



Human Powered Transport

Hillie Talens

talens@crow.nl



Members of subgroup 3

Christian MAUROIT, Belgium

Raj GHAMAN, United States

Farshid KAMALI, United Kingdom

Tsuyoshi KUROSAKA, Japan

Hillie TALENS, Netherlands

Jürgen GERLACH, Germany

Bystrik BEZAK, Slovakia

Dominique PRAT, France

Content

- Scope of the project
- Importance of Human Powered Transport (HPT)
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Definition

Non-motorised transport:

All trips done by animal or human powered vehicles or by humans without any motorised support



Scope of this project

Human Powered
Transport on land (more
precise on the street)

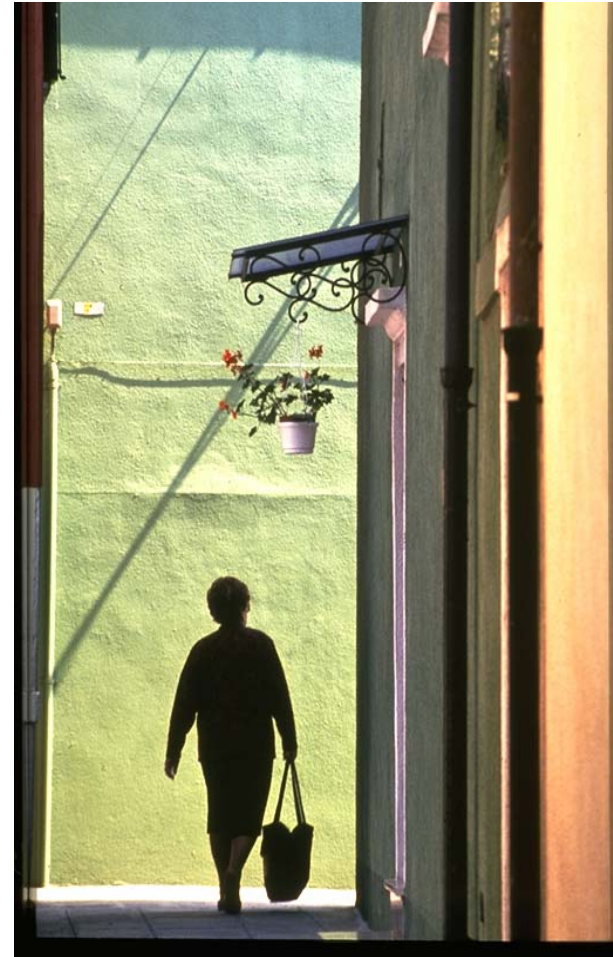
In other words:

cycling and walking



Importance of Human Powered Transport

- ➔ Health
- ➔ Economy
- ➔ Safety
- ➔ Environment



Health

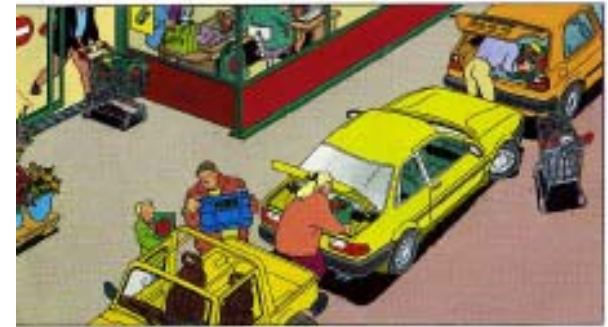
0.5 to 1 hour
exercise per day:

- in a gym or
- as a commuter



Economy

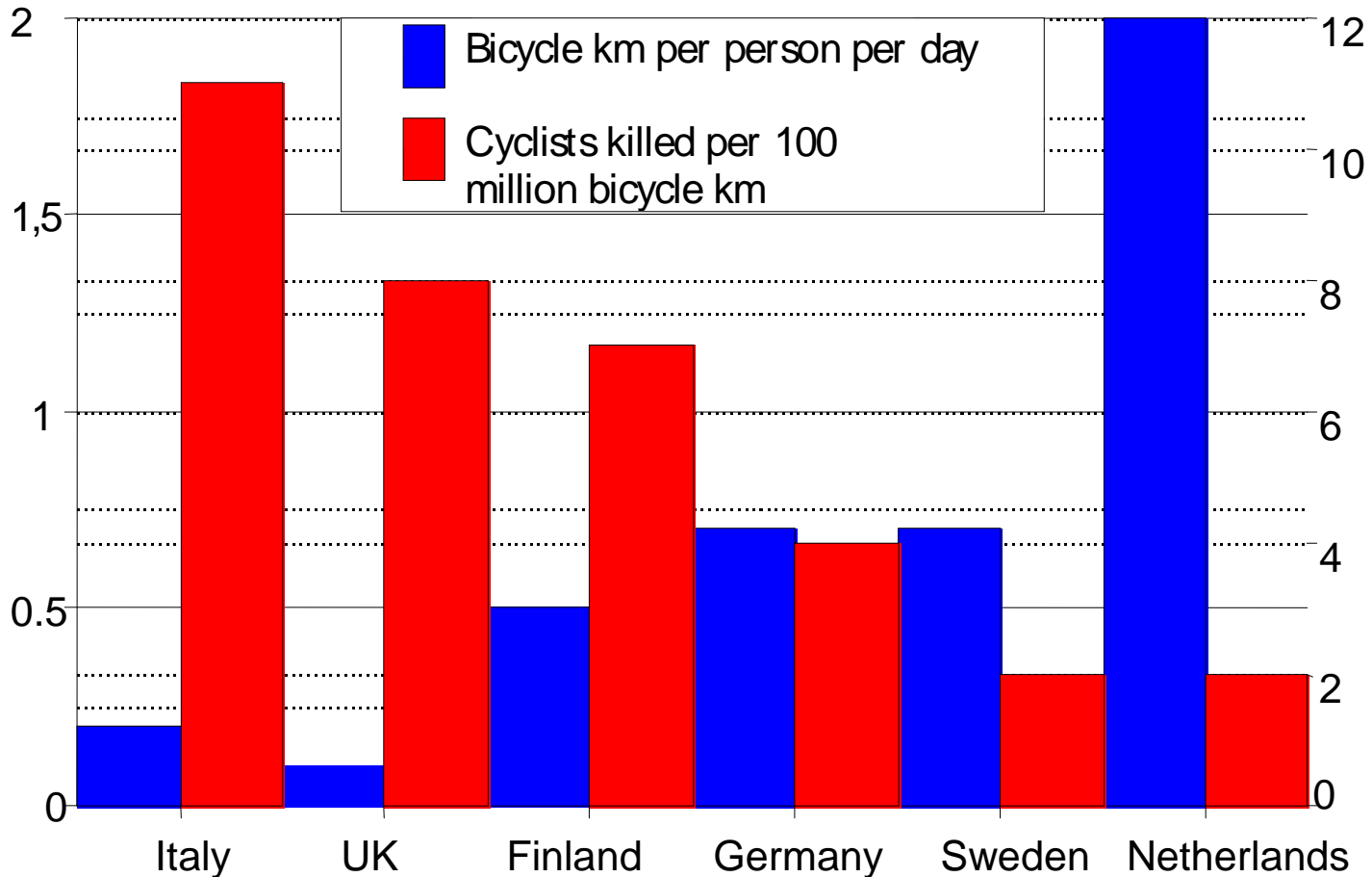
- Cheap to buy, to use and to maintain
- 12 bicycles on 1 car parking place
- Walking is most economical for distances less than 5km
- Cycling is most economical for distances up to 10km
- Pedestrian can carry over 25kg
- Cyclist can carry over 2m³



