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Pasos hacia la ciudad del peatón
Walk21
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Steps towards liveable cities

Intermodalidad/Peatones/Transporte Público.

Intermodality/Pedestrians/Public Transport.

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Resumen / Abstract

Todos los desplazamientos basados en el transporte público generan dos viajes a pie. En la ciudad de Zurich, aproximadamente la mitad de los viajes a pie son desplazamientos desde/a paradas de transporte público. En el área de mayor tamaño del centro de la ciudad, dos de cada tres viajes a pie forman parte de un desplazamiento intermodal basado en caminar y montar.

Por lo tanto, todas las estrategias destinadas a incrementar la movilidad a pie como medio de transporte tienen que tener en cuenta la armonización óptima de los siguientes elementos:

- Caminar a/desde la parada de transporte público (distancia y aspectos de la calidad)
- La parada o el área de la estación y la ruta para llegar al autobús/tranvía/tren
- Nivel y calidad del transporte público (frecuencia y otros aspectos de la calidad)

Parece obvio que una buena armonización sobre el nivel de gran calidad de estos tres elementos puede generar una sinergia positiva y llevar a un incremento de las tasas de movilidad a pie y montado. Pero (dándole la vuelta) la mala calidad, incluso de uno sólo de los tres elementos, puede eliminar el efecto de la sinergia positiva.

Willi Hüsler

Ponencia / Paper

Walking to/from the stop of public transport

The most important parameters to influence the acceptance of walk and ride are:

- accessibility
- safety
- comfort
- attractiveness

concerning the walking area between the stops of public transport and the destination of the journey/trip.

Accessibility

The most important dimension to measure accessibility is the walking time or walking distance.

In the case of typical daily trips with **busses and tramways in town** different surveys came to more or less the same conclusion (for example Hüsler/Brög 1989): on a trip length over 300 m (bee line) or 5 min. walking time, the share of walk and ride looses notably (with increasing distance) and under this limit the influence of the distance is not very significant.

With higher speed and longer distance of the ride on public transport (**railway, commuter train**) pedestrians are accepting longer walking trips. In the case of railway stations, an often used quality standard is a catchment area of 600 m (bee line) or 10 min. to walk. Even if some people accept a walking distance up to 1,5 km, mobility surveys confirm that bicycles, busses or private cars are increasingly used to join the station, if the walking time is over 10 min. (Berg, Maurer, Odermatt 1983).

