

*Welcome to*

*Pre-conference Workshop WALK21 Barcelona, 7 October 2008*

*Measuring Walking*

*part II*

*Counting Pedestrians*

*Moderator: Daniel Sauter, Urban Mobility Research, Zurich, Switzerland*

## *Idea and objective of the day*

- Focus on counts as important aspect of measuring walking
- Special focus on automated counts - learn about different technologies, their strengths and possible limitations
- Bring together the different stakeholders in the field of counting pedestrians (users, researchers, producers etc.)
- Engage in dialogue about experiences and needs, new products, developments and solutions
- Identify priorities and outstanding gaps in international standards
- Provide and exchange practical know-how re counts

# Programme

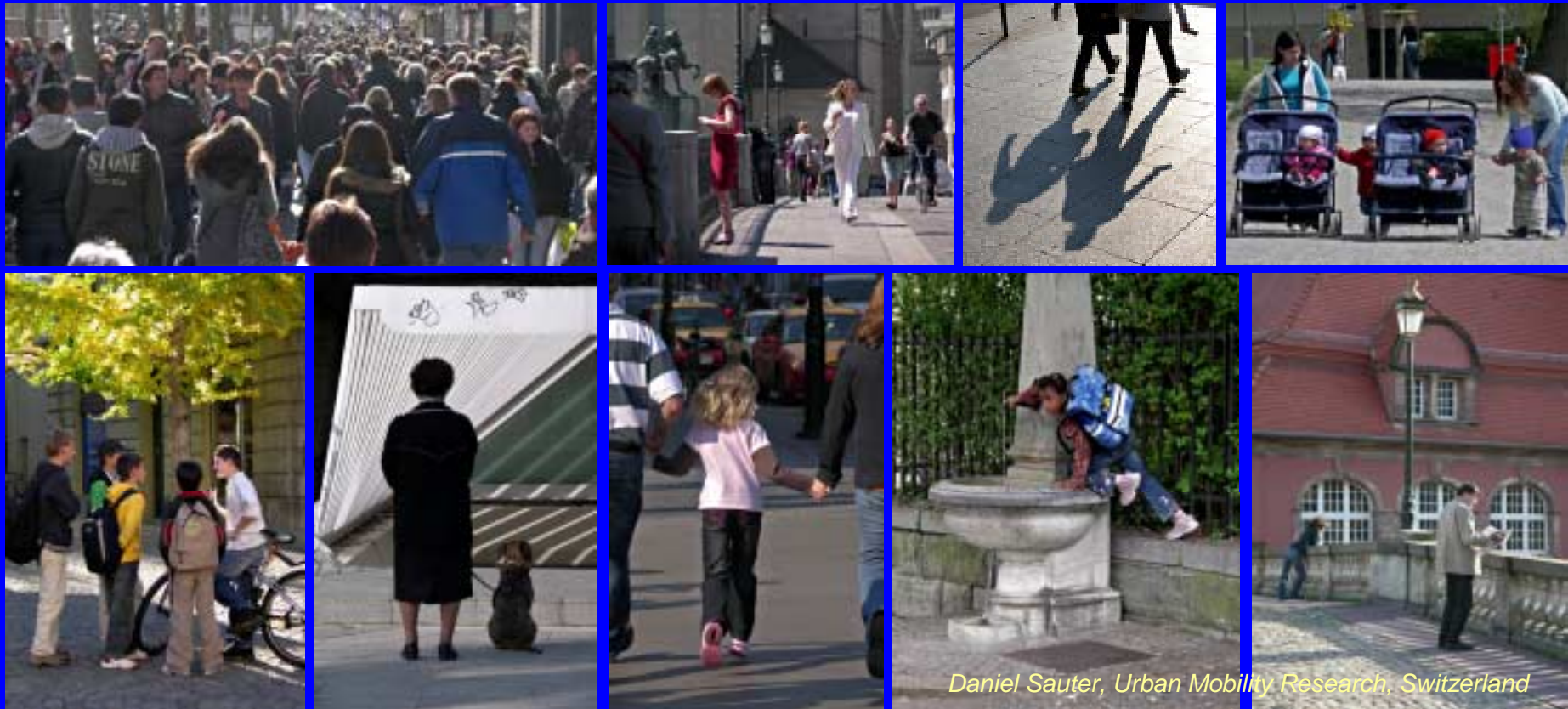
9:00 start

- A: Welcome and introduction
- B: State-of-the-art – the user's side  
Experiences and views from cities, public bodies etc.
- C: State-of-the-art – the producer's/provider's side  
Presentations of available technologies
- D: Market place & simultaneous light lunch
- E: Standardisation, research needs & future cooperation

