

Public transport users are pedestrians





From home to  
the office by bus



# 4 stages

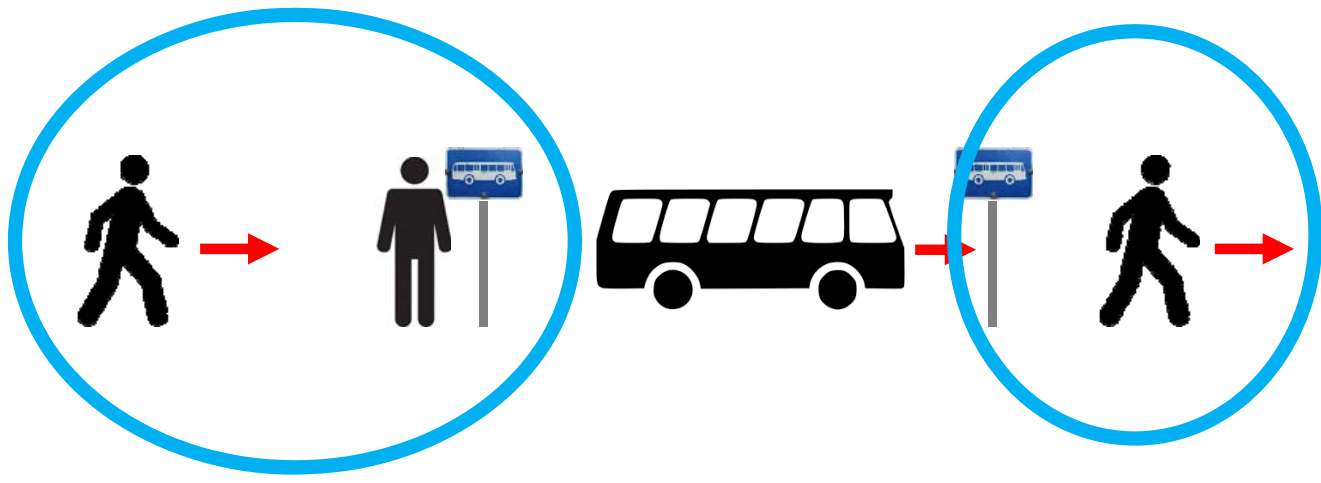


1

2

3

4

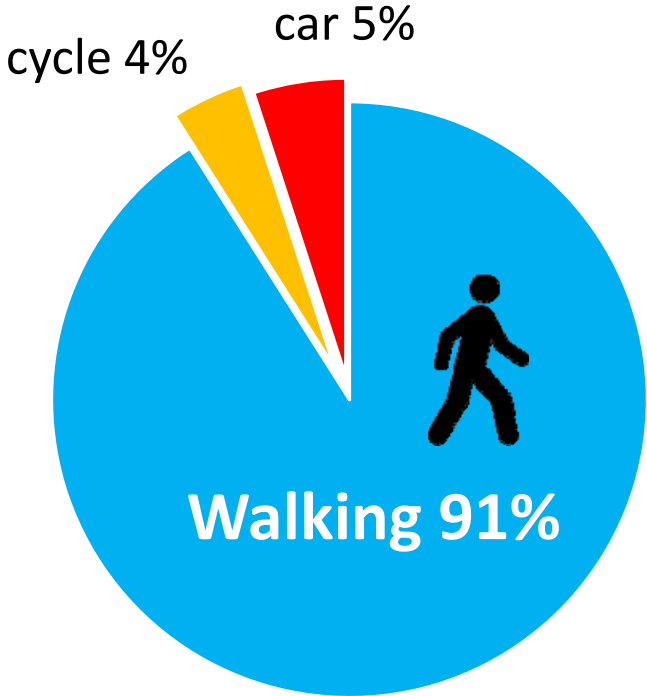


# How do public transport users reach the stop?



4 German cities

Research institute SOCIALDATA



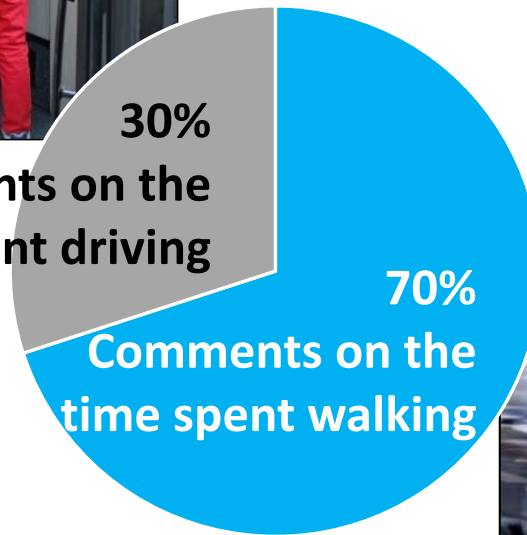
German cities average

National German Travel Survey 2010

Asking after the remembered experience of a public transport journey...



**30%**  
**Comments on the  
time spent driving**

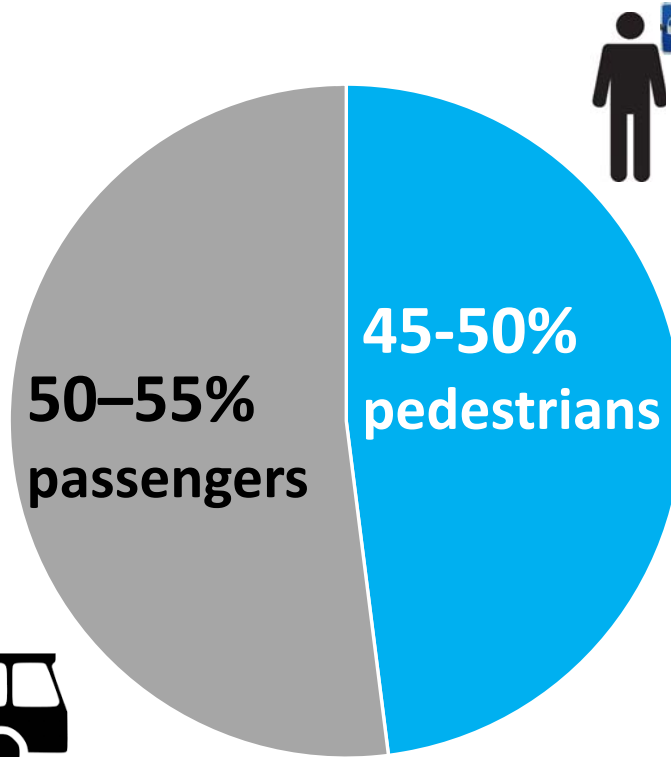


**70%**  
**Comments on the  
time spent walking**

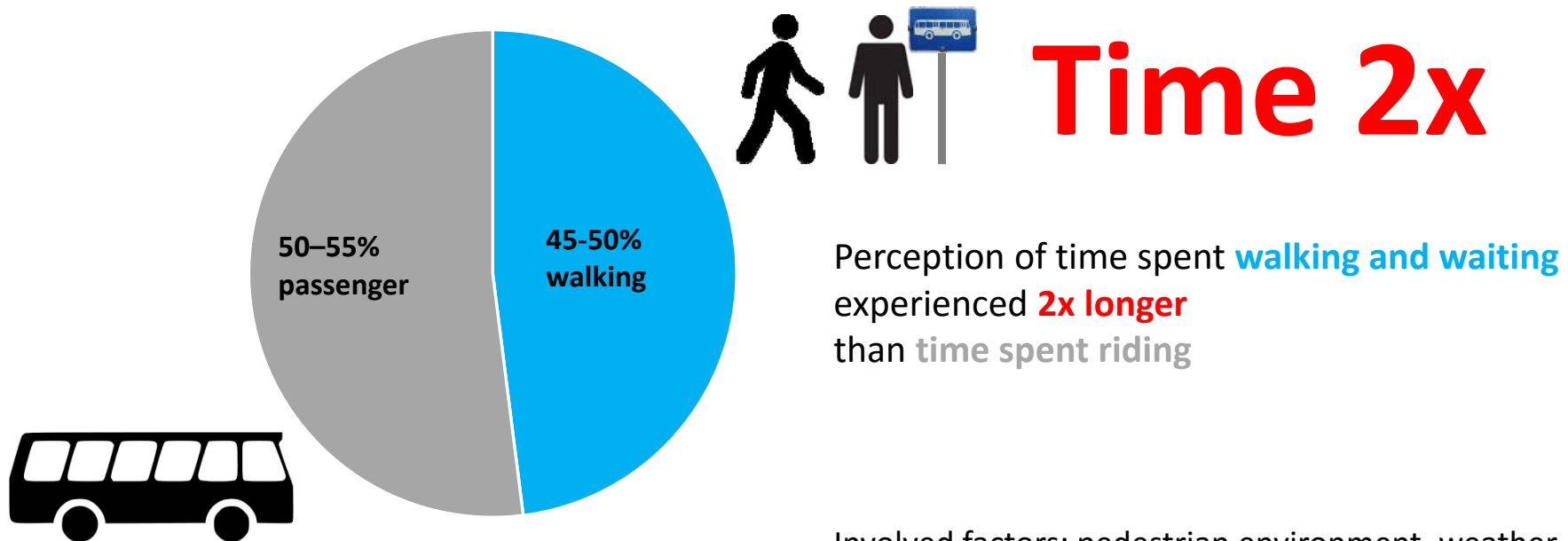




How long last the 4 stages of a public transport journey?



