The recurrence of health in urban planning

Thomas Verbeek, PhD student
Ghent University (Belgium)
Oosterweel zal jaarlijks 56 levens eisen door fijn stof

Het extra vrachtwagen dat de geplande Oosterweelverbinding aantrekt, zal in de Antwerpse regio elk jaar 56 extra levens door fijn stof eisen. Dat zeggen een aantal dokters van de actiegroep ‘Ademloos’ op basis van het milieueffectenrapport.

It cannot be that environmental pollution is accepted as collateral damage

Simulatie van de Lange Wapper, de brug over de Schelde die de Antwerpse Ring moet rondmaken.

“Oosterweel will annually claim 56 lives by particulate matter”

(De Standaard, 05-03-2008)
ademloos.be

RED DE STAD!
OVERKAP DE RINGS!

FIJN STOF IS SLECHT
Research question

How do we have to include the aspect of environmental health in urban planning practice?

- **Why** is this topic relevant?
- **What** is environmental health today?
- **How** do people perceive this?
Determinants of health

(Ruwaard & Kramers, 2003)
Relevance of environment, individual life style and genome in explaining diseases, during the last 200 years

(De Hollander & Bol, 2004)
Relevance of environment?

- From quantity to quality of life

"Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity."

(WHO, 1946)
Relevance of environment?

- From quantity to quality of life
- Indirect impacts on health

(Barton & Grant, 2006)
Relevance of environment?

- From quantity to quality of life
- Indirect impacts on health
- Environmental justice

(Bouwman et al., 2001)
Research question

How do we have to include the aspect of environmental health in urban planning practice?

- **Why** is this topic relevant?
- **What** is environmental health today?
- **How** do people perceive this?
Which impacts?

- Literature study

- Two important choices
  1. Focus on impacts caused by the physical environment
  2. Focus on differences in environmental characteristics at the neighborhood level
    → Most relevant for urban planning
Impacts

- Air pollution
- Noise
- Absence of a restorative environment (i.e. green space)
- Lack of physical activity
- + others

![Diagram showing the relationship between spatial conditions, impacts, and health effects]
Relation between pollutant concentrations and distance from freeways and wind direction

(Zhu, 2002)
Exposure-response relationship between distance of the home from nearest main road and parent-reported *wheeze* in primary schoolchildren

(Venn et al., 2001)
Association between road traffic noise level and incidence of myocardial infarction (total sample vs. subgroup with minimum 15 years of residence time)

(Babisch et al., 2005)
Relation between amount of green space (in a 3 km radius) and self-perceived health

(Maas, 2006)
Probability of **obesity** in relation to land-use mix

(Frank, 2004)
Next step

- Towards mapping tool
- Every layer an impact
- Integration of impacts
- Healthy vs. unhealthy neighborhoods
- Tool for urban planners

Diagram:
- Air pollution
- Noise
- Green space
- Urban form
- Urban environmental health map
Research question

How do we have to include the aspect of environmental health in urban planning practice?

- **Why** is this topic relevant?
- **What** is environmental health today?
- **How** do people perceive this?
  - Further research
  - Survey on perception of environmental health
  - Confrontation with urban environmental health model
Research question

How do we have to include the aspect of environmental health in urban planning practice?

QUANTITATIVE APPROACH

COMMUNITY APPROACH

MODELING

PERCEPTION RESEARCH