Cycling in an urban environment

Prof. dr. Martin van Maarseveen
Cycling Awareness Seminar
Cairo, 19 November 2015
PART 1

- The planning challenge
- The bicycle, a modern mode of urban transport
- Success factors in NL
- Basic design elements
- Supply of bicycle facilities
Cities place tremendous strains on natural resources and the environment.

Land use and transport planning are crucial for giving direction to urban developments.

Dense cities designed for efficiency offer one of the most promising paths to sustainability.

New ways of thinking about how to make cities more self-sufficient and sustainable, along with advances in a wide range of technologies and heightened environmental awareness is leading to a reformulation of urban planning and development.
THE BICYCLE, A PIECE OF THE PUZZLE

- Cycling is part of the transport system in highly motorized countries
- Cycling contributes to livelihood, to urban quality and the economic vitality of cities
- The economic and environmental benefits of cycling are high
- Cycling can be an important feeder of public transport
- To promote cycling, planning for cycling (conditions) needs to be an integral part of urban and transport planning
SUCCESS FACTORS OF DUTCH PLANNING FOR NMT

1. Cultural and political
2. Spatial development
3. A high (quality) level of bicycle infrastructure, also parking
4. Good integration with public transport
5. A strong and innovative industry
6. Effective traffic safety policies and legislation
7. Knowledge integration and societal involvement
BASIC DESIGN ELEMENTS

- Quality criteria
  - Coherence
  - Directness
  - Attractiveness
  - Safety
  - Comfort

- Road network principles
  - Social function versus traffic function
  - Variation versus uniformity
  - Segregation versus integration
SUPPLY OF BICYCLE FACILITIES

Integrated approach needed on network level and not fragmented in space

- Cycle paths
- Traffic signals
- Signage
- Bicycle parking
- Bridges / ramps
- Street lighting
- Modal integration
PART 2

- Education for NMT
- Awareness building for NMT
- Social marketing for NMT
- Advocacy for NMT

End cycle of vulnerability

Source: The Streets of India
This part focuses on instruments that target the **active involvement of people**.

**Education** requires primarily teachers and instructors. **Awareness building** and **social marketing** involves marketing and communications techniques, while **advocacy** is usually driven by user representatives, that is, civil society organizations.

Dividing lines are not always sharp. Advocacy and awareness building combine well. Often advocacy groups also drive awareness building processes or start up educational activities.
EDUCATION

Education refers to systems that teach people

- the skills to use vehicles
- how to use transport infrastructure
- how to behave in and to cope with traffic
- traffic regulations

Source: www.cyclingscotland.org

Source: samletstalkaboutlife.blogspot.com
EDUCATION FOR NMT

- Education’s added value compared to planning and design is highly significant and, at the same time, relative.

- It is **significant** since it teaches people about safe, efficient and comfortable behaviour. Education also stimulates self-awareness, self-confidence and self-respect.

- It is **relative** in the sense that both road and vehicle design can have more influence when it comes to preventing serious accidents. Education and regulations alone cannot control traffic behaviour. For this, road and intersection designs are vital allies.
Awareness building for sustainable transport reflects to ways by which we teach people about the benefits and costs of transport choices from the perspective of the dimensions of sustainability.

When it comes to NMT it is important to teach people about benefits and costs of walking and cycling.

In 2009 an awareness building event for problems of mobility in rural Africa took place in Zambia and South Africa, organised by World Bicycle Relief and World Vision.
BENEFITS AND COSTS OF TRANSPORT CHOICES

- travel times
- travel costs
- energy consumption
- pollution
- noise
- safety
- comfort
- health
- etc.

Cairo, Egypt, October 2012
© Martin van Maarseveen

© Julia Galloway Matteson
SOCIAL MARKETING FOR NMT

Social marketing is the systematic application of marketing, along with other concepts and techniques, to achieve specific behavioural goals for a social good.

Examples of social marketing include the campaigns to encourage people not to smoke in public, use seat belts, follow speed limits, or to change travel habits.
In marketing, demand orientation is key to selling a product. In social marketing, a social interest is at stake, but the demand orientation is equally important.

The quality of walking and cycling depends on different kinds of measures, which have to be fine-tuned to the skills, needs and perceptions of different categories of pedestrians and cyclists.
Marketing is much more than a promotion strategy.

Promotion occurs late in the marketing process. It seeks to make products and services known and invite people to use them.

But prior to promotion, people’s needs and preferences must be assessed and an inventory compiled to identify what will people make change their behaviour.
ADVOCACY FOR NMT

Advocacy refers to the way individuals and particularly groups participate to promote non-motorised transport, and to move NMT up personal, private sector and governmental agendas.

Advocacy involves arguing and campaigning in favour of something, such as a cause, idea, or policy.
ADVOCACY PLANNING CYCLE

**Identify the issues**: What do we want to change?
**Analysis**: What do we already know and what information can we use?
**Setting objectives**: these should be SMART (Specific, Measurable, Attainable, Realistic, and Timely)
**Identify targets**: Whom do we want to influence?
**Identify allies**: With whom can we work?
**Define the message**: How do we formulate our message?
**Select tools**: How can we best communicate and reach our targets?
**Monitoring and evaluation**: How can we measure activities?
ADVOCACY EXAMPLES

- Car-free days
- Street play days
- Bike weeks or months
- Advocacy to claim cyclists’ rights
- Inspection, checklists, community audits