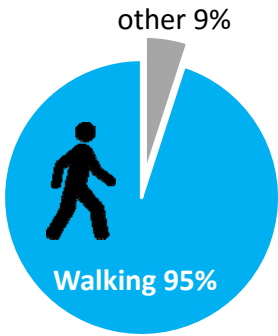
## Objective travel time and subjective time experience



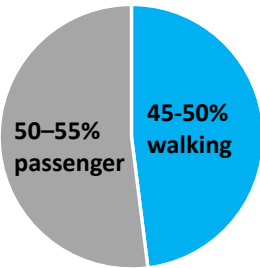
Involved factors: pedestrian environment, weather, daytime ...

Wardmann 2006

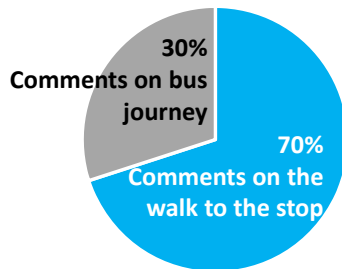




The majority walk to the stop

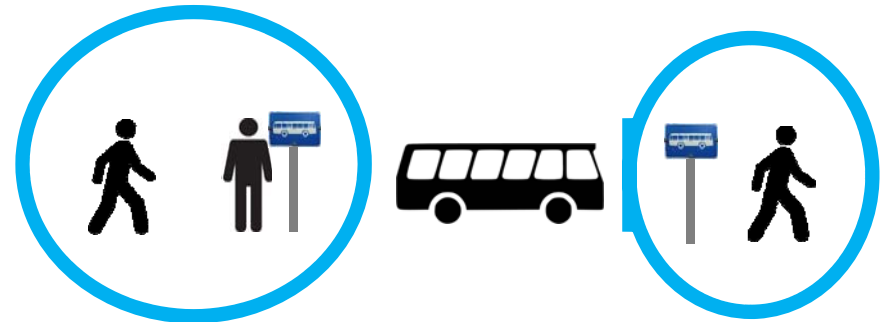


50% of the time on foot

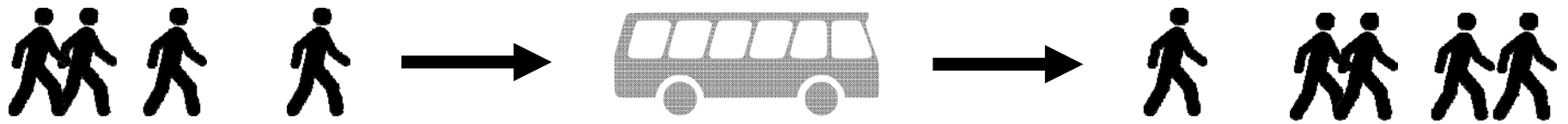


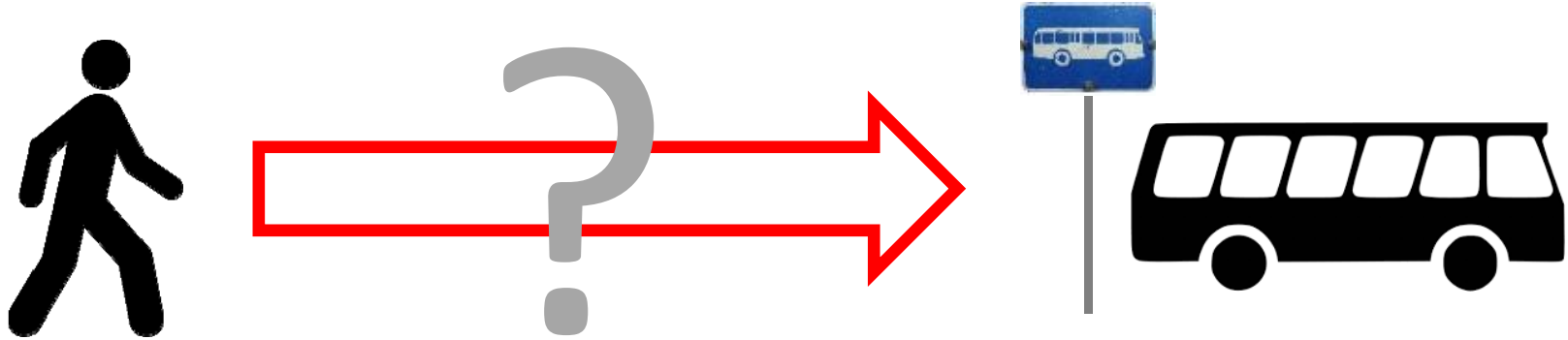
Impression of the walk to the stop dominates

