

Promoting Safe Walking and Cycling to Improve Public Health: Lessons from the Netherlands and Germany

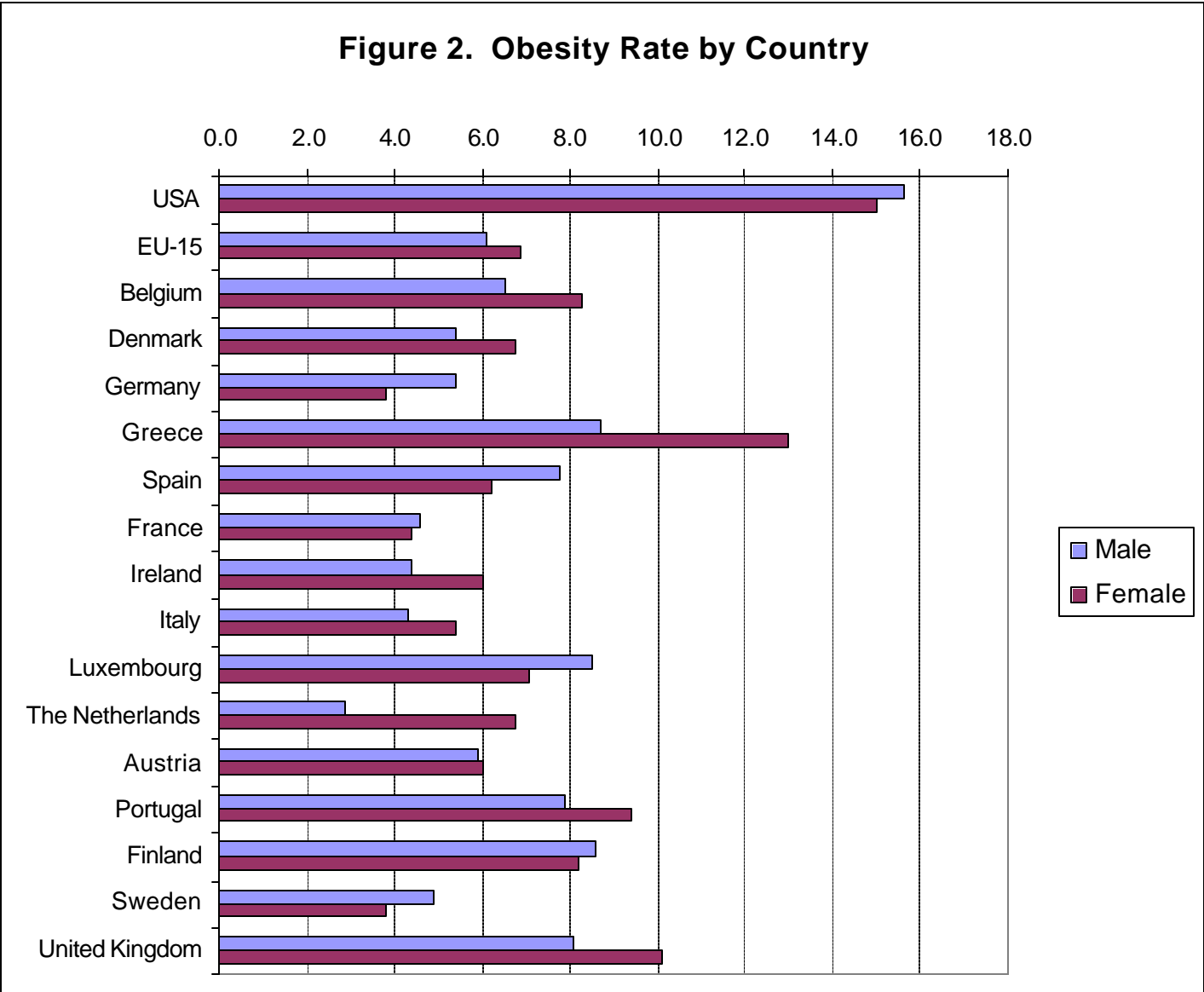
**by Prof. John Pucher
Rutgers University**

(<http://policy.rutgers.edu/faculty/pucher.htm>)

**Presentation for the Nov. 4, 2003 Harvard University
conference “Promoting Physical Activity and Health
by Urban Design,” based on an article in the
September 2003 issue of the *American Journal of
Public Health*, Vol. 93, No. 9, pp. 1509-1516.**

Main Points:

