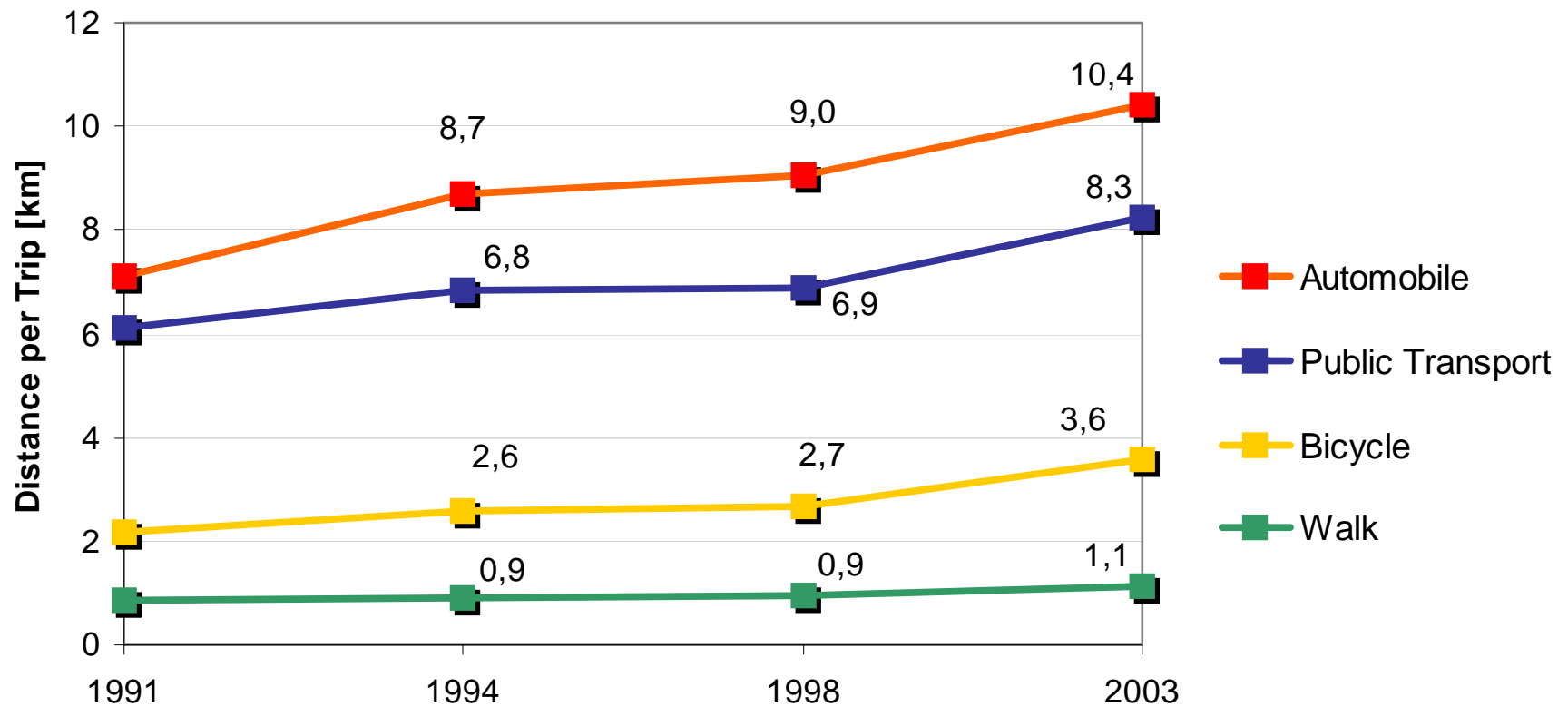
Prof. Dr.-Ing. Gerd-Axel Ahrens

Leipzig, 28. – 30. May 2008