## Public transport users are Pedestrians!



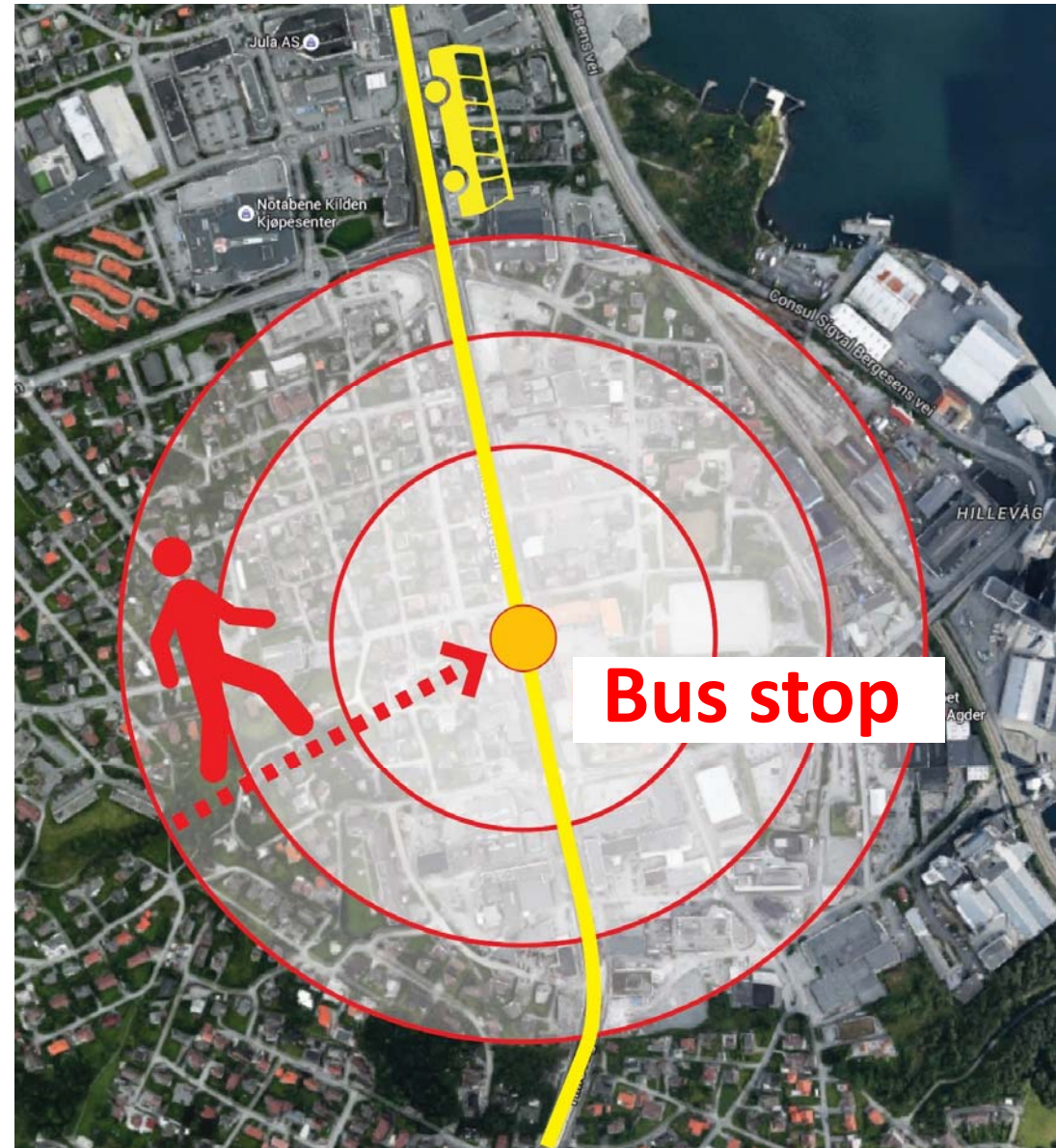
## Walking to public transport

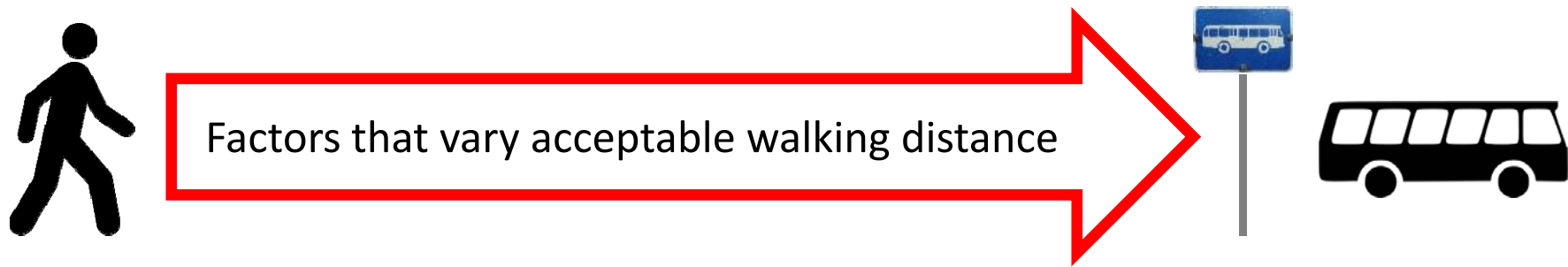




Acceptable walking distance to stops or stations

...important factor for **the amount of potential customers** of public transport infrastructure

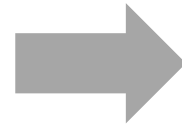




- Health
- Attitudes
- Habits
- Climate
- Car access
- Access to information
- Attractiveness of public transport system