Source: UWABA, Road Safety Week

Streetball Luanda, Angola
In the Netherlands, the Fietsersbond (Dutch Cyclists Union) organizes a Bike City Competition regularly. The Union developed a benchmarking instrument to measure the cycling climate of a city based on 11 different indicators. In the audits this instrument plays an important role. Local governments appear to be quite eager to take part in this competition to challenge for the title “Bike City of the Year”. In preceding periods they become quite active in planning and implementing all kinds of bicycle-friendly measures to be able to show a good performance.
ADVOCACY EXAMPLE

INVITATION

The Embassy of the Netherlands in Egypt invites you to participate in this year's Orange Bike Day

Please register via http://gbi-egypt.com/2015/OrangeDay.php

Welcome from: 07:30hrs - Start Cycling Tour: 08:30hrs

Organized by: The Embassy of the Netherlands in Egypt

Friday 20 November
Starting Point: 18 Hassan Sabri St, Zamalek.
Embassy of the Netherlands
1ST BIKE SURVEY WEEK, THE NETHERLANDS
14-20 SEPTEMBER 2015

Dataflow FietsTelweek
(voorbereid op IMMA)

Source: Scheper et al, NVC 2015
1ST BIKE SURVEY WEEK, COMMUNICATION STRATEGY

Advocacy: Power of VGI:
56,000 participants
Ca. 2,000,000 bike km.

Importance of measuring & monitoring
PART 3

- Health benefits of cycling
- Cost benefit analyses of cycling

Source: www.beological.nl

Source: www.myhandlebar.com
CYCLING IS HEALTHY

Walking is man’s best medicine

Hippocrates
MORTALITY RISK IMPACTS

- Comprehensive medical research has resulted in the following mortality risk reductions depending on the amount of weekly physical activity:
  - 150 minutes moderate activity yields a reduction of 19%
  - 168 minutes of walking coincides with a reduction of 11%
  - 100 minutes of cycling results in a reduction of 10%

  *Applicable for ages between ca. 20 and 90 years*

- These effects are processed within the Health Economic Assessment Tool (HEAT) of the WHO of 2014: heatwalkingcycling.org

LOWER DISEASE BURDEN

- Heart and vascular diseases
- Cancer
- Obesity
- Diabetes
- Clinical depression
- ...

Physical activity is a means to fight clinical depression and appears to be as effective as therapies and medication.

CRITERIA FOR HEALTH BENEFITS

- Disability Adjusted Life Years:
  - Years of Life Lost (YLL)
  - Years Lived with Disability (YLD)

- Monetary valuation:
  - Quality of life
  - Saved health care costs
  - Higher (labour)productivity
  - Costs of traffic accidents

HEALTH BENEFITS OF CYCLING

- Increasing interest for cost-benefit analysis methods in scientific literature

- Several methods are available.

- Results of application of disease burden method to the level of bike use in the Netherlands are (conservative estimates):
  - €4,1 to €6,8 million per year
  - €0,28 to €0,47 per bike km
ARE THERE ALSO DISADVANTAGES?

More cycling (and walking)

- Air pollution
- Traffic safety
- Exercise

Impact by more cycling (and walking)

Less car use

- Air pollution
- Traffic safety

Impact by less car use

All-cause approach

Advantage

Disadvantage

SOCIAL BENEFITS MODAL SHIFT PER KM
CAR-BIKE AND BUS-BIKE, IN- AND OUTSIDE URBANIZED AREA (NL)

Source: MKBA Fiets, 2012
BIKENOMICS: HOW BICYCLING CAN SAVE THE ECONOMY? – ELLY BLUE

<table>
<thead>
<tr>
<th>ECONOMIC</th>
<th>SOCIAL</th>
<th>ENVIRONMENTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic contribution</td>
<td>Social conditions</td>
<td>Change in environmental</td>
</tr>
<tr>
<td>Private sector support</td>
<td>Cycling culture</td>
<td>conditions</td>
</tr>
<tr>
<td></td>
<td>Image/Pride</td>
<td></td>
</tr>
<tr>
<td><strong>NATIONAL</strong></td>
<td><strong>SOCIAL</strong></td>
<td><strong>ENVIRONMENTAL</strong></td>
</tr>
<tr>
<td></td>
<td>Logistics</td>
<td>Tourism</td>
</tr>
<tr>
<td></td>
<td>Tourism</td>
<td>Use of public space</td>
</tr>
<tr>
<td></td>
<td>Accessibility</td>
<td>Quality of public space</td>
</tr>
<tr>
<td></td>
<td>Public spending</td>
<td>Image/cycling culture</td>
</tr>
<tr>
<td></td>
<td>Improved capacity</td>
<td>Partnerships</td>
</tr>
<tr>
<td><strong>CITY</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Employee health</td>
<td>Company image</td>
</tr>
<tr>
<td></td>
<td>Logistics</td>
<td>Energy on the workflow</td>
</tr>
<tr>
<td></td>
<td>Tourism</td>
<td>Innovation</td>
</tr>
<tr>
<td></td>
<td>Use of public space</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Quality of public space</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Image/cycling culture</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Partnerships</td>
<td></td>
</tr>
<tr>
<td><strong>COMPANY</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Health</td>
<td>Access to public space</td>
</tr>
<tr>
<td></td>
<td>Fun</td>
<td>Pride in home image</td>
</tr>
<tr>
<td></td>
<td>Mobility</td>
<td>Personal wellness</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>INDIVIDUAL</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
THANKS FOR YOUR ATTENTION

m.f.a.m.vanmaarseveen@utwente.nl

www.itc.nl