- *Extreme auto-dependence of American cities has severe public health consequences* (lack of exercise, environmental pollution, social isolation, mental and physical diseases, traffic dangers)
- *Americans get much less exercise than most Europeans, contributing to much higher obesity rates, hypertension, diabetes, and shorter healthy life expectancies*
- Main difference between Americans and Europeans in their overall physical exercise levels is *much higher rates of walking and cycling in Europe*
- Probably the *best way to increase physical exercise among Americans is to promote safe and convenient walking and cycling for daily urban travel*
- *Europeans have developed extremely effective policies that could be easily adapted to American cities*



Source: Center for Disease Control and Prevention, U.S. Department of Health and Human Services; Eurostat, Public Health Statistics (from Eurobarometer 44-3).

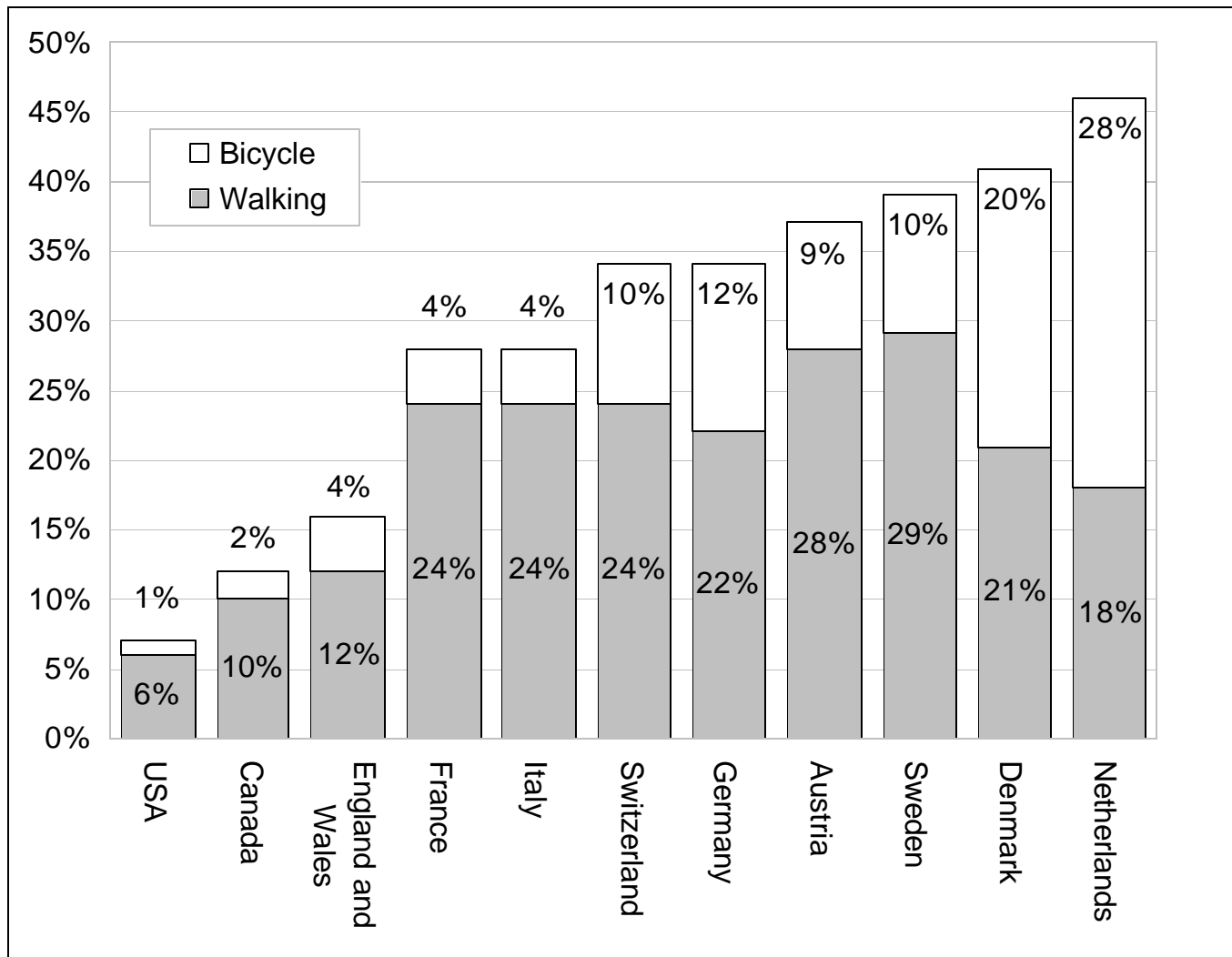


Figure 1: Walking and Bicycling Shares of Urban Travel in North America and Europe, 1995

Source: Pucher and Dijkstra, "Promoting Safe Walking and Cycling to Improve Public Health: Lessons from the Netherlands and Germany," *American Journal of Public Health*, September 2003, Vol. 93, No. 9, pp. 1509-1516.