16.00 end      ⇒ in between coffee break

# *Welcome & introduction*

Participants present themselves briefly:  
background, interests, expectations



*Daniel Sauter, Urban Mobility Research, Switzerland*

# *Background*

## **Problem**

- Walking data often not collected
- Available data often not comparable, validity unclear  
⇒ comparisons difficult or impossible

## **Promising changes**

- Increasing interest to measure walking (by cities etc.)
- New evaluation methods developed
- New technologies and equipment placed on the market

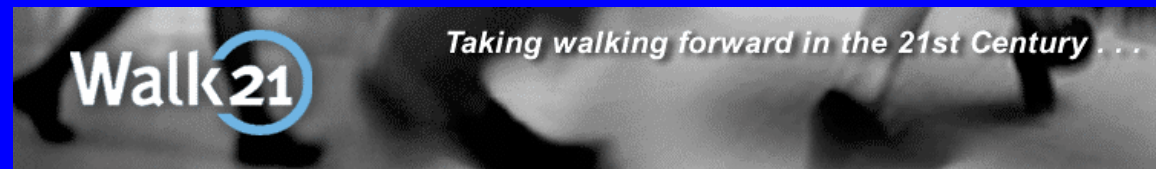
⇒ Window of opportunity

# Objective

*“Establishing a set of international guidelines for the collection, analysis and dissemination of quantitative and qualitative techniques for measuring walking.”*

*(WALK21 conference conclusions Melbourne 2006)*

⇒ Guidebook / reference book with recommendations by international experts



# *Approach*

- **What should we measure?**  
Which dimensions / indicators are desirable and/or necessary to evaluate walking and public space?
- **How should we measure it?**  
Which methods and tools are useful?
- **What to standardise internationally – and how?**
- **Comprehensive approach – covering all aspects of walking, but ...**
- **...also focused and setting priorities: Neither necessary nor desirable to standardise everything**
- **Build on existing standards and experiences**

# *Activities and results since W21 Toronto*

## **Toronto, October 2007:** brainstorming and exchange

- illustrated extent of the issue, large variety of approaches
- learned that differentiated yet simple approach is necessary