**But also: the walking environment**



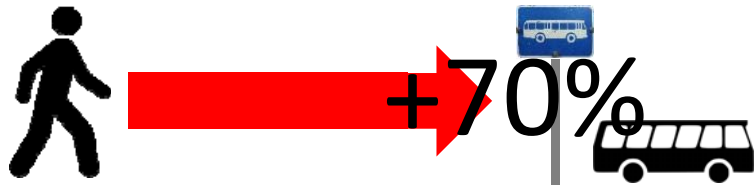
*Car dominated*  
unattractive

Pedestrians are exposed to the surrounding environment



Attractive  
*Pedestrian oriented*

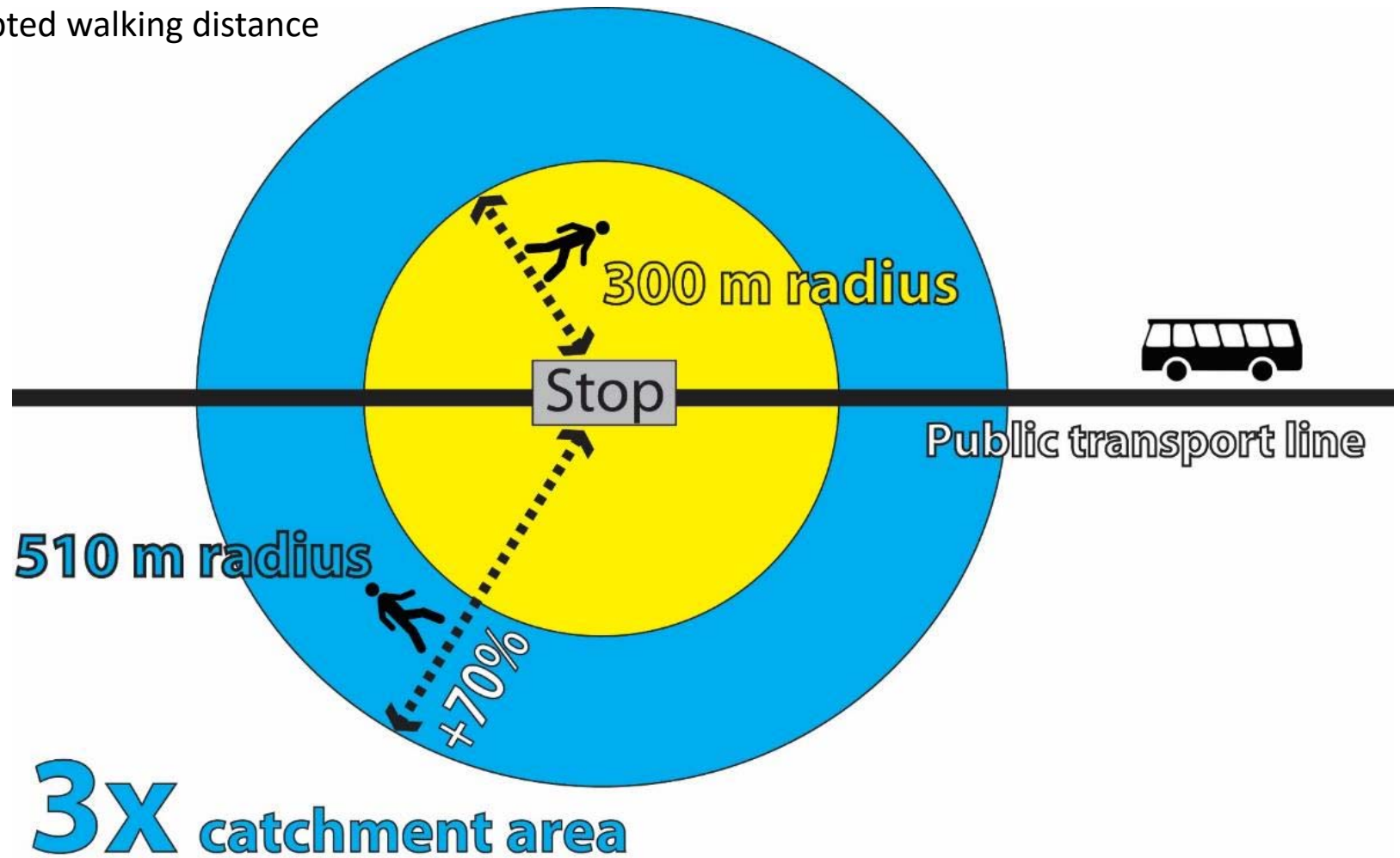




Variation of accepted walking distance



Variation of accepted walking distance



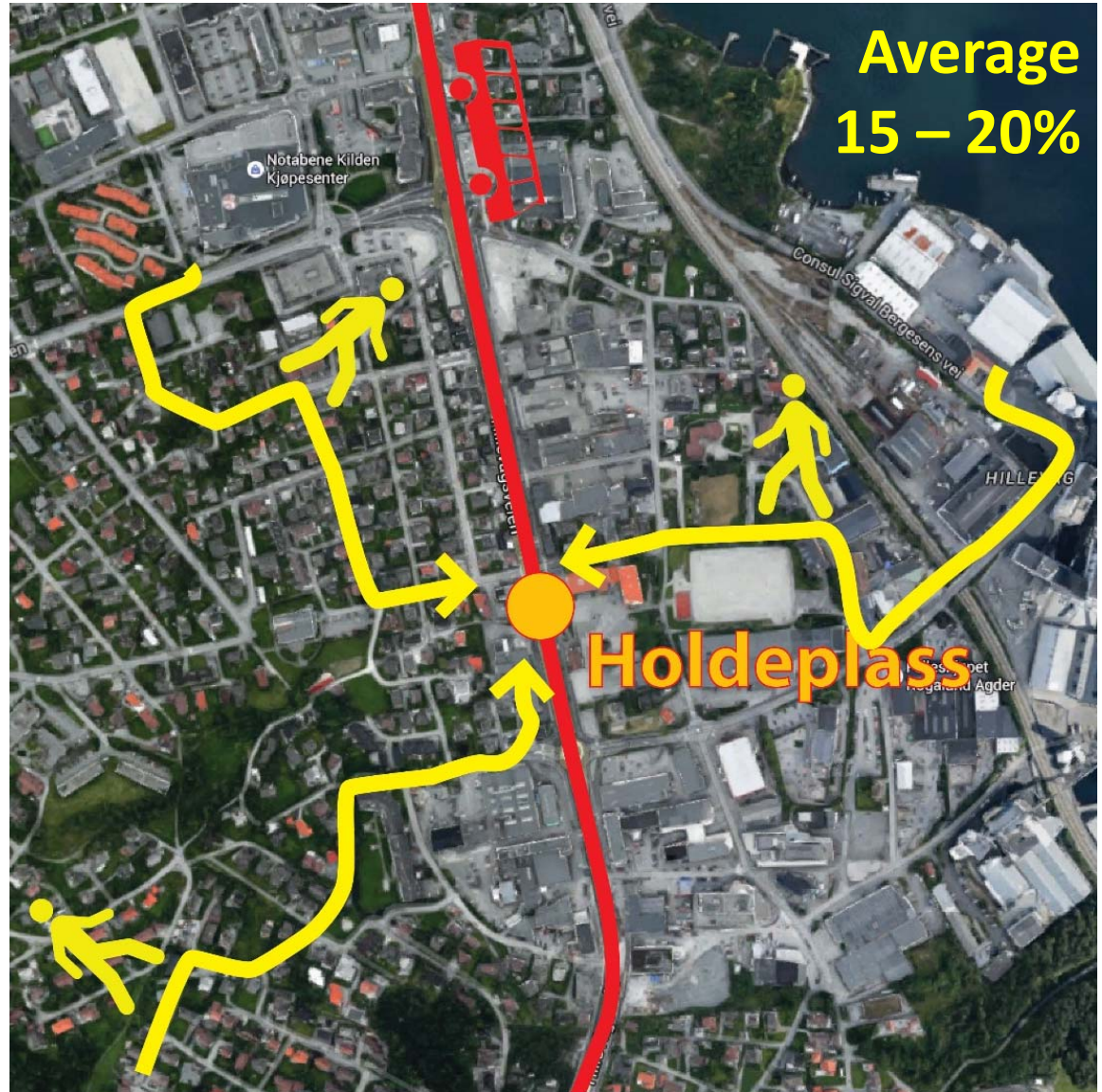


# Urban environment and acceptable walking distances



# 1. Detours

City structure & obstacles in the public space



**2.  
Waiting at  
street  
crossings**



**Waiting 10 – 15%  
when crossing one trafficked street**

### 3. Easy access to additional destinations as shops



15 – 25% longer accepted walking distances

## 4. Sensory experience of the walking environment

Measurable!  
Not a diffuse factor!





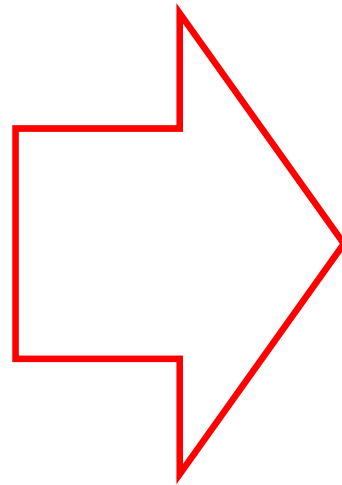
Five  
Senses



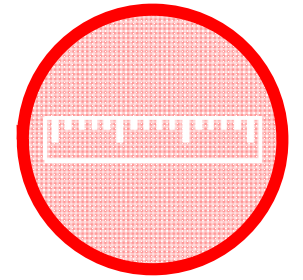
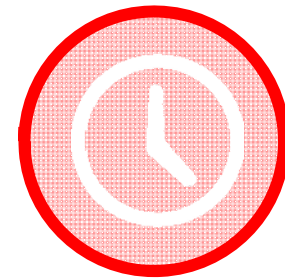
Walking  
stimulates all senses



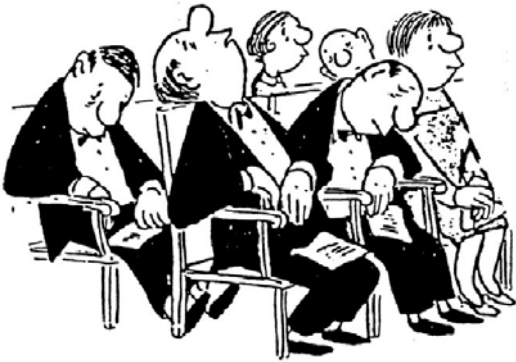
**Sensory experience**



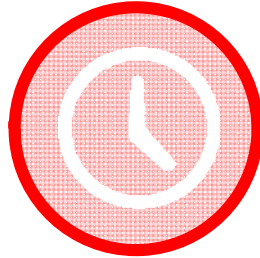
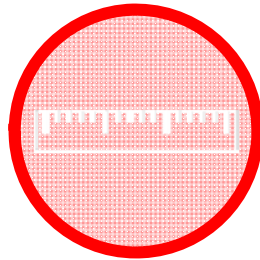
**Experience of  
time and distance**



1. Unpleasant
2. Low stimulation



**Long ...**



1. Pleasant
2. High stimulation



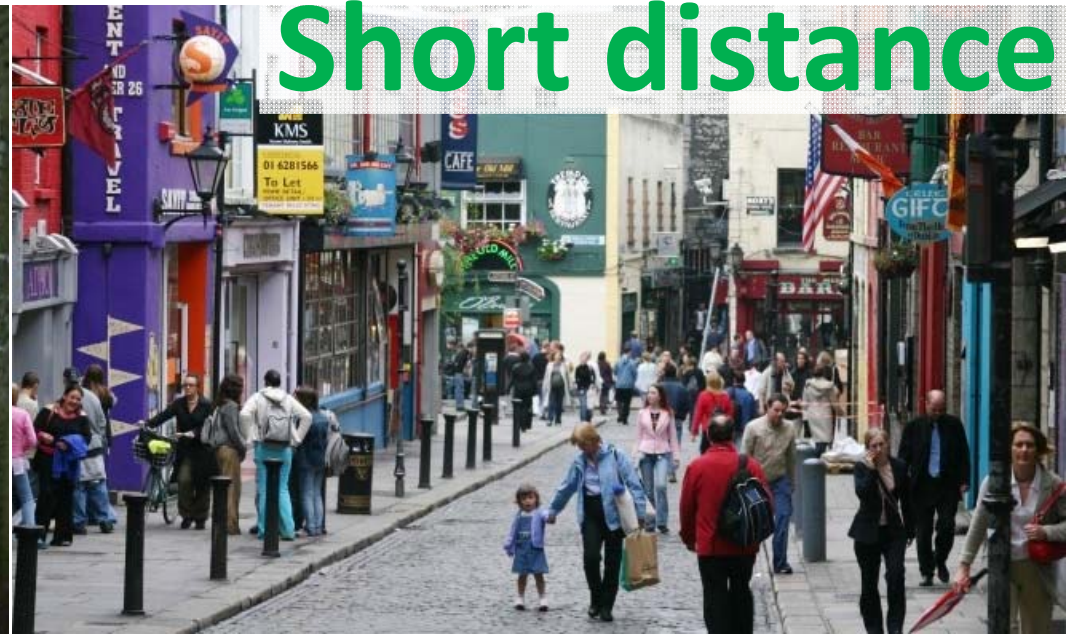
**Short!!**





Pleasant + Stimulating

Short distance



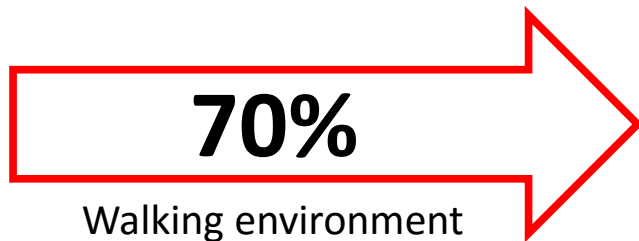
Long distance

Unpleasant + little stimulating



The environmental effect on acceptable walking distances is measureable!