Note: Modal split distributions for different countries are not fully comparable due to differences in trip definitions, survey methodologies, and urban area boundaries. The distributions here are intended to show the approximate differences among countries and should not be used for exact comparisons.

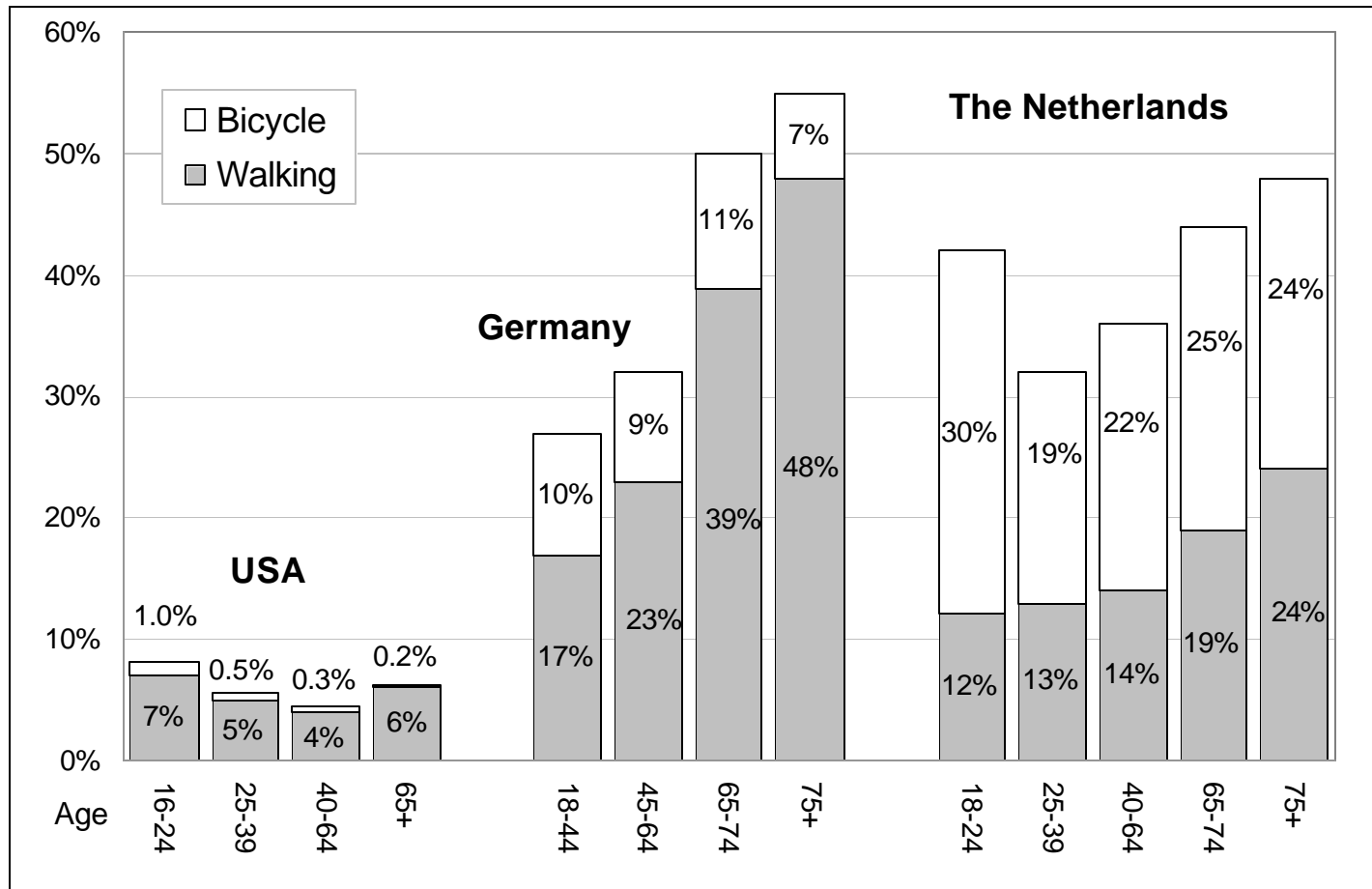