## **PQN-Survey 2007:** 9 countries participated

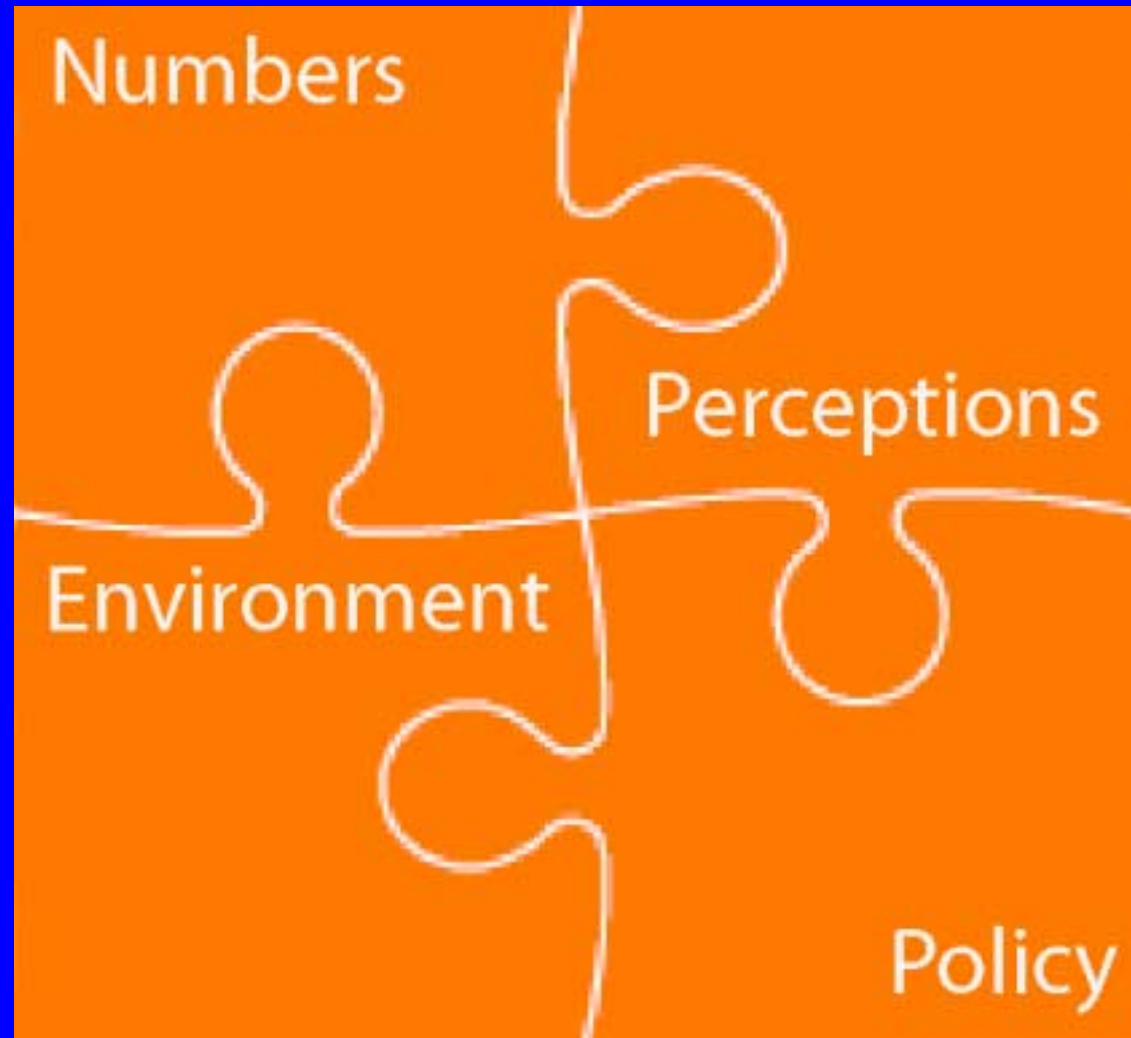
- confirmed how little is known and done
- information on available methodologies and data collections (e.g. transport, accidents), but data not always in quality needed

## **Annecy, May 2008:** Conf. Survey Methods in Transport

- methodologies need to be based on the characteristics of walking
- learned how methods start to converge (e.g. GPS)



# *Main dimensions of Measuring Walking*



# *Dimension 1: Numbers*

A Transport and travel behaviour (time use/activity surveys)

B Pedestrian volume (numbers) & behaviour

B1 Number of pedestrians in street (users)

B2 Behaviour of pedestrians (route choice, tracking, conflicts)

B3 Pedestrian flows and simulation

C Activities and time spent in public spaces (sojourn)

D Road danger (safety)

D1 Traffic accidents with pedestrians (involving at least one vehicle)

D2 Single pedestrian accidents (falling, stumbling)

E Security (threats, attacks, harassments)

F Health (BMI, activity m., competences/disabilities)

## *Dimension 2: Environment / facilities*

- G Walking environment, accessibility, quality of public realm, micro-climate, infrastructure provisions (,walkability‘, level of service) etc. links to other transport modes
- H Land-use, distances to provisions (macro accessibility); (spatial analysis, GIS)
- I Ecological footprint (benefits of walking re carbon & noise reduction)

## *Dimension 3: Perceptions*

- J Perceptions, attitudes and images:  
personal satisfaction, ‚measuring the smiles‘
  - also subjective assessments of numbers,  
environment and policy

## *Dimension 4: Policy*

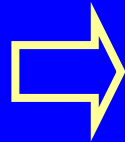
- K Data on institutional aspects:  
investments, personnel, research etc.  
policies and strategies, promotion of walking  
participation of inhabitants (citizens)

# Approach: basic vs. derived dimensions

## Basic dimensions

- Numbers
- Environment
- Perceptions
- Policy

⇒ Minimally harmonised data requirements



## Derived dimensions

- derived measures
- combinations of dimensions
- new relations etc.

⇒ Unlimited range of uses, research questions, possible applications, tasks, purposes etc.