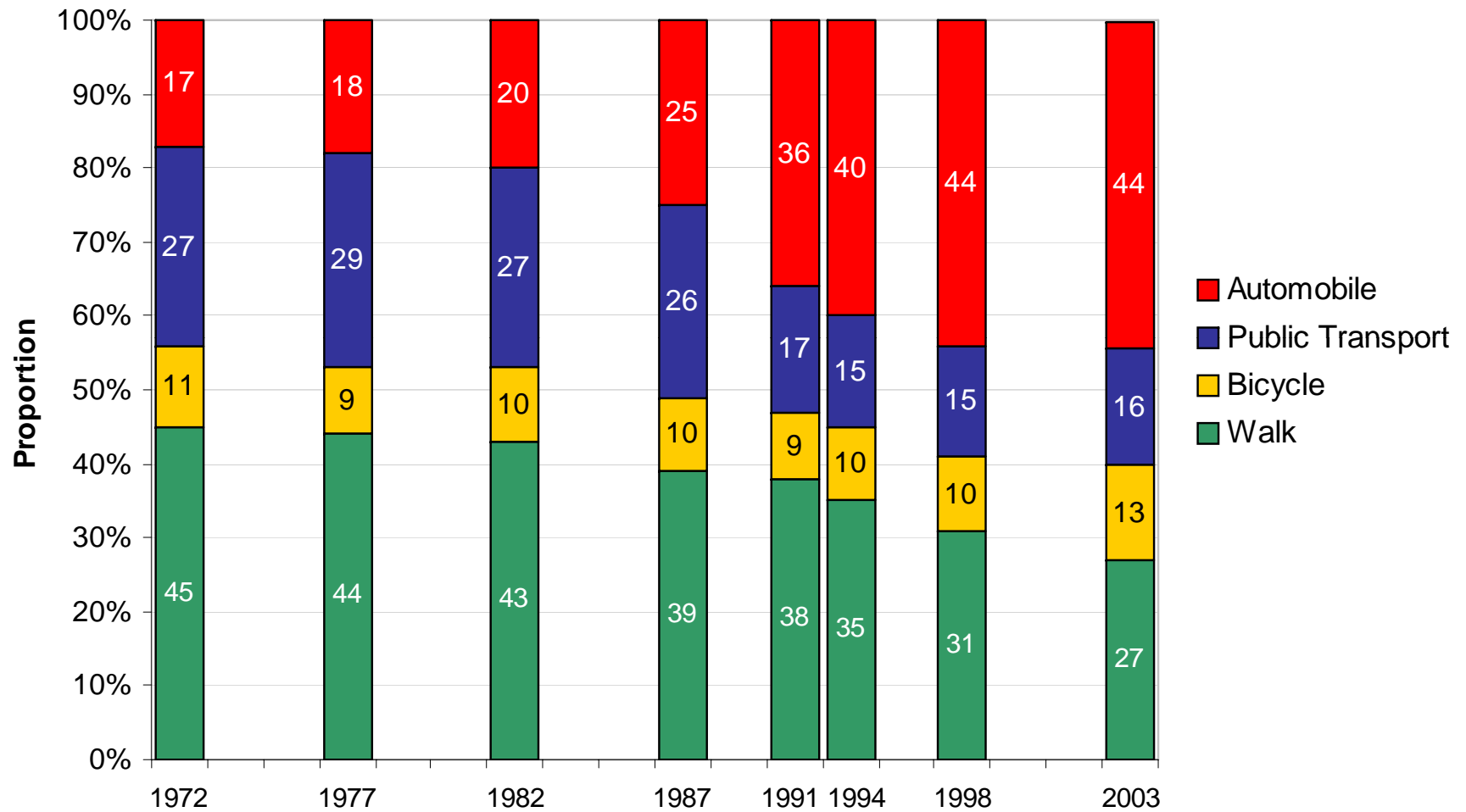
Development of motorisation in East German cities