see figure 1

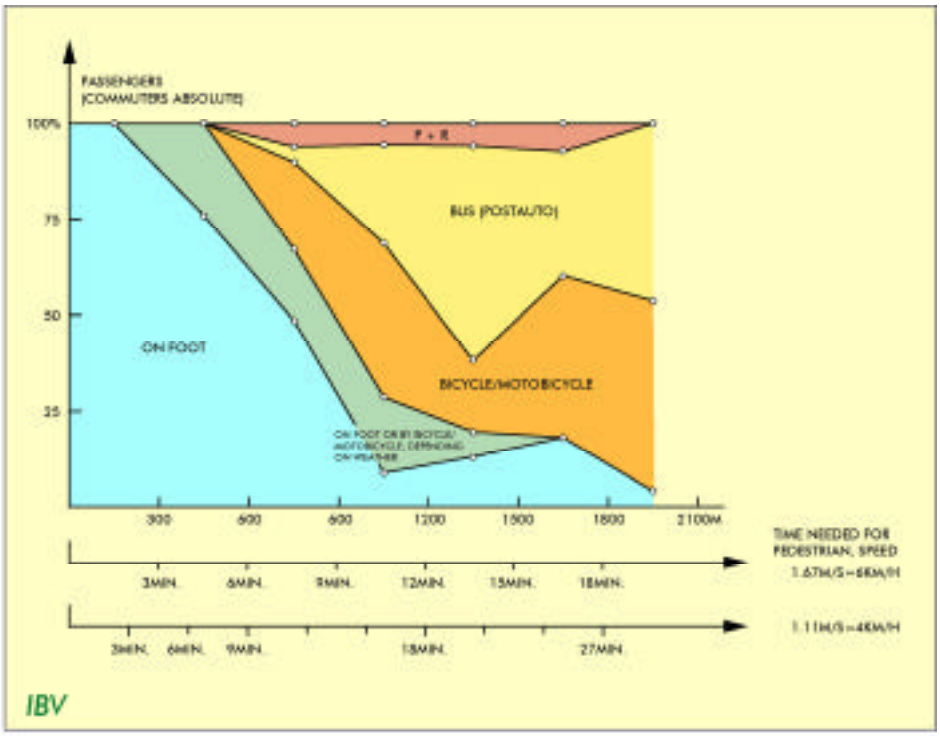

FIGURE 1 TIME OF TRIPS TO THE STATION (EMBRACH)

Accessibility has to deal as well with

- **detour factor** (should not be over 1,33 in the case of shorter trips and 1,2 in the case of longer trips)
- **difference in altitude** (the difference in altitude has to be added to the horizontal distance, with gradients higher than 10% 2 to 3.5 times – trip length is growing, Berg 1980)

The influence of **waiting time on the trip** (e.g. on traffic lights at crossings) is still not known in a scientific way. A practical approach is for traffic lights to double the longest possible read phase and add it to the walking time.

Safety

The safety issue has to take in consideration first of all the organisation of crossings over traffic lanes and the speed level of car traffic.

Comfort and attractiveness

The PROMPT research project (new means to promote pedestrian traffic in cities – 5th framework EC) is actually doing empiric research about comfort and attractiveness in about 20 case studies in 6 European countries.

Concerning **comfort** the most sensitive factors (high importance and high negative load) in the Swiss case areas seem to be:

- air pollution
- traffic conditions
- equipment of public space (benches)
- noise level

and in specific situations:

- security against every day violence

see figure 2

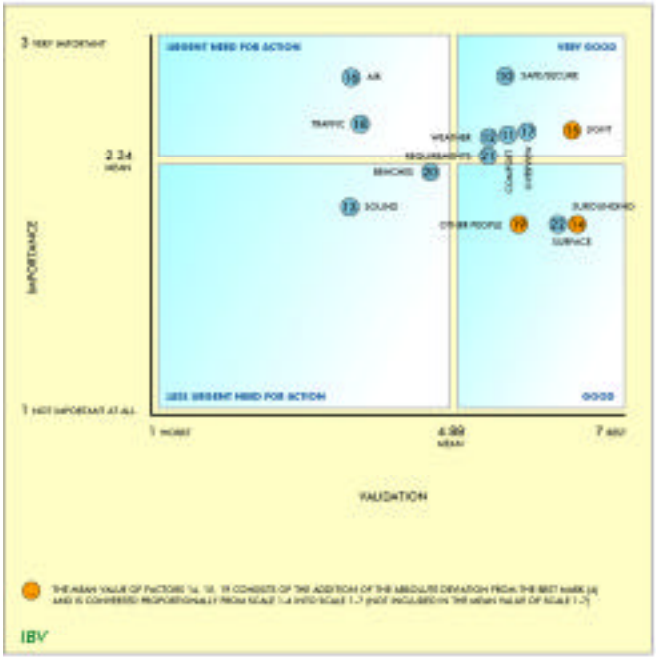

FIGURE 2 COMFORTS FACTORS, NATIONAL LEVEL, MEAN OF 4 CASE AREAS SWITZERLAND

Concerning **attractiveness of the public space** - the aspects of form, structure and use - the activities and a high variety of facilities become, in most of the 4 case areas in Switzerland, the highest load in the area:

- Form 25%
- Structure 15%
- Use 60%

Stop or station area

The following aspects have to be taken in consideration:

- access to the platform
- waiting time
- boarding

Access to the platform concerns often crossing some traffic lanes and move to the platform level. Almost every body doing research in this field is pointing out the high importance of a direct access (without detours) to the platforms. Railway stations as well as bus and tram stops should be open for the access from all directions.