## Examples

- Economic benefits
  - ⇒ cost-benefit analysis
- Safety benefits
  - ⇒ risk/exposure
  - ⇒ safety assessment
- Comfort benefits
  - ⇒ capacity (Fruin)
- Health benefits
  - ⇒ influence of built environment on walking
- et cetera

# *Terminology & Quality levels*

**Dimension:** Indicator to assess walking in certain aspect (e.g. safety, mobility patterns, walkability)

**Method:** procedure to collect data (e.g. interviews counts, observations, audits)

**Tool/instrument:** (technical) equipment to collect data (e.g. counter/timer, video camera)

To reflect different needs and stages of development, three quality levels in each (sub-) dimension are created:

- Quality level 1: ‚basic‘ or minimal requirement
- Quality level 2: ‚intermediate‘
- Quality level 3: ‚elaborate‘

# Long-term perspective on Measuring Walking

*International  
Charter for  
Walking*

*Phase 1:  
Creating the foundation  
⇒ defining important  
dimensions (8 principles)*

*International  
Standards for  
Data Collection*

*Phase 2:  
Standardising & harmonising  
⇒ defining what and how to  
measure walking  
⇒ five indicators to start*

*Data Collection  
and Quality  
Management  
Procedures*

*Phase 3:  
Monitoring & managing  
⇒ “most walkable city”*

2003 - 2006

2006 - 2010

2010 and beyond

# Opportunities in phase 3

- **Collecting data** => systematic counts, audits, surveys etc.
- **Benchmarking** => city reports (example of Copenhagen for cycling)
- **Data pooling & exchange** => e.g. European Observatory for Urban Mobility

## **Numbers**

⇒ city with highest share of people walking (e.g. school children)

## **Environment**

⇒ city that is most walkable, most pleasant to stay in

## **Perceptions**

⇒ city with the most smiles, happiest pedestrians/sojourners

## **Policy**

⇒ city with best walking/sojourn policies, strategies



# *Wish list for automatic counters ...*

*...by someone who's done mostly hand counts so far...*



*...and some  
first trails...*



Uster, Switzerland,  
September 2003

# *Wish list for automatic counters ...*

*...by someone who's done mostly hand counts so far*

- suited for counts in mixed traffic situations, possibly with synergies of counting bicycles and pedestrians
- mobile and easy to install (mounting positions, height etc.)
- accuracy of 90% (or, of course, more) (at this point in time)
- low energy needs and/or easy power solutions
- secure from vandalism and theft
- reasonable price (equipment, installation & running)
  
- weather resistant (high/low temp., rain/snow, fog, ice on ground)
- small size, discreet (permissions / 'big brother' issues)
- easy data accessibility/transfer and data processing (software)
- transparency about possible problems / limitations  
such as non-relevant moving objects (blowing leaves); shadows/reflections; people walking close together ("covering"); difficult lighting situations (e.g. back lighting) includes children/small people, people standing still or suddenly changing directions

## *Part B: State-of-the-art – the user's side*

- **Brett Little**, Transport for London, Pedestrian Monitoring Programme, London, UK
- **Robyn C. Davies**, Program Manager Cycling & Pedestrian Facilities, Queensland, Australia, presenting on behalf of Michael J. Langdon
- **Charlie Zegeer**, Director Pedestrian and Bicycle Information Center, University of North Carolina Highway Safety Research Centre, Chapel Hill, NC., United States
- **Beatriz Huarte**, Municipality of Barcelona, Department of Planning and Mobility Studies, Spain
- **Anne Glover**, The Access Company, London United Kingdom

## *Part C: State-of-the-art – the producer's side*

- **Jean-François Rheault**, Eco-counter, Project Manager, Lannion, France
- **Diane Wehrle**, Marketing Director, and **Steve Booth**, Commercial Director, Springboard, Milton Keynes, UK
- **Rainer Holsteg**, Sales Manager, LASE PeCo Systemtechnik GmbH, Wesel, Germany
- **Alasdair & Pamela Chambers**, Directors, Chambers Electronics, Inverness, UK
- **Smart Systems**: information presented by facilitator on behalf of Austrian Research Centers GmbH, Vienna, Austria
- **Aliaksei Laureshyn**, doctoral student, and **Håkan Ardö**, Lund University & Cognimatics AB, Lund, Sweden



*Thank you!*