1. Possibilities to access shops and services

up to +25%

2. Sensory experience of walking environments

up to +30%

3. Crossing a trafficked street

-5 to -15%

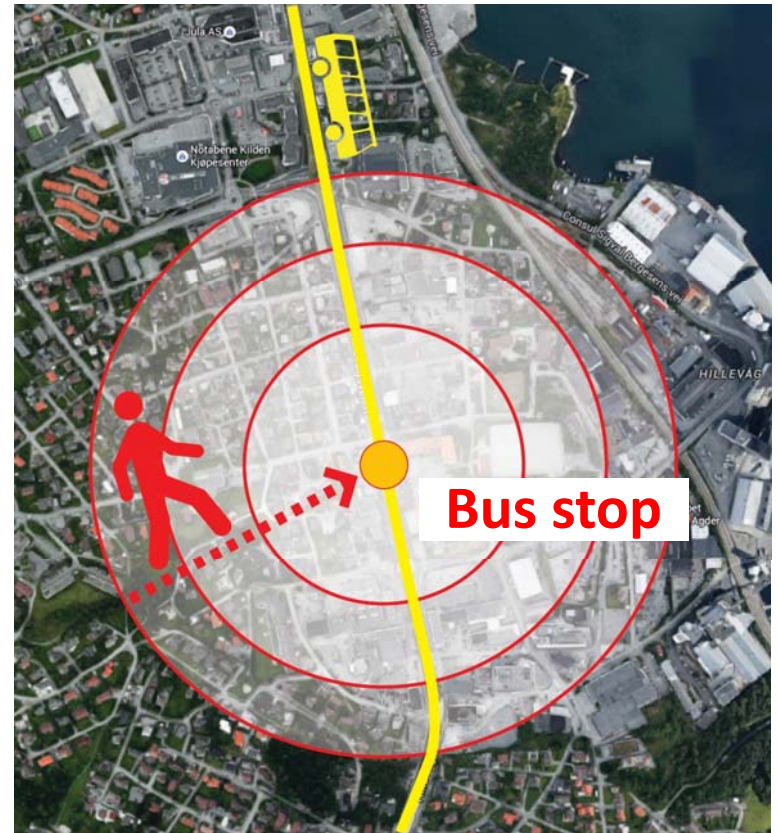
4. Detours

up to -25%

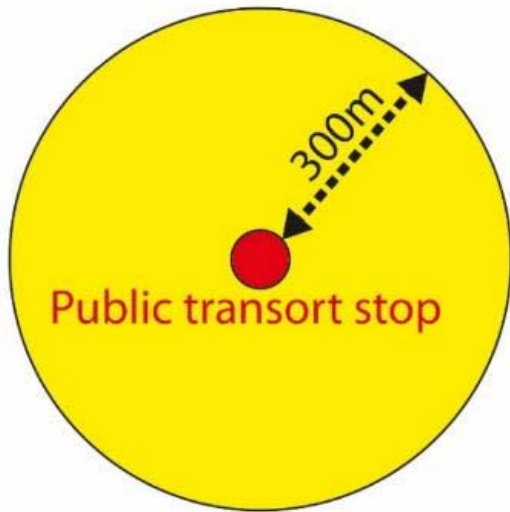
5. Slopes & terrain

-30 to -50%

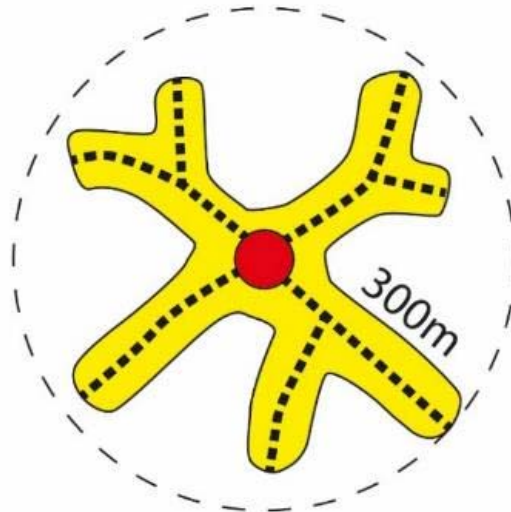
Case study:  
Footpath network around  
public transport stops



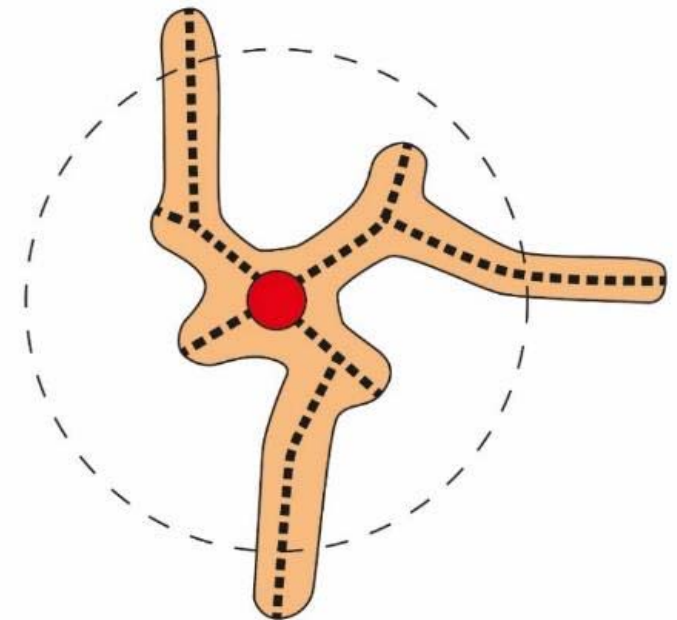
# The catchment area



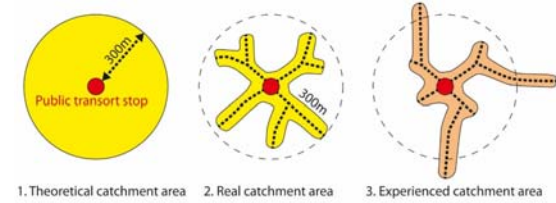
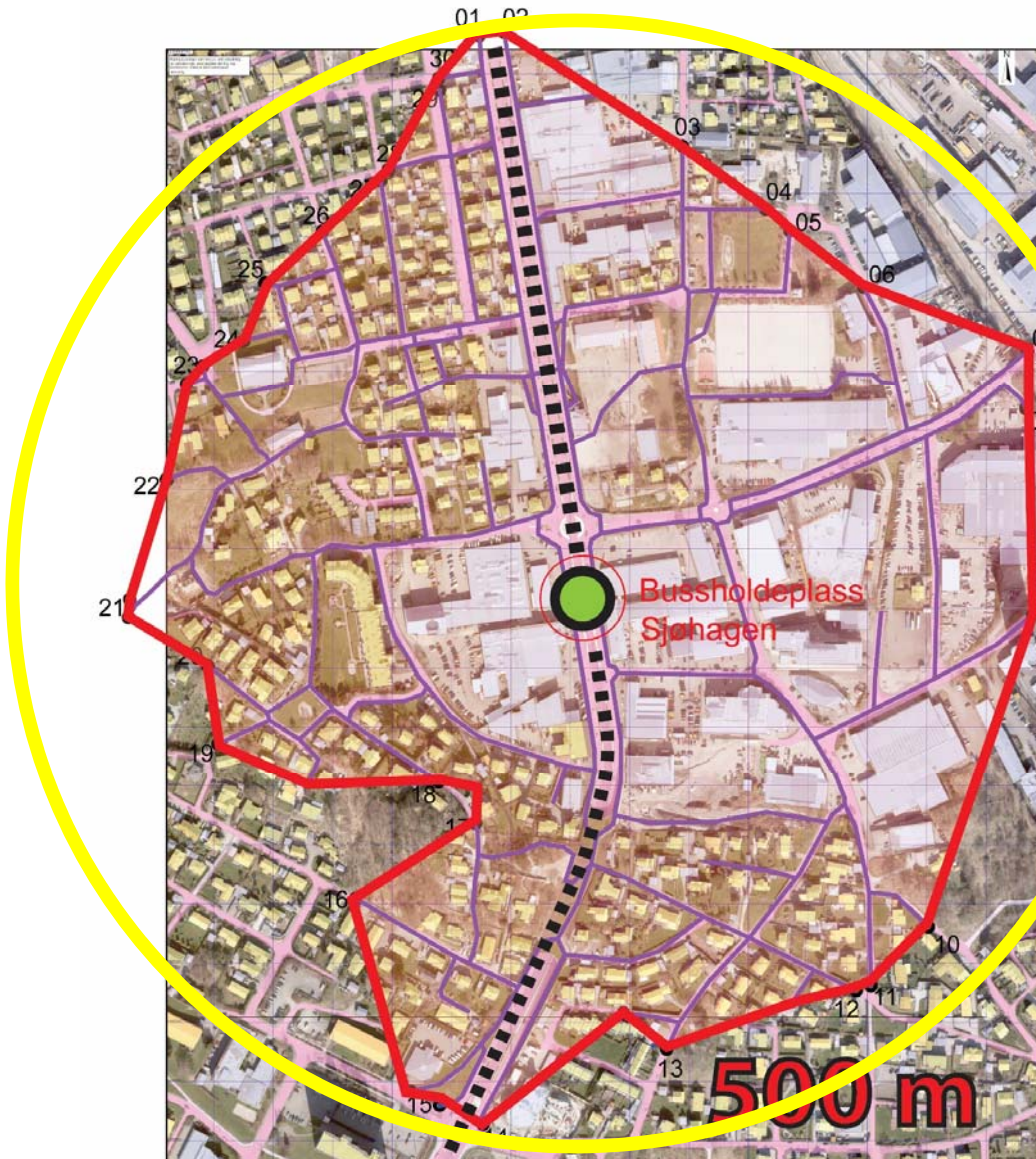
1. Theoretical catchment area