Average trip distance

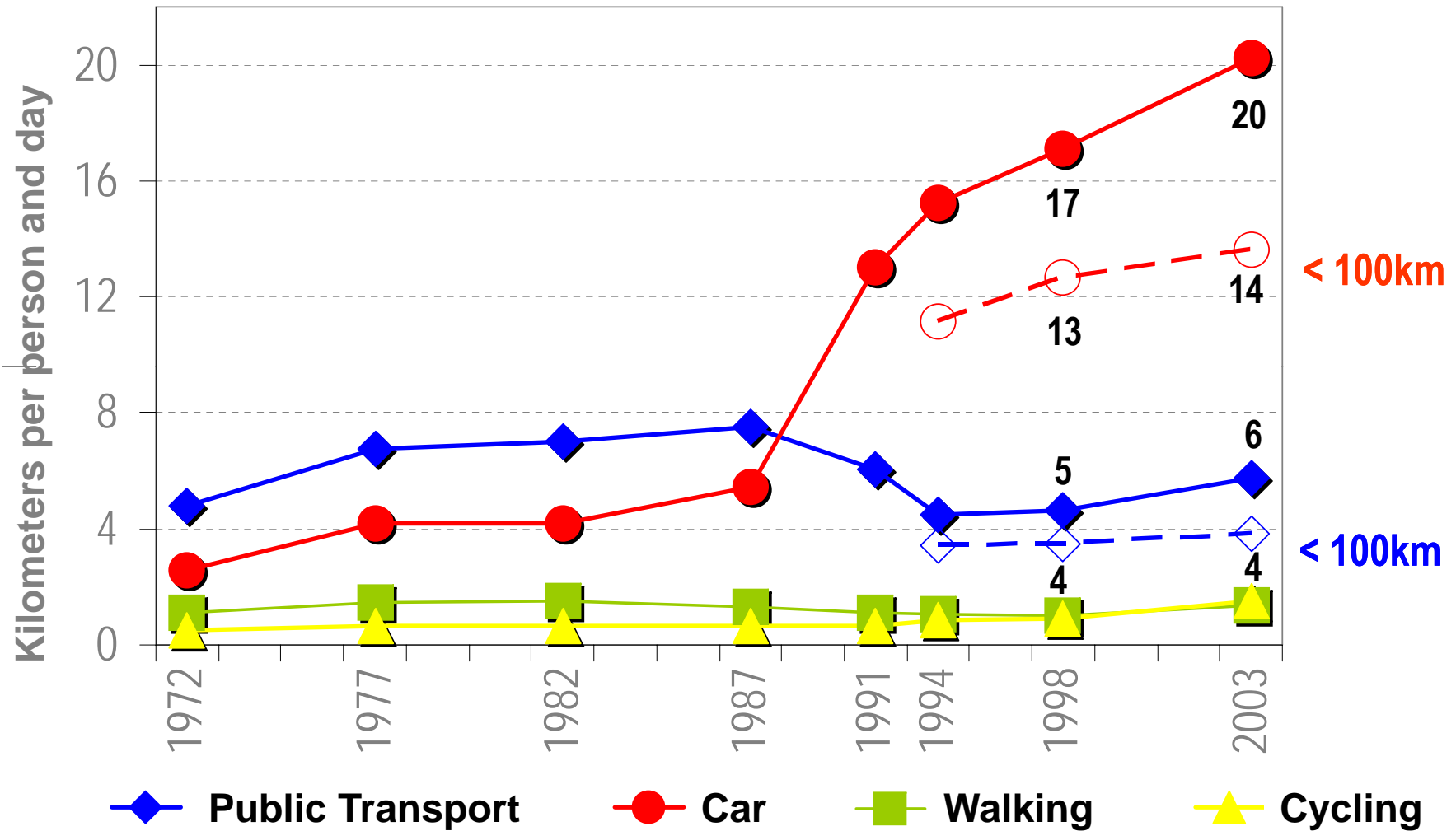


Modal split development in East German cities

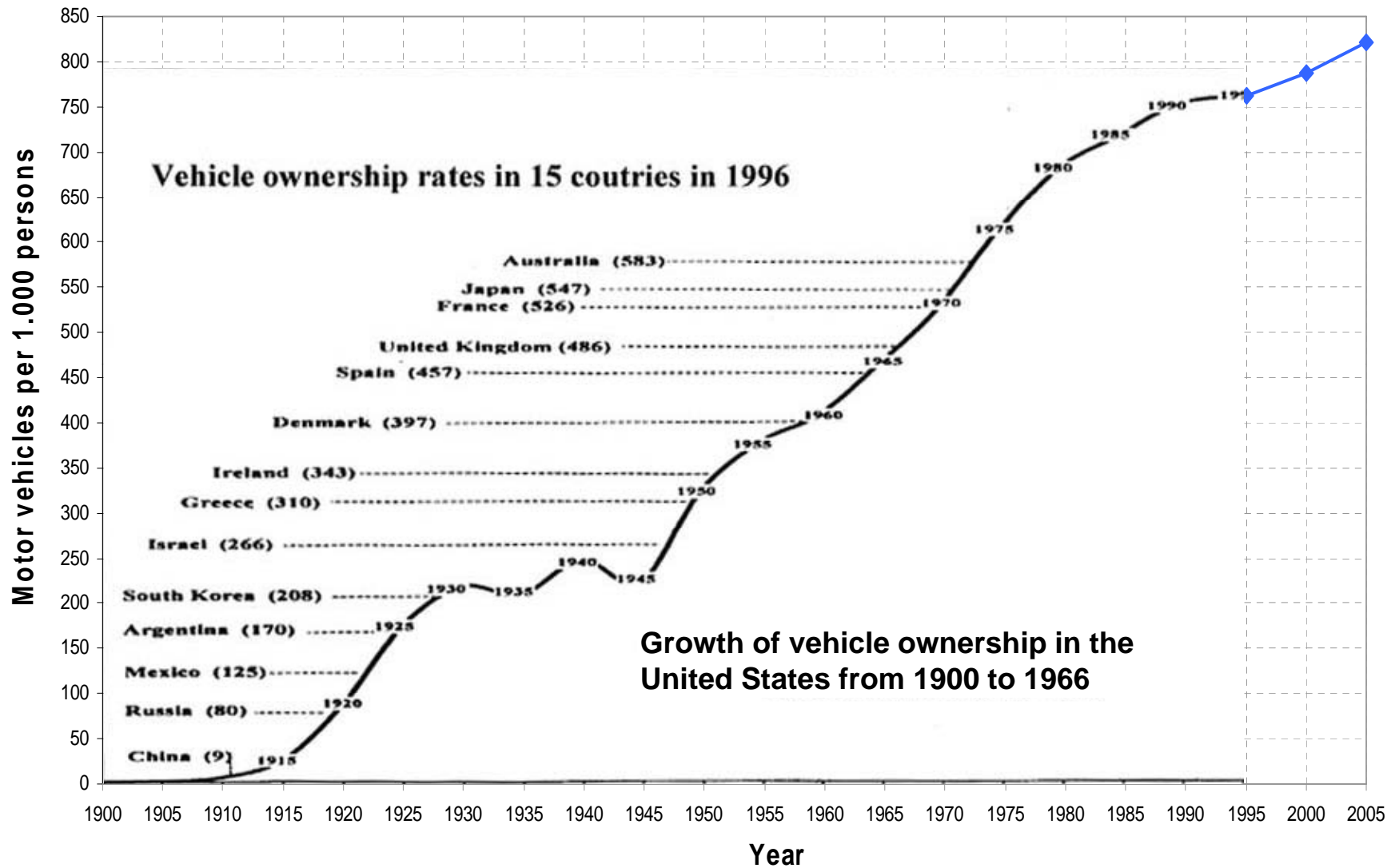


© TU Dresden/vip: Survey 'Mobility in Cities-SrV', City Profile

Development of daily distance traveled by modes



U.S.A. – motorisation in comparison



Source: Worldwatch Institute, Washington, www.worldwatch.org

Definition of mobility

Definition mobility of people:

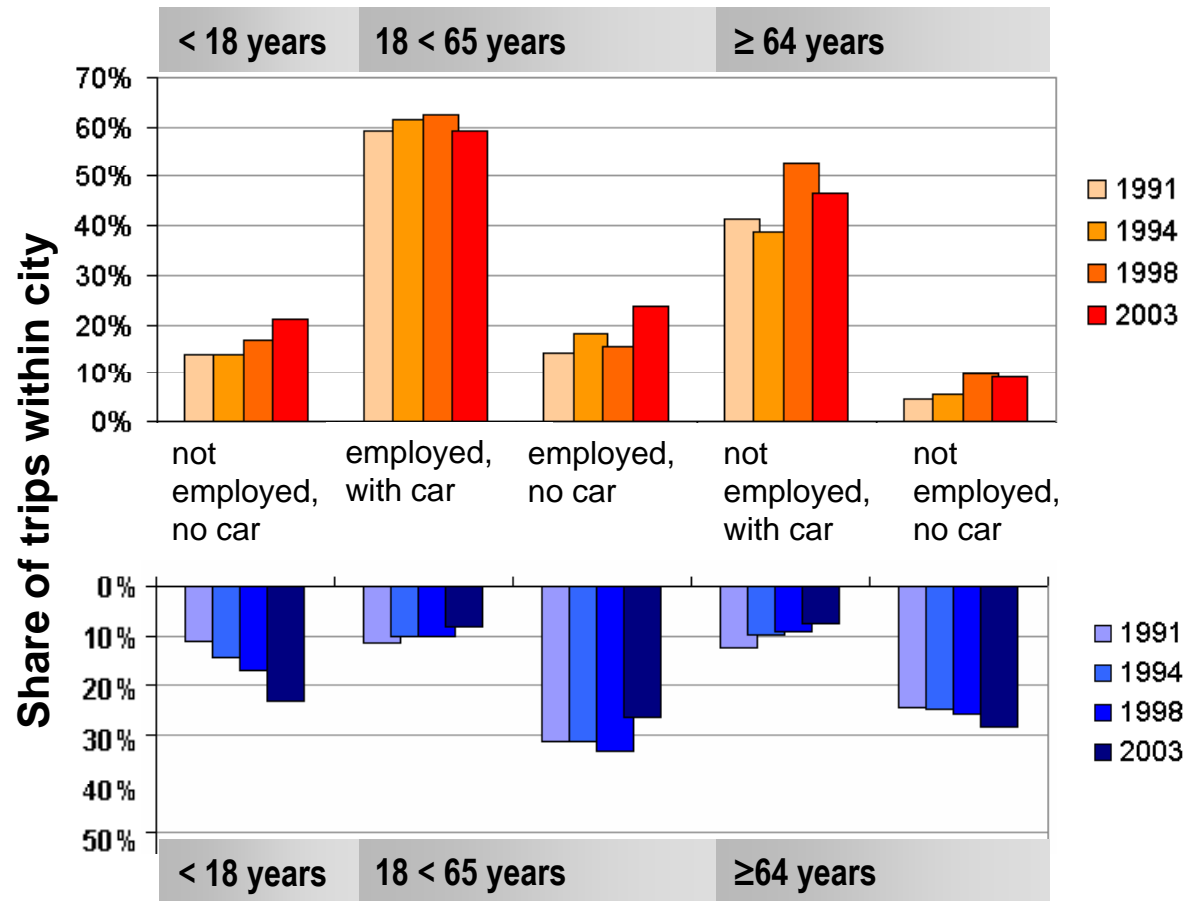
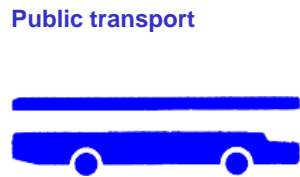
Ability of activities away from home through motorised or non motorised trips. ¹⁾

Descriptors of daily mobility:

1. Trips per day
 - 3 - 3,5 trips per day in Germany
2. Required time for daily trips
 - 70 – 80 min per day in Germany
3. Trips length in km per day
 - 1991 still 20 km, 2003 already 29 km per day
(Source: TU Dresden/vip; Survey 'Mobility in Cities-SrV')