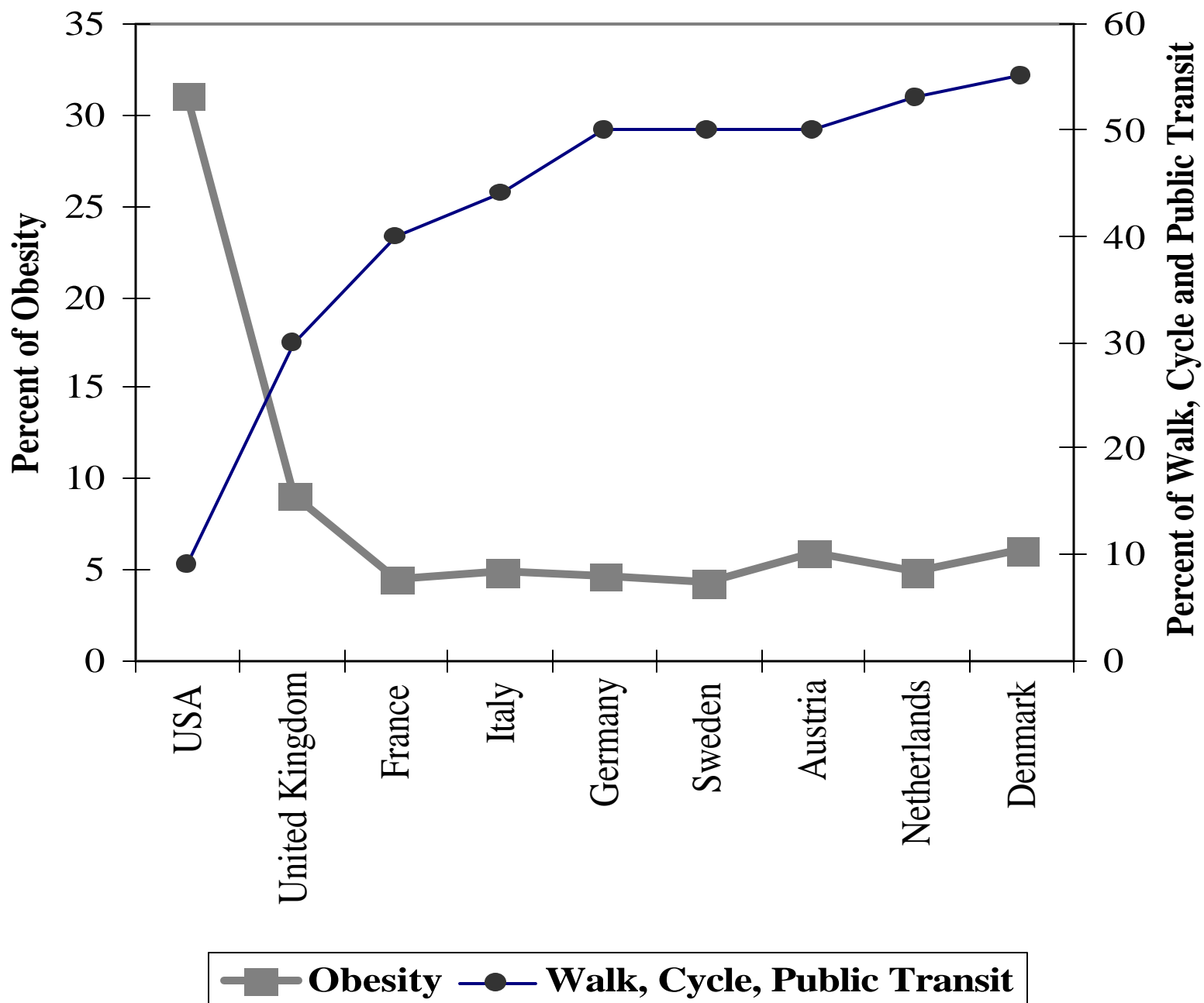


Figure 2: Walking and Bicycling Shares of Urban Travel by Age Group in the USA, Germany and The Netherlands, 1995

Source: Pucher and Dijkstra, "Promoting Safe Walking and Cycling to Improve Public Health: Lessons from the Netherlands and Germany," *American Journal of Public Health*, September 2003, Vol. 93, No. 9, pp. 1509-1516.