2. Real catchment area



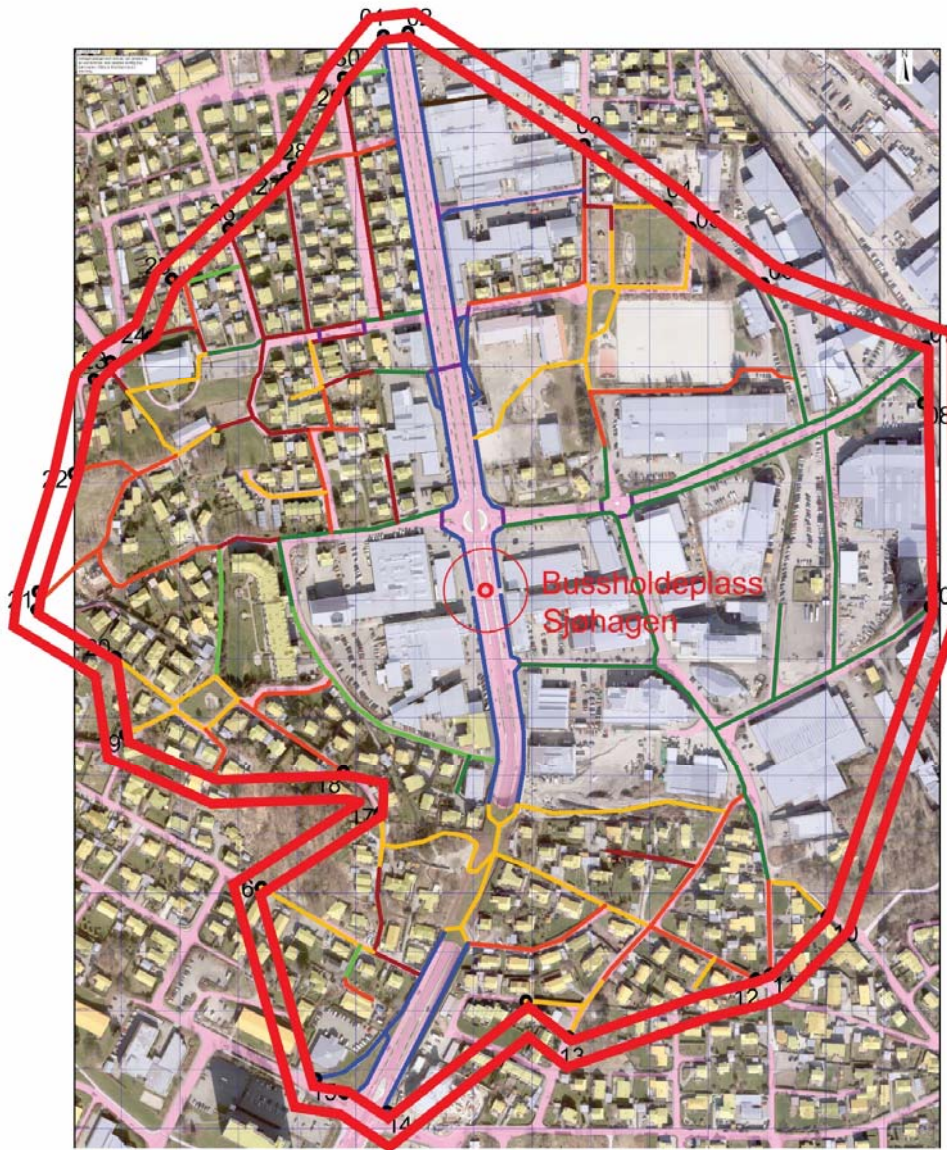
3. Experienced catchment area



## Real catchment area

All footpaths within a (measured) 500 meters distance to the stop

Theoretical catchment area



Environmental characteristics of all footpaths:

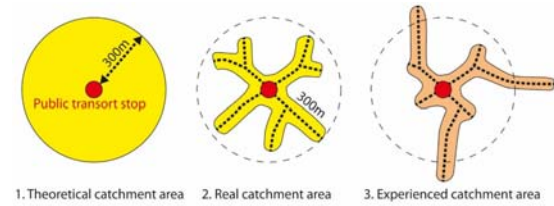
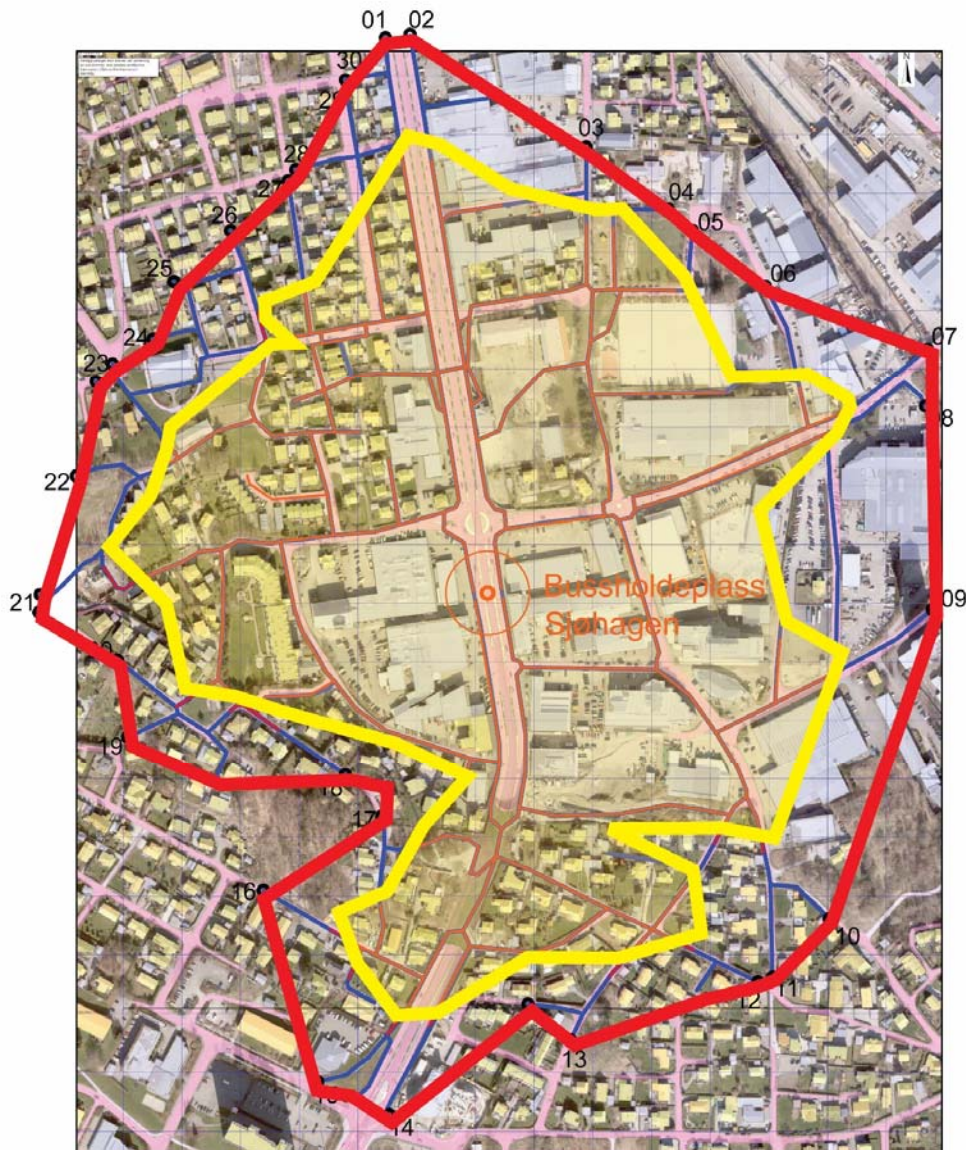
**Unpleasant + boring?**

