

Voice of the City - An international educational action with guided sound exploration

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Introduction

Initialized by the international workgroup HIDS (German acronym for "Problems of listening in society, city and school") the educational action intends to increase the competence in listening mainly of young people. Essential part is a guided sound exploration that invites the listeners to discover the acoustic characteristics of a city. In different European cities (Vienna, Stuttgart, Zürich, Berlin) soundwalks will be arranged including similar urban spaces in each city, public places like park areas, traffic zones, power grounds and sacral areas. Fields of interest are whether the listeners notice the differences of the urban spaces and how they describe these differences. Furthermore whether the soundscapes of these spaces are described in a similar way in all participating cities. In the paper the design of the project is outlined and first results from the conducted soundwalks in Vienna will be presented.

Motivation and basic ideas

The project was a consequence of discussions in the interdisciplinary workgroup HIDS. HIDS was founded 2009 in Stuttgart as a reaction of more and more problems concerning listening and auditory defects within the young generation. In HIDS the following disciplines and institutions work together:

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|-------------------------------|--|
| - Sociology | Cultur prospectiv - Switzerland; |
| - Acoustics | ITA Berlin, HFT Stuttgart – Germany; |
| - Medicine | University Freiburg – Germany; |
| - Health Care | IB Hochschule Berlin – Germany; |
| - Musikwirkungs-
forschung | University of Music and Performing
Arts Vienna – Austria; |
| - Politics | Acoustic City (Hörstadt) Linz – Austria; |
| - Education | |
| - Science | PH Ludwigsburg – Germany; |
| - Architecture | University Stuttgart – Germany; |

At the beginning the discussions in HIDS focused on the situation in schools, e.g. classroom acoustics and educational issues. But the topics soon expanded towards the importance of hearing itself in the society and the interaction between hearing and communication. The project "Voice of the city" arose from these discussions. Its main intention is to increase the awareness of listening in society especially among young people.

Concept of urban spaces

Main part of the project is a guided soundwalk with a questionnaire and an exhibition with different information



Figure 1: Poster of the project "Voice of the City" Vienna 2012.

e.g. about the hearing process, auditory defects or noise pollution. Since the project is planned in different cities a special concept for the design of the soundwalks was discussed, to be able to compare the "Voices" of the different cities. The basic ideas for this "Concept of urban spaces" are shown in figure 2, some ideas can be found in [1].

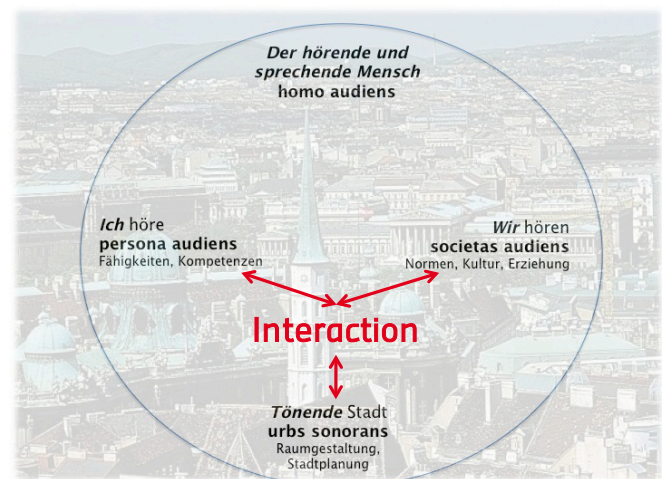


Figure 2: Interaction between "Voice of the City", hearing individual and the culture of hearing in society.

Walking through urban spaces is an interaction between people and spaces but also between individuals hearing and the "the culture of hearing" in society. This influences the expected sounds and the quality aspects perceived at the places. Therefore a questionnaire was developed, which every participant of the soundwalks was asked to complete. The answers might give some hints about the acoustic characteristics of each city as well as about differences in (the culture of) hearing of the participants.

Different urban spaces

The design of the soundwalks in the participating cities includes the following different urban spaces with typical sounds and their characteristics associated with these spaces:

- **Park area;**
sounds: animals, nature, silence, water
character: slow, designed, formed
- **Flat ground;**
sounds: traffic, work, people
character: fast, flat, standardized
- **Grounds of power;**
sounds: order, protest, commands, sirens
character: monolithic, closed
- **Sacred grounds;**
sounds: bells, silence, devotion
character: mystic, elevated

Realization in Vienna

First realization of the project was in September 2012 in Vienna at the University of Music and Performing Arts. Main parts were the guided soundwalks with a questionnaire through the city of Vienna, a small exhibition and a first study about effects of the different sounds on the heart rate variability (HRV) and other vital parameters of humans (smardwatch system).

Soundwalk



Figure 3: Design of the soundwalk in Vienna.

The design of the soundwalk is shown in figure 3. Start was at the University of Music and Performing Arts (marked with "A"). The first urban space was the railway station "Wien Mitte" (flat ground). Crossing the city park (park area), the soundwalk went to "Schwarzenbergplatz", a big square with traffic (cars and trams; flat ground) and a monument with fountain nearby (ground of power) at the end of the square. Last space was the Russian church (sacred ground). Figure 4 shows the A-weighted SPL over a small time, recorded at the different spaces. The SPL show a clear ranking, except for the flat grounds with traffic. The church and the park were the quietest places. The sound of the fountain is stationary and in the same range as the flat grounds when the traffic noise decreased.