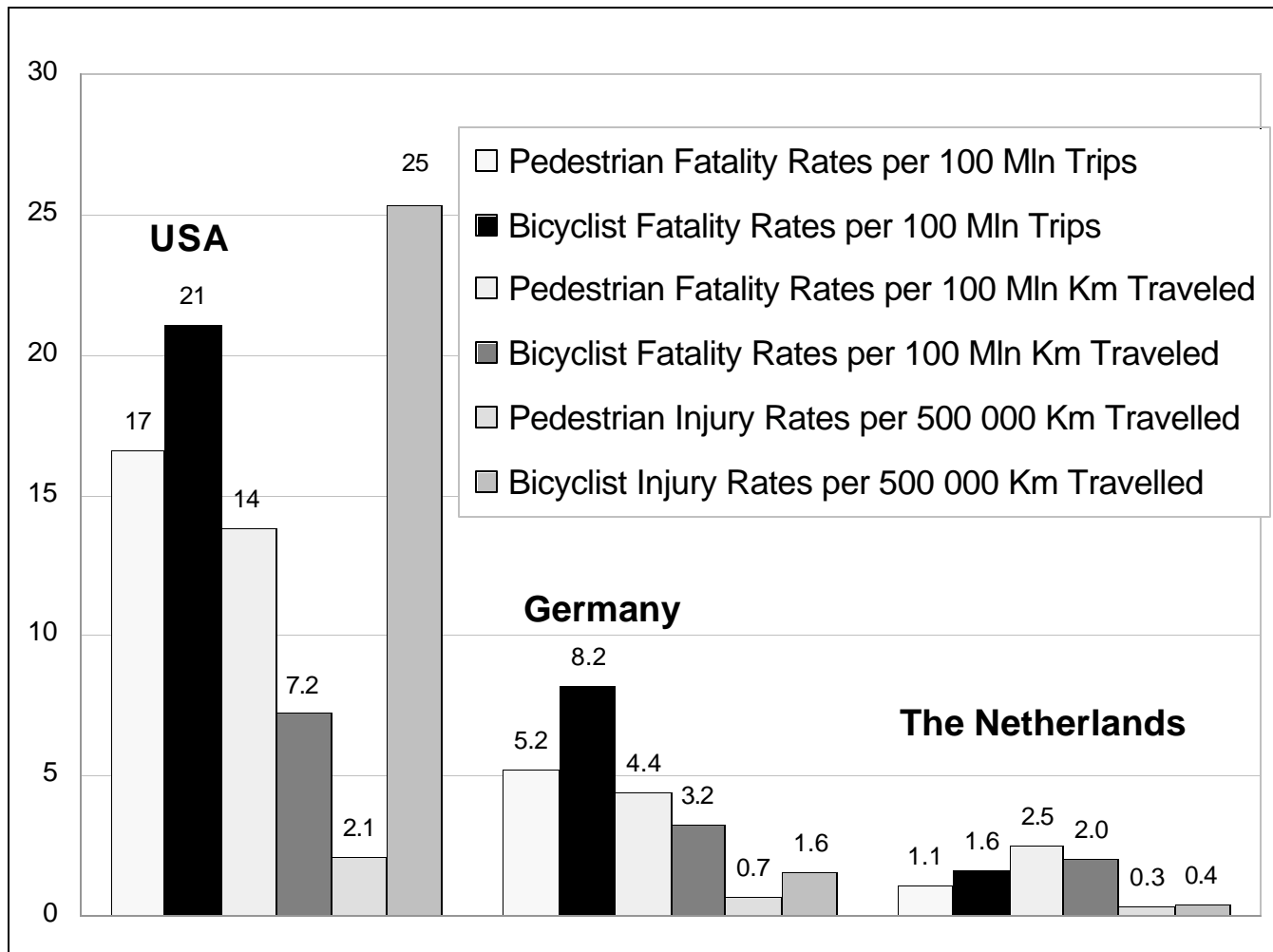


Figure 3: Fatality Rates and Non-Fatal Injury Rates in the USA, Germany and The Netherlands, 2000

Source: Pucher and Dijkstra, "Promoting Safe Walking and Cycling to Improve Public Health: Lessons from the Netherlands and Germany," *American Journal of Public Health*, September 2003, Vol. 93, No. 9, pp. 1509-1516.