shorten acceptable w. distance

**Pleasant + stimulating?**

lengthen acceptable w. distance





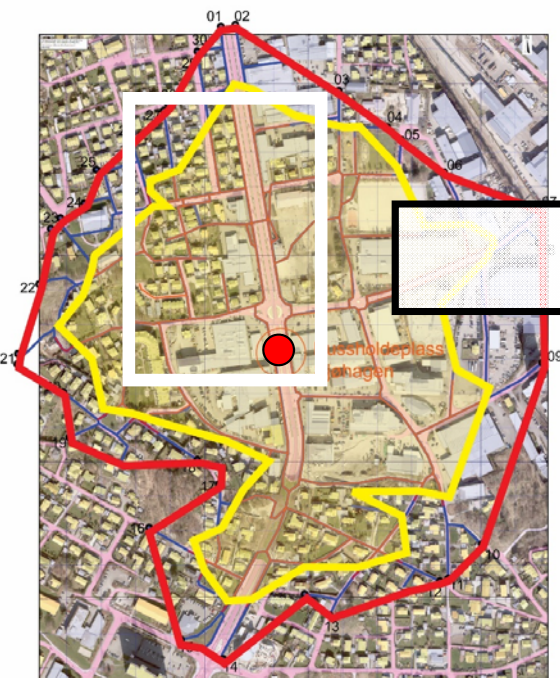
Experienced catchment area

**Measured**

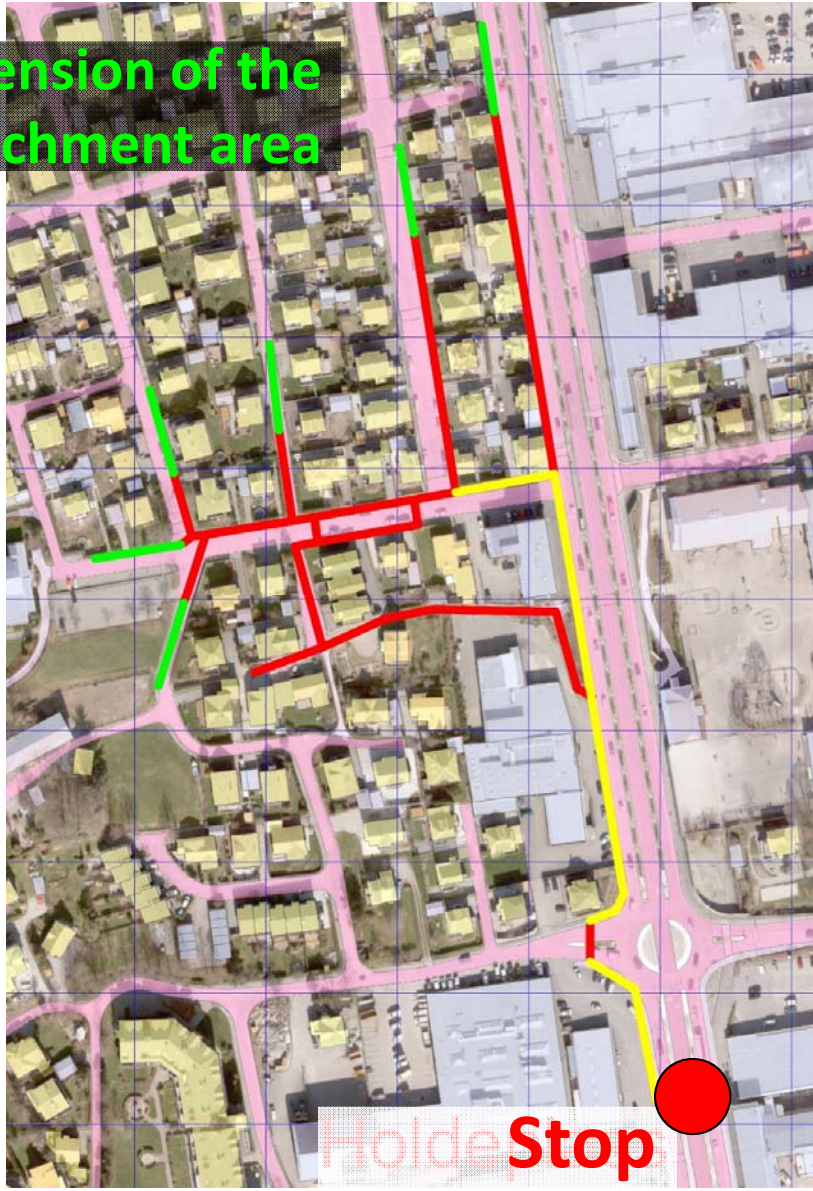
100%

**Experienced**

65%



Extension of the catchment area



Upgrading important footpaths around the stop

Holde, Stop

Remember the pedestrian **dimension!!**



*300m walking distance*



Detour 75 m

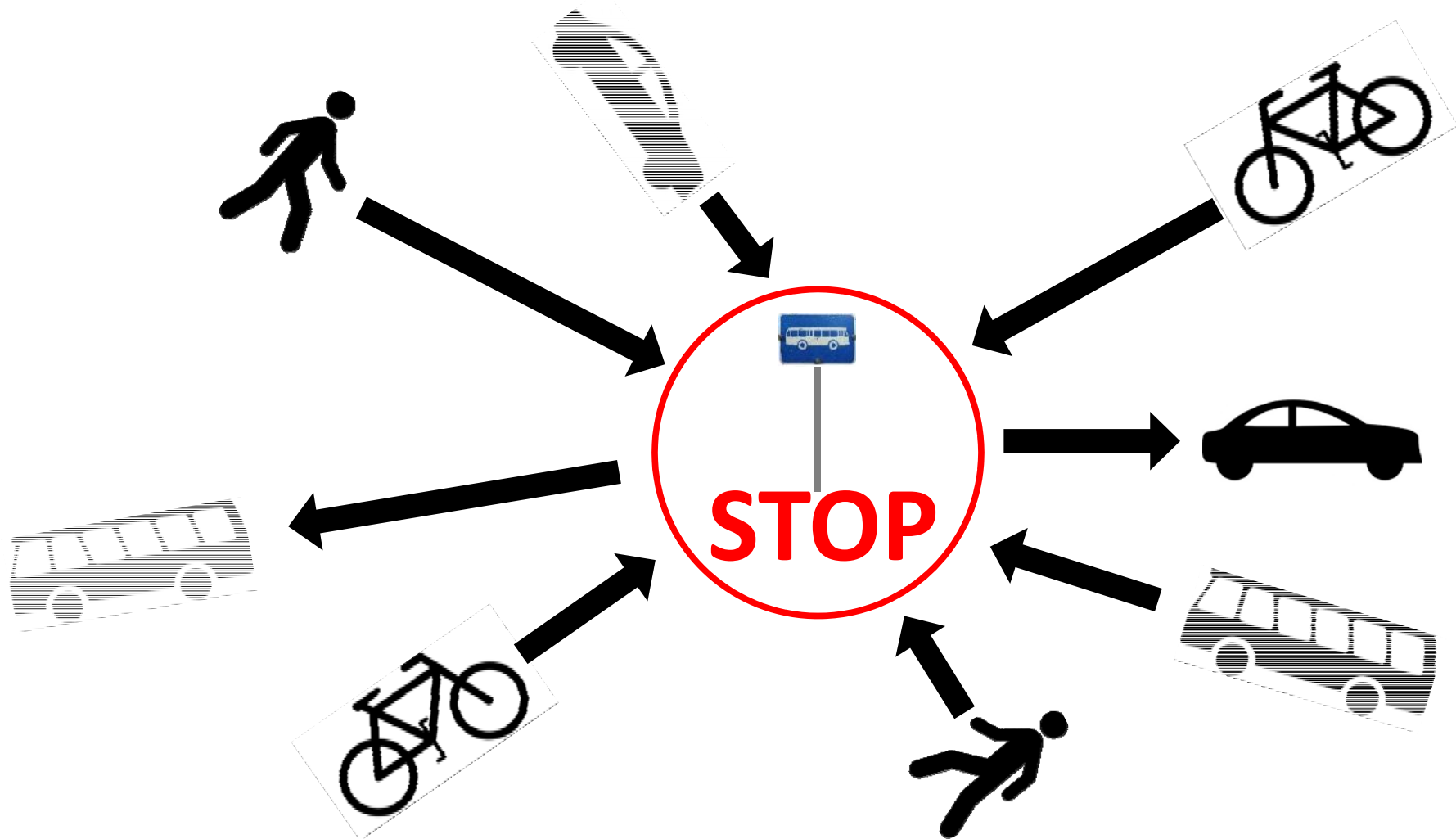
Waiting 60 seconds at street crossing

**+25%**

**+30%**

Pedestrians + cars ... safety?

# Public transport stops – focal points for mobility



Who is dangerous?



Who bears the consequences?



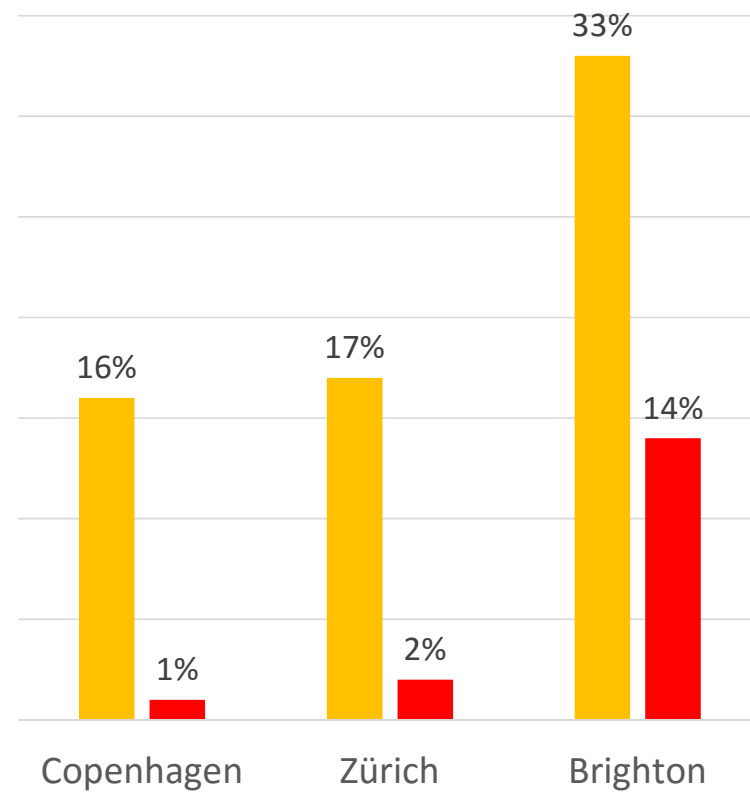
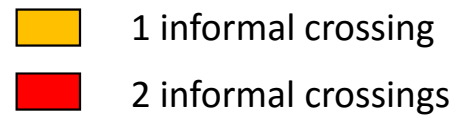
We made walking so safe...