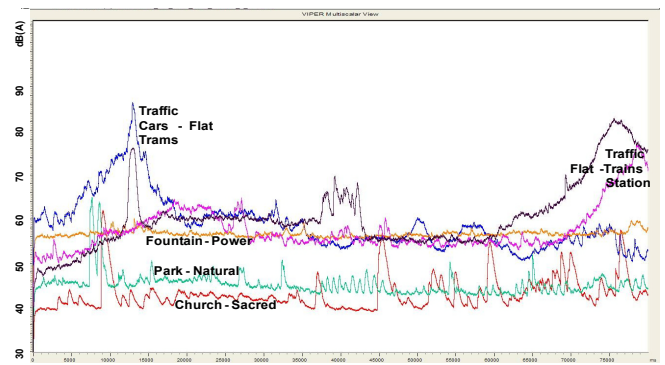


Figure 4: A-weighted SPL over time at the different urban spaces.

Questionnaire

In two weeks in total 564 persons participated at the soundwalks in Vienna. Among them were only 18 adults, but 546 pupils. Questions to answer addressed the loudness at the spaces and the quality of sound. Ratings were given at a scale of five values. The results for the loudness are shown in figure 5 for the quality of sound in figure 6.

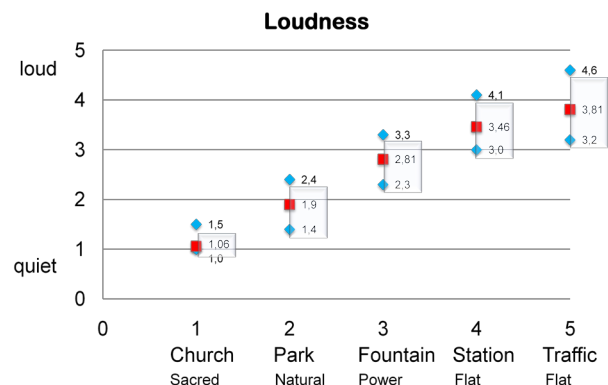


Figure 5: Result of the questionnaires for the perceived loudness at each space.

The results for the loudness show a very high correlation to the A-weighted sound pressure levels in figure 4. In the results for the quality of sound (figure 6) the ranking of the park area and the sacred ground (church) changed. The first ranked quiet place (church) was not rated also as the most pleasant. In addition park, sacred ground and ground of power (fountain) were within the same range between the values 1 and 2. So the differences were not the same as for the loudness.

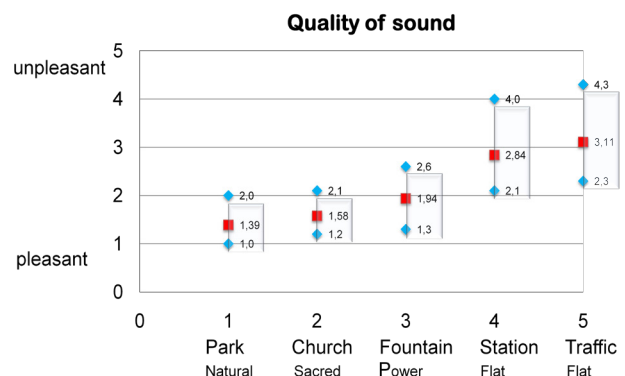


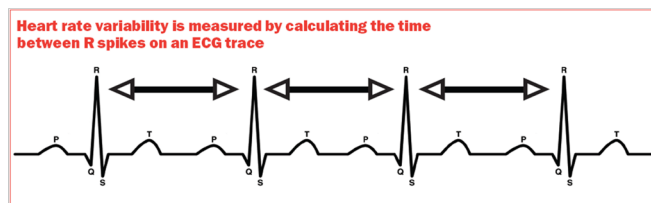
Figure 6: Result of the questionnaires for the quality of sound at each space.

This might be due to the fact, that the spaces were not only the most quiet ones, but in the park and near the fountain natural sounds (water) were dominating. Natural sounds, especially fountains [2], are often rated as more pleasant than expected in regard to their level of loudness.

Exhibition and HRV

At the end of the soundwalk, the participants had the opportunity to visit a small exhibition in a hall of the university. They could discuss the experiences during the soundwalk and hear again the sounds of the different spaces. Also some experimental installations were arranged, where the participants could feel (vibrastation) and see (visualization) the sound.

Part of the project was also a small study about the reaction of the heart rate variability (HRV) of student test persons making the soundwalk. Some explanations about the method can be found in [3]. The results showed that the natural sounds of the park area impacted an increasing HRV and therefore formed a more relaxed situation for the test person than on the flat grounds (figure 7).



Results:

Exposed to „mechanic“ sounds, HRV reacts „mechanic“, HRV ↓
Exposed to natural sounds (park), HRV reacts „relaxed“, HRV ↑

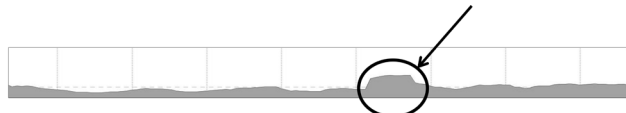


Figure 7: About heart rate variability.

Upper chart: www.pponline.co.uk/encyc/heart-rate-variability-analysis. Lower grey chart shows the HRV of a test person during the soundwalk. Indicated is the increased HRV in the park.

Summary and Outlook

Voice of the city is a work in progress, with a pilot realized in Vienna 2012. The next projects are planned 2014 in Stuttgart and Zürich. The focus of the projects lies on a guided soundwalk, designed in every participating city in a similar way with questionnaire and comparable types of urban spaces. In Vienna mainly groups of pupils circulated on the soundwalk. The results of the questionnaire were significant and interesting, but the questionnaire will be designed in order to get more precise and qualitative results. The exhibition targets an interactive style and communication addressing the acoustic experiences and quality of urban life among participants.

The main objectives of the project like

- increasing the importance of hearing in society,
- training of conscious listening, especially for young people,

- getting in touch with the sound around, hearing it, describing it, thinking about it,

can be reached by the further development and enrichment of the pilot project.

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