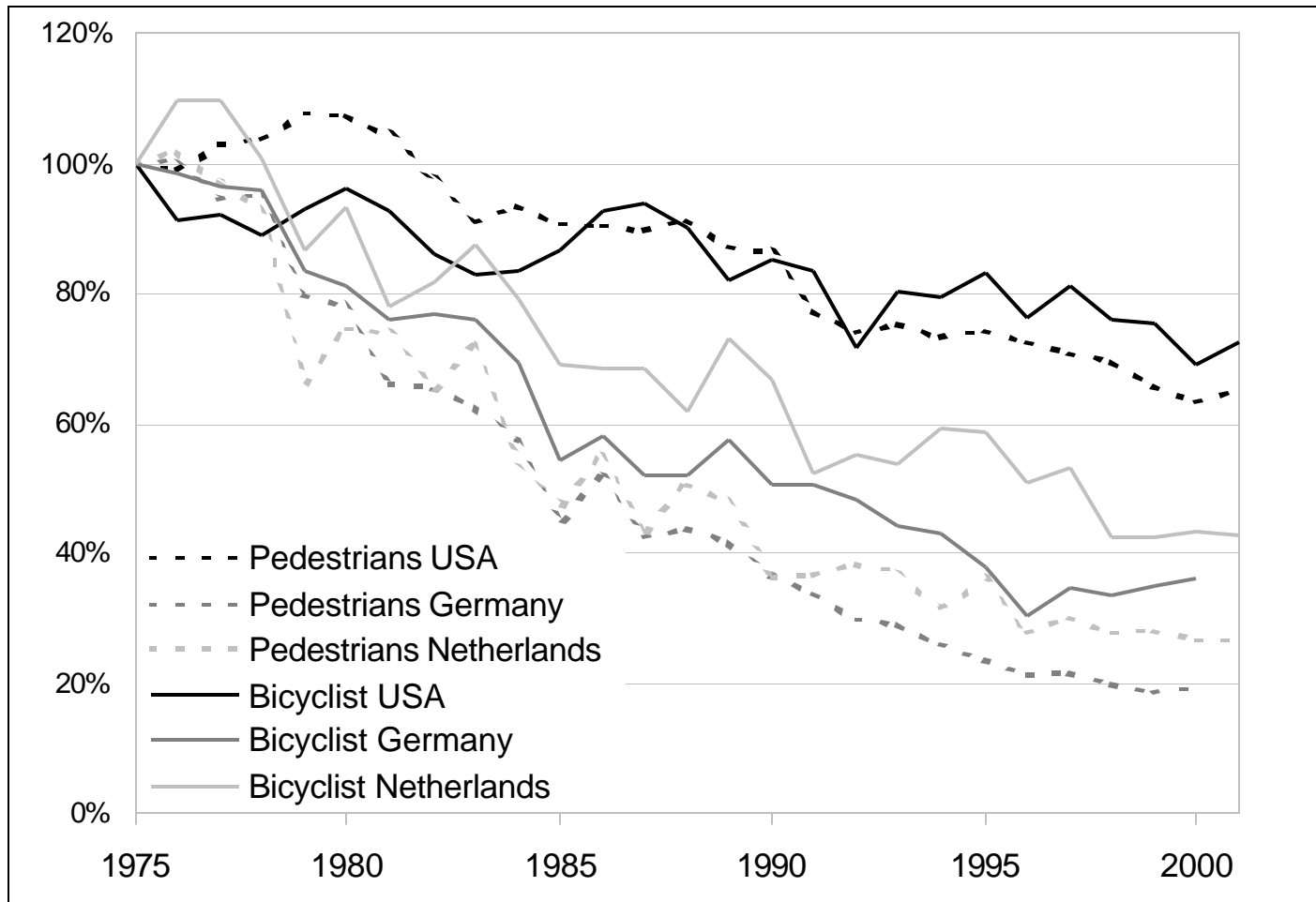


Figure 4: Trends in Pedestrian and Bicycling Fatalities in the USA, Germany, and The Netherlands, 1975-2001 (1975=100%)

Source: Pucher and Dijkstra, "Promoting Safe Walking and Cycling to Improve Public Health: Lessons from the Netherlands and Germany," *American Journal of Public Health*, September 2003, Vol. 93, No. 9, pp. 1509-1516.