...that no one bears to walk!

# Preventing informal street crossings?

Railings to prevent informal street crossings in the UK



Railings result in increasingly dangerous street crossings





2013/10/15  
15:55:10

Design that suits pedestrians ...  
... is **safe** design for pedestrians



- Slow speed → no detours
- Very flexible → good options instead of ineffective restrictions
- Muscle driven → no ramps, no stairs, no detours

# Future of public transport

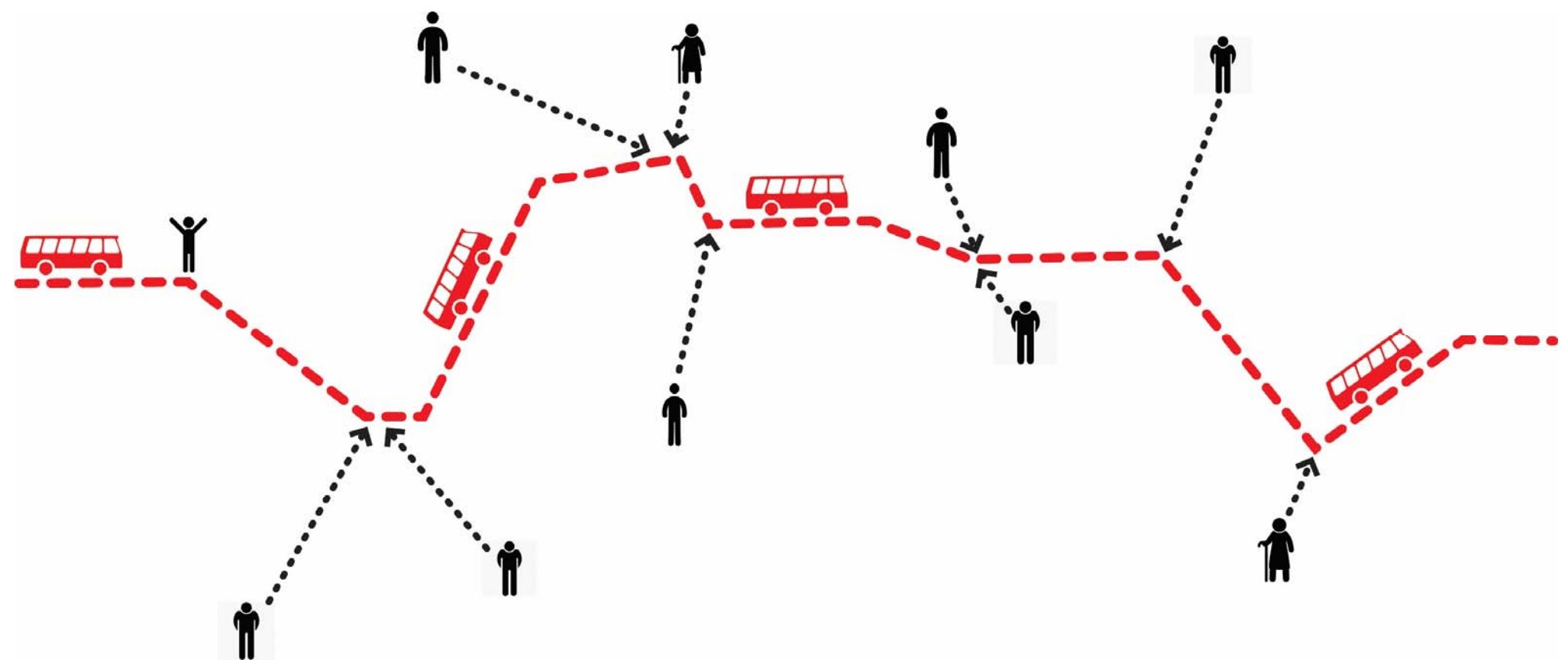
# Flexible: autonomous busses

... pick up travellers wherever they are!??

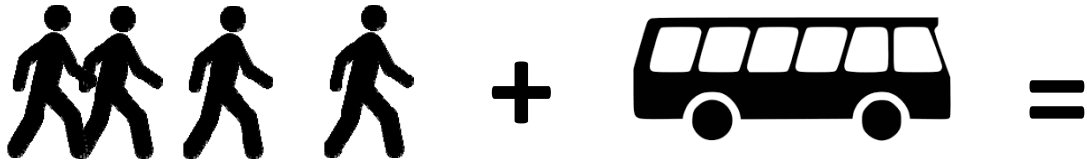




Flexible and effective – coordinating **walking** and **driving**



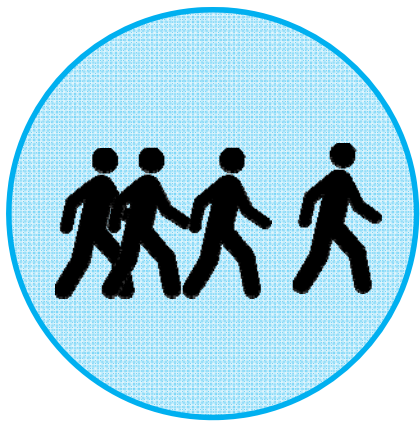
# Symbiotic coexistence



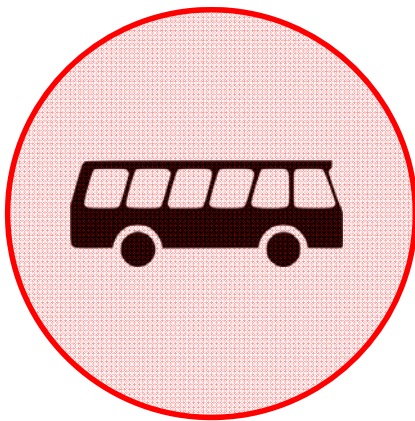
Walking:  
Short distances  
Very flexible

Public transport:  
Longer distances  
less flexible

Combined strategies for  
**walking** and **public transport**



+



=

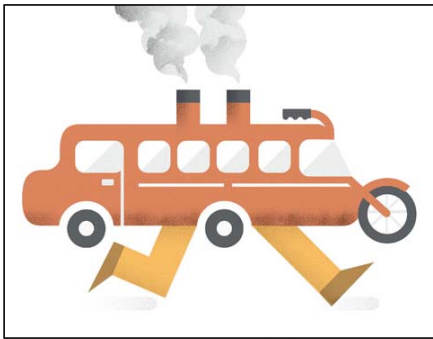
SYNERGY  
1+1=3



# Multiple desirable effects



Attractive cities with less traffic emissions



Effective mobility



Healthy mobility (physical activity)



Social inclusive mobility



Economic mobility



Effective reduction of car traffic



Safer cities



Environmental friendly mobility



**Good cities for walking**

**Market potential** for public transport

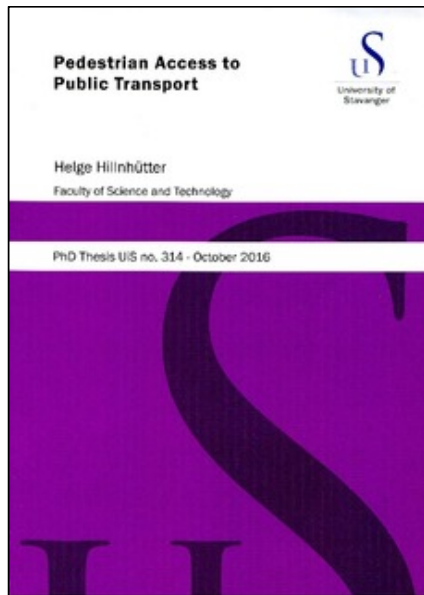
**Better return** on public transport investments

**Good cities for public transport**

**Most effective** to reduce negative effects of car driving

**Multiple** positive effects

**Good cities for living**



Helge Hillnhütter  
“Pedestrian access to Public Transport”

<https://brage.bibsys.no/xmlui/handle/11250/2422928>