12 OP DE PLEK VAN 1



Safety in numbers



Objectives

- Learn to understand reasons for using HPT
- Identify social, economical and safety barriers for these modes
- Develop strategy tools that can be used to increase the use of HPT



Working method

- Fact sheets
- Survey
- Design aspects



City fact sheets

Helsinki, Finland

Warsaw, Poland

Bergen, Norway

Tokyo, Japan

Yokohama, Japan

London, UK

Strasbourg, France

Lyon, France

Rennes, France

Paris, France

Bordeaux, France

St. Etienne, France

Toulouse, France

Utrecht, Netherlands

Enschede, Netherlands

Antwerp, Belgium

Hasselt, Belgium

Brussels, Belgium

Bratislava, Slovakia

Münster, Germany

Information

- Population
- Modal share
- Bike ownership
- Car ownership
- Safety devices
- Facilities
- Main purpose



Survey

Detailed information:

- Tokyo (ave bike and walk)
- Münster (high bike)
- Utrecht (high bike)
- Paris (low bike)
- London (low bike)
- Lyon (high walk)
- Strasbourg (high walk)
- Antwerp (low walk)
- Hasselt (low walk)



Information

- City density
- Income per capita
- Income structure
- Social structure
- Topology
- Weather/climate
- Facilities (12)
- Security measures
- Price of car parking



Design aspects

Information on design aspects from:

- Australia
- Belgium
- Canada
- Finland
- France
- Germany
- Great Britain
- Hungary
- Japan
- Netherlands
- Norway
- Poland
- Slovakia
- Sweden
- USA

Design aspects bicycles

- Volume mix with motorised traffic
- Volume mix with pedestrians
- Design speed
- Standard size
- Priority
- Position on the road
- Position on roundabouts
- Position at traffic lights
- Parking
- Width lane and path



Design aspects pedestrians

- Volume mix with bicycles
- Design speed
- Design width
- Position on the road
- Width pavement (side walk)



Results

- Fact sheets
- Survey
- Handbooks



Fact sheets

- Large correlation between use of bicycle and bike ownership
- Hardly any correlation between availability of bike lanes and use
- No correlation between bike transported on bus and use
- Small negative correlation between car ownership and walking

Survey I

- Small correlation between income and bike use
- Small relationship between income structure and walking or cycling



Survey II

- Small correlation between topology and cycling and walking
- No relationship between climate and walking or cycling
- No relationship between facilities and walking or cycling



Survey III

- Small relationship between price of parking and walking or cycling
- No relationship between price of public transport and walking or cycling



Other findings

- A complete network is more important than limited facilities
- Free bike transport on public transport encourages bicycle use



Design Aspects: Bicycle facilities

- Mix cars and bicycles:
2,800 - 15,000pcu/day
- Design speed for
bicycles: 20-40km/h
- Standard size (width):
0.6-1.0m
- With bicycle lane:
1.2-2.2m
- Width bicycle path:
1.5-3.0m



Design Aspects: Pedestrian facilities

- Design speed:
0.8-1.5m/sec
- Standard size
(width): 0.75m
- Width of
pavement:
1.2-3.0m



Design Aspects: Extra

- ➔ Importance of Public Spaces
- ➔ Smart solutions:
contra flow at one way streets
bicycle rent at railway stations



Conclusions I

- Bicycle for trips less than 10km
- Walking for trips less than 5km
- Cycling and walking is good for our health and the environment
- HPT against congestion



Conclusions II

- No logical reasons for NOT using HPT
- Image can be a social barrier to HPT
- Increase number of cyclists results in decrease number of fatalities



Actions

- Cyclist is not a pedestrian with wheels
- Bicycle is not a poor man's Mercedes



Wow, she can afford to use the bicycle