SAFETY IN NUMBERS:

- Recent studies indicate that *as levels of cycling and walking increase, injury and fatality rates per trip and per km traveled fall dramatically*
- Using both time-series and cross-data from a broad range of countries and cities, Jacobsen (2003) found that, without exception, **fatality rates per trip and per km are much lower for countries and cities with high bicycling and walking shares of total travel, and fatality rates fall for any given country or city as cycling and walking levels rise**
- THUS, it is quite likely that increased walking and cycling in the USA would be safer than they are today.**

Jacobsen, "Safety in Numbers," *Injury Prevention*, 2003, 9: 205-209

MOREOVER,

*there are a wide range of policies, already used in Europe and Canada, that simultaneously make walking and cycling **BOTH** safer **AND** more convenient, faster, most pleasant, and more attractive, as shown in the following slides:*

Recommended Measures for Making Walking and Cycling Safer

- Better facilities for walking and cycling
- Traffic calming of residential neighborhoods
- Urban design oriented to people and not cars
- Restrictions on motor vehicle use
- Traffic education
- Traffic regulations and enforcement

Better facilities for walking and cycling

- Auto-free zones covering much of city center
- Wide, well-lit sidewalks with benches and plants
- Median islands for crossing wide streets
- Clearly marked, well-lit crosswalks, often with pedestrian- activated traffic signals
- Bike paths and lanes with exclusive rights of way
- Intersection modifications that minimize dangers for pedestrians and cyclists to cross streams of traffic
- Advance green lights for cyclists and pedestrians (to cross intersections before motor vehicles)
- All-red phase for motorists from all directions at especially dangerous intersections (to eliminate dangers from turning vehicles)
- No turn on red!

Traffic Calming of Residential Neighborhoods

- Speed limited *by law* to 30km per hour (19mph) or less
- *Physical measures* to limit speeds:
 - Traffic circles
 - Road narrowing, zigzag routing
 - Raised intersections
 - Speed humps
 - Mid-block closures and artificial dead-ends
 - Bulb-outs at intersections and crosswalks, with sidewalk widening

Restrictions on Motor Vehicle Use

- Lower overall urban speed limit (31mph in most German and Dutch cities)
- Restricted parking, especially in city center and residential areas
- Prohibition of truck traffic and thru traffic in residential areas
- Extensive motor vehicle turn restrictions at dangerous intersections, and complete ban of turns on red
- Complete ban of cars in certain central city areas
- “Walking speed” requirement for cars in certain residential areas designated as “woonerfs”

Traffic Education

- Improved motorist training, with *much* more emphasis on how to avoid endangering pedestrians and cyclists
- Compulsory traffic safety lessons for all school children by the age of 10, with testing by traffic police on actual traffic test courses, to ensure safe and defensive walking and cycling by an early age (as in the Netherlands and Germany)

Urban Design Oriented to People and Not Cars

- Inclusion of sidewalks and bikeways or bike lanes in all new suburban developments and retrofitting of existing developments, where possible
- Mixed land use zoning so that residential units are within easy walking or cycling distance of cultural facilities, shopping, and service establishments
- Encouragement of compact, mixed-use development around transit stops to facilitate walking/bicycling communities (transit-oriented development) through subsidies, mortgage bonuses, and zoning.
- Restrict parking lots to locations behind buildings rather than between buildings and the street (as with most strip mall development in USA).

Traffic Regulations and Enforcement

- Revise traffic laws to place burden of proof on motorists, with the assumption that motorist is guilty unless it can be shown otherwise, especially when children or elderly are involved in crashes (forcing motorists to be extra careful to avoid crashes with pedestrians and cyclists)
- Enforce existing legal rights of pedestrians and cyclists, with strict penalties and fines for motorist violations of ped/bike rights of way in crosswalks, bike lanes, intersection crossings.
- Traffic cameras at intersections to photograph motorists failing to stop or yield when required to do so, with automatic ticketing for violations

CONCLUSIONS:

- *Crucial to increase walking and cycling in American cities for many reasons*
- *Many ways to achieve this goal, with manifold benefits that would far outweigh the costs*
- *All the necessary measures have already been successfully implemented in thousands of European cities*
- *The same policies that would make walking and cycling safer would also increase overall walking and cycling levels, and increased walking and cycling, in turn, would encourage greater safety for non-motorists*

For any questions or further information, please feel free to contact:

Prof. John Pucher

Rutgers University

Email:pucher@rci.rutgers.edu

<http://policy.rutgers.edu/faculty/pucher.htm>

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