Stimulating walking environments...

... and more
1  

Walking – what is it?
Pedestrians...

- Unconscious mobility
- Low weight
- No swinging radius
- Can turn spontaneously
- No braking distance
- Can stop from one step to the next
- React quick and intuitive
- Need little space
- Can perform activities on the way

Walking is mobility – but also human behaviour!
Walking is an outdoor mobility
Walking results in a sensory experience

Five Senses
Walking stimulates all senses... can not switch off their sense organs... and are always exposed to the urban environment!
80% visual!
Conclusion 1

1. Pedestrians are exposed to the urban environment.
2. We can observe the environmental effect!
How does the urban environment influence walking?
Impact of environmental walking experience

1. Emotions
2. Perception of time
Emotions
Psychologists explain...

Pleasantness
Stimulation

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How can we measure pleasantness and stimulation?

Pleasantness: Interviews

Stimulation: Observations
Stress

Happiness, excitement

Boring

Relaxing
Pedestrians experience of time

We do not experience time as constant
Time perception: Effect for walking

Time passes fast

Perceived walking speed high

Distance short
Subjective perception of time – psychologists explain...

Low stimulation

High stimulation

Long ...

Short!!
Variation distance perception **30%**

No «soft factor»!

Variation of perceived walking distance:
- **17%**
- **12%**
- **10%**
- **9%**
- **14%**
- **11%**
Conclusion 2

The character of the urban environment influences walking measurably.
3

Walking for Public transport?
One journey - four trips
3. Travel time from door to door:

- 56% In vehicle
- 44% on foot

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What do you remember from a journey?

31% Memories as passenger
61% Memories as pedestrian
Conclusion 3
“First and last mile”

耻辱！

PT infrastructure investments

Memory of a public transport journey

94%

44%

56%

30%

70%

12 Cities on three continents, 42,000 interviews; Brög & Hillnhütter, not yet published
Walking: Potentials and possibilities for public transport
Important:
Walking distance to the stop

Important factor for the number of potential public transport users

Many factors involved...
Urban environment important!
Acceptable walking distances vary...

Car dominated

Pedestrian-oriented

Peperna 1982
Catchment area triples in size

Attractive walking environments can triple the amount of potential public transport users
How to achieve this effect?

... through urban planning?
Urban environments for **good emotions** and short perceived distances

Subjective perception

Distance

Time

Good emotions

Hillnhütter 2016

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Access to shops & services along the walk

15 to 25 %

longer walking distance

Hillnhütter 2016
Waiting at street crossings

Waiting time:

**10 – 15 %**

... of a 300m walk to the stop*

* 1x crossing at traffic light at trafficked street (>1500 cars per hour)
Good footpath networks & obstacle free paths

No obstacles in streets

Dense footpath network

Up to +20%

+10 to +25%

Hillnhütter 2016
Longer walking distances to public transport:

1. Good emotions and short perceived distances +30%
2. Accessible shops and services +25%
3. Crossing trafficked streets -15 to -15%
4. No obstacles and good networks +45%

\[ \sum > 70\% \]

Conclusion 4:
Urban planning
Urban design
Transport planning
Verry doable!!

Catchment area

Hillnhütter 2016
Conclusion
Urban design principle 1

Variation!
Environments in human scale
Public transport for more walking!

Linking urban quarters for walking

Access: 94%
Travel time: 44% (56% by other means)
Memory: 30% (70% by other means)
Much walking in cities with high shares of public transport

Walking & walking required

Rotterdam (NL) (2008)

Zürich (CH) (2015)

Copenhagen (DK) (2015)

Conclusion
Conclusion

Combined strategies for synergy effects

1. Higher return from public transport investments!
2. More walking & more public transport!
3. More effective reduction of car driving!
Walking

Outdoor mobility

Public transport

Outdoor mobility

Cycling

Outdoor mobility

Car

Urban environment critical factor to reduce car driving!

Conclusion

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Walking as universal strategy

Effective mobility

Economic

Socially inclusive

Less driving

Attractive cities

Ecology & climate

Safer cities

Increased societal health

Sustainable Development Goals