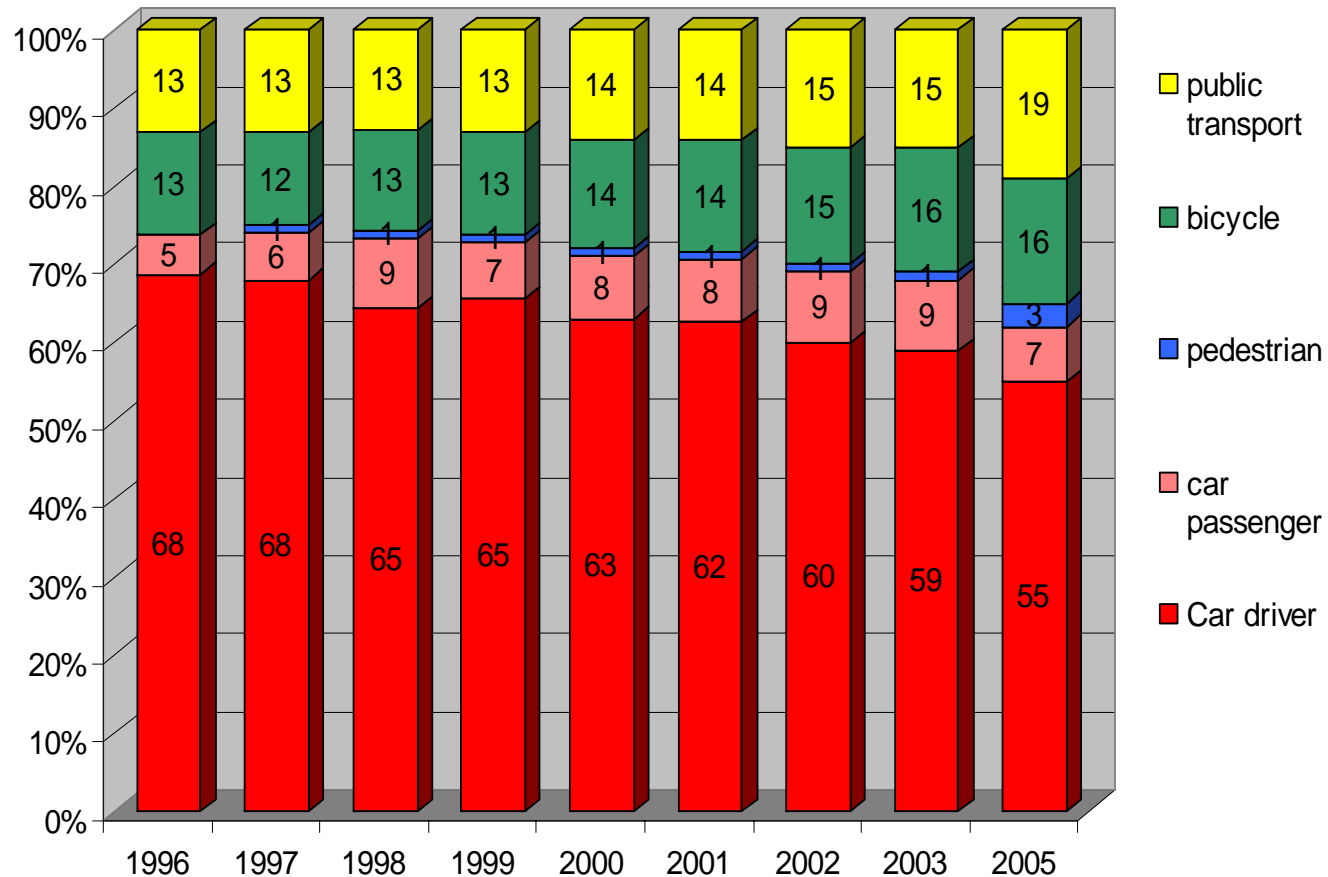
¹⁾ Transport planning has the task to enable the participation of population and goods in individual activities or exchange of goods. The use of resources and negative effects have to be minimized. So we try to achieve as much as possible mobility with the least amount of traffic and effort.

Modal split in East German cities according to age and availability of cars



Effects of integrated mobility management on work trips to a company

Modal share on work trips to the company Infineon/Quimonda Dresden



Source: : Landeshauptstadt Dresden, Hauptabteilung Mobilität: Betriebliches Mobilitätsmanagement, Dresden, 2007

Mobility lifestyles

(1) Auto-fixed rider (17 %)

Strongest auto-attached group and prototype of the unsustainable problem group. These are mainly male and very young. Emotions are important. They follow ideals from the movie “Easy Rider” like fun, driving for fun, risk, design and technique.

(2) Vigorous, self-confident driver (18 %)

Also young and mainly male and partly emotionally motivated (speeding), but they seem to be tolerant towards non car-users. They are not sensitive towards danger and risks.

(3) Inconsistent, anxious auto-friend (22 %)

Mainly elderly people, who are torn in their orientation. They are sensitive towards dangers in traffic, but they consider the car as their best friend.

(4) Inconspicuous, careful car-user (20 %)

Mainly female and middle-aged. They reject risky driving, but they could not live without a car. Auto-emotions play a minor role.

(5) Auto-critical multi-optional (22 %)

The only group that shows critical distance towards the car. They are open to other modes, or use them already. The middle-age group dominates.

Source: FLIEGNER, S. (2002); Car Sharing als Alternative? Mobilitätsstilbasierte Potenziale zur Autoabschaffung. Studien zur Mobilitäts- und Verkehrsforschung, Band 3, Mannheim.

