PROCESS OF PERCEPTION – A GUIDING LINE TO SIMULATE MOVING IN A REAL STREET
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Abstract
By a special research design we try to find out in which way subjective perception influences the processes of orientation and moving. Our research design compares an objectified process of orientation and moving of several persons in two real streets – which were unknown to them – with the subjectively differentiated strategies and guiding results of personal perception. By comparing the lines of moving, the strategies of perception to the more subjective results we gained hints on the criteria and the influences of the modes of perception on one side and the influences of the material design of the real street on the other side, on the individual processes of orientation and moving. As last we tried to give some general guidance for future research.

A. Some remarks
The proceedings of our first EAEA conference in 1993 are entitled "Endoscopy as a tool in architecture". It is still the unifying ribbon of our conferences and works to show each other that the tool is still suitable - whatever the purpose in planning is. The scope is wide and interesting. It starts by investigating the perception up to the presentation of architecture, solutions in urban design and even the testing of the development of a landscape. The tool endoscopy is largely introduced in planning techniques.

But it could be used more in the ordinary planning processes, especially in communicating with the public or in decision-making.

On the other side the simulation of architectural images and even presentation of scenes aiming at urban future (so called scenarios) take more and more place in processes of planning on the whole. It is due to the demands on higher planning qualities, especially on the participation of local politics, the local public and inhabitants and in general it is due to the change of the character of planning not as a result but as a step-by-step process.
In the EAEA proceedings the processes of simulation and production of sceneries were always presented. On one hand it shows that the EAEA conferences are reflecting the changes in the real planning processes, on the other hand we have to test and to improve our tool “endoscopy” continuously so that it could be used much more in ordinary planning.

Simulate reality or real simulation?
Before demonstrating our small contribution, I will try to argue for reaching higher qualities of simulation in using the tool endoscopy:

The normal way of using endoscopy is to simulate the movement of a person - more exactly the movement of the person’s view in passing the model. This way the movement of the body on the whole and all the senses are represented on the screen we look at. We look at a supposed and average manner of motion by a supposed “normal” person.

Motion is the normal process of experiencing our surroundings in space and time with all our senses. Without motion senses would produce no sense.

The processes of moving or staying still on a street or square can be regarded as a direct measure of the qualities of urban spaces. It can even demonstrate whether the planned effects of architecture could be realised everyday and by all passers and users.

And:
When simulating the movement in reality by endoscopy we have to refer to the kind of view we are practicing. That means: the view of an architect, an urban planner, the users, an investor, a passing foreigner will be different - case by case - not only depending on the scale of the model.

The episode of movement as a research unit - as Seppo Aura in the first session of the EAEA proposed - has to be completed referring to the three-level model of space perception (orientation, identification, representation) presented by Anne Stenros. And it has to be completed to the sorts of people the simulation on the whole scenery is to be addressed.

Conclusions:
1. To further improve the simulation processes, we propose to develop our know-how to a basic knowledge of real moving processes. (Halts and the remaining in place in connection with the shape of the space and the bordering buildings always have to be included!)
2. This basic knowledge should contain besides a good physical model in scale, materials, lighting, etc., also the knowledge of moving and using processes of different groups or types of persons in reality.

3. Before simulating moving processes - especially when it is part of a scenery, simulating the processes in urban developments, we have to decide, which of the following aims we want to realize:
   - to analyse the perception in moving in space and time
   - to test the using processes of different types of users
   - to produce an image of the future environmental design.

We presume that each different aim demands another methodical approach and another manner for using the tool - for instance the special lines of guiding the tool through the model.

B. Our report
To improve our basic knowledge of moving processes we decided to go back another time to the starting point of simulation back to the different courses of real moving.
The report has been made by Manuela Borg and the team of our Media laboratory - supported by a number of students in two projects.

The contents:
We try to find out the subjective forms of perception by comparing them to the real courses of perception, orientation and to the resulting movement of the individual person. Our long-term aim is to find out how the processes of moving and standing are influenced by the conditions of the material framework of real environments.

The design of the experiments:
The experiment is designed in two parts:
Part 1:
A small camera is fixed on the forehead like a polyphems eye. It registers the head movements and what the person has seen while moving. A second camera is documenting the moving separately.
Part 2:
Immediately after this passing episode a plan of the passage had to be drawn by the testing person. This mental map was compared with the real map.
The method:
In this way we tried to compare the processes of perception and moving in two totally different urban settings. In a first attempt the environment should be unknown to the tested persons.
We had chosen two distinguished neighbourhoods:
On the one hand the area of the Dortmund Centre of Technology. It is developing since about fifteen years and has not been finished yet.
On the other hand we choose parts of a small village near the University that has been totally converted into a housing quarter. But it is still based on the ground plan of the houses and the streets of the farmers and their former working processes.

Our first results:
The processes of moving were more or less guided by the edges and the surfaces of the buildings.
In the case of the Dortmund Centre of Technology the guiding lines of space were grasped quickly. The horizontal line of the view lies low because the pavement does not require attention. As a result the moving line follows the perspective view. The mental map shortened the real distances of the street.
In case of the village passage the guiding lines of moving in space are different. Buildings and the walls of the former yards require attention like the variations of the pavement, therefore the horizontal line lay higher. The guiding line of moving follows the middle of the road. As a result, the moving was much slower and the speed was changing. It was more often corrected and controlled by changing the direction of the view. The mental map shows more details of the buildings and it shows nearly the real shape of the road.

Compared with our tests in the media laboratory we showed in the last session, the processes of perception were comparable. In real moving the modes of orientating concerning men and women were not as far distinguished as in the simulated processes. But women always paid more attention to the changing and the details of the built environment.

In another project we asked children to show us their neighbourhood. Their moving was totally different - not only in the height of their viewing level. Their motion in space, their communication and rhythms, their attention points - their modes of looking at the environment did not follow the perspective modes.
In the two projects we tried to improve the planned urban design of real environments. In the first example we designed the pedestrian system to link up the old city to its new neighbourhood. In the second project we tried to re-design an urban area in referring to and planning with children. Both projects had in common taking the body motion and the moving process as a guiding line to design urban spaces as useful public domains.

To conclude
I hope we could demonstrate that our methodical approach "back to the roots" of real moving processes could give some ideas on how to improve our basic knowledge in simulating by endoscopy and models. Our aim is to broaden our knowledge of real moving in order to improve the operational modes of simulating them. In short: our aim is to qualify the planning processes in general.