see figure 3

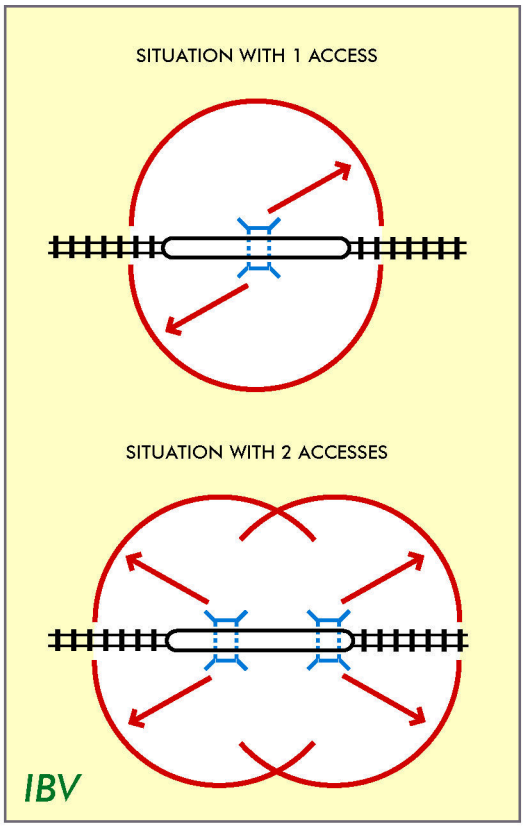

FIGURE 3 DIAGRAM OF STATION WITH 1 ACCESS AND WITH 2 ACCESSES

The stop or station should offer good conditions **to wait**. The following elements have to be taken in consideration:

- The information about network and timetable of public transport should create an atmosphere of certainty
- Good comfort means enough space, shelter against rain, wind (and cold on stations), seating provisions not too much exposed to car traffic, noise and other emissions, as well as good lighting and sunshine/shadow conditions.
- High attractiveness can be generated by good integration of activities like snack bars or newspaper shops, communication friendly railings, and a good structured mix of public space and other local activities, not based on separation of functions but on integration.

Actually the sensibility of traffic engineers and public transport operators is very much oriented towards low floor trams and buses and high kerbstone solutions to offer (first of all for handicapped persons) best conditions for **boarding**. Less sensibility is given to the impact of high raised platforms (detours, steps, difficult crossings of traffic lanes nearby stops and stations).

Two solutions are quite common:

- Kerbstone level of about 16 cm (in combination with bus/tram equipped with ramp for wheelchairs)
- Kerbstone level of about 25-30 cm and direct access for all users.

The problem of the high-raised kerbstone (25-30 cm) can be:

- Difficult integration in the local context (design)
- Relatively long detours for crossing and boarding the platforms (long ramps)
- Difficulties to board the bus (in cases of disturbed approach of the bus to the kerbstone) because of the large gap between bus and kerbstone.

Every situation has to be analysed and the design of the platform level and access situation has to respect the local conditions.

see figure 4

Level and quality of supply of public transport

The level of supply has to take in consideration traffic generation and local conditions. It is not possible to give general rules. But the following principles should be respected:

- In densely built up urban areas, the frequency of busses or trams should guarantee a continuous service during daytime (10 min. frequency or shorter)
- In cases, where the frequency can not be continuous, the timetable has to be based on regular frequency with fixed minutes departures (e.g. 15', 30', 45', 00' or 00', 30') and interchange by "rendez-vous". This way the departure minutes are always the same and passengers do not require timetables.
- Commuter trains and railways should be organised as well with regular departure times and the possibility to interchange by "rendez-vous".
- On longer trips on trains, busses and trams, sitting should be possible. Standing should be limited on short trips (not more than 10 min.) and with not more than 2-3 passengers per m^2.
- Regularity of service, on board information for passengers and ticketing systems with easy access are other elements with high load in quality (assessment and investigations).

CURRICULUM VITAE

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Las actividades más importantes durante los últimos años incluyen:

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