Policy and achievements 1989 (1)

1989 the UBA suggested (1) to substitute some long distance car travel by trains, (2) to increase modal split for the mobility coalition in urban travel and (3) to substitute inner German flights by fast train connections. Could this not also be a modern program of nowadays?

(1) The following four measures were recommended to increase individual train use by more than 50 % to reach the French level of that time. This way 5 % of the Nox-emissions of 1998 could be reduced.

1. Increase of variable car costs (internalization of external effects)
2. Better rail service and supply for smaller fares (half price pass)
3. No further significant improvements in the highway network
4. Improvements in the railway network

Looking at the data now, long distance train travel in reunified Germany rose from 1991 from 23.300 Mio. Pkm to 38.100 Mio. Pkm in 1998 or to 41.300 Pkm in 2005 (BUNDESMINISTER FÜR VERKEHR, BAU UND STADTENTWICKLUNG 2006). So we can certify a relative success in this area with an increase of 77 % from 1991 to 2005.

Policy and achievements 1989 (2)

(2) For regional and urban transport the UBA argued that Germans who live in cities could use PT almost as often as Swiss people do. If they would increase their annual rate PT-rate by 200 trips, a reduction rate of 40 billion car km could be achieved which would have been 32 % of the for 1998 expected Nox-emissions of car traffic in towns. The following measures were recommended:

1. Increase of variable car costs (internalization of external effects)
2. Change of tax-refunds on the basis of distances to or on the job travelled in the car
3. Parking management, guiding systems
4. Access limitations, city maut (like in Honkong or Singapur)
5. Priorities for PT, bicycles and pedestrians in cities
6. Mobility master planning in cities, investment and environmental planning
7. National funds for additional municipal measures to reduce emissions of transport

The passenger-km travelled by PT in Germany grew from 77 Mio Pkm in 1991 to 89 in 1998 and to 94.5 in 2005. A 22 % increase is not as much as desired, but it is considered as a success since private car use did also “only” increase by 22 %.

Range of measures in integrated transport planning and management

0. Land use planning

- Determination and control of land uses to reduce traffic demand
- New developments in "integrated" zones or areas with public transport access

1. Engineering

- Construction of routes and transport facilities for all modes, multi and inter-modal use
- Vehicle improvements
- Information technology, e. g. multi modal navigation systems

2. Economy

- Taxation (vehicles, energy, ...)
- User-financed systems
- Road pricing
- Fares
- Land value capture
- Parking management

3. Enforcement

- Legislation, emission and other standards
- Access restrictions, car free zones, emission-control zones
- Speed limits
- Safety control
- Traffic guidance and control
- Police enforcement, fixed quotas

4. Education, Information

- Transport behaviour issues in school
- Driver education
- Public awareness, public relations
- Mobility Management on all levels
- Involvement of media
- Public participation

5. Organisational and logistic measures

- Improved efficiency (car-sharing, car-pooling, ...)
- Differentiated supply also for inter and multi-modal use
- Incentives, privileges for best practice approaches

Selected measures to influence CO²-aware travel behaviour

- Attractive opportunities for homes, for work, for shopping and leisure “near by”
- Incentives for less auto-oriented life styles (privileged parking for car-sharing or car-pooling, refunding non-parking to public transport user, pedestrians or bicyclists)
- Improved conditions for public transport, bicycling and walking; create a friendly atmosphere for walking, bicycling and for using public transport on all levels
- Management and pricing of road use and parking
- Inter- and multi-modal information and booking schemes
- Information centres for car-pooling, car-sharing, co-driving
- Mobility management on all levels (DE TOMMASI et al 2000)
 - Information and advice
 - Consulting
 - Public awareness and Education
 - Transport organisation and co-ordination
 - Sales and reservation
 - New transport related products and services
- Public initiatives for safe and slow driving, for more sustainable travel behaviour and mode choice
- Marketing on all levels for pro-climate policies and energy saving
- Employer service for “close-by living”
- Campaigns to promote sustainable modes, to reduce private car use and to create awareness on all levels (in schools, companies, sport clubs, theatres, cinemas, in events, on national, regional and local level)
- Easy to use CO²-calculators
- Pay as you drive (taxes, fee, insurance)

Future's threat

