
Calibrating the Senses

By: René van Peer

In 1996 Hans Ulrich Werner (radio producer, soundscape composer, and director of the Studio für Klangdesign of the Westdeutsche Rundfunk in Cologne, Germany) asked me to write a piece, to be included in a book he was working on, *Soundscape Design - KlangWelten HörZeichen*. He envisaged an article in the line of the [Nature on Record](#) series that I had written for Experimental Musical Instruments. Instead I decided to report on an intense listening experience I had when visiting a cave system in northern Hungary. The book was published in December 1997. Most of the articles, by Hans Ulrich Werner and a long list of contributors, are in German. In the variety of topics it covers and the openness of mind that it breathes, it is a book that should make it worthwhile for anyone interested in sound perception and sound design to learn German.

Even though mankind habitually acts as if this planet were his, there are plenty of places that are not very well suited to human presence. Going there means negotiating one's way ahead. This is true for the sea, for rainforests, for deserts, for regions inside the Polar circles. Most of these places are remote from urban areas and still can only be reached with considerable difficulty - world spanning transport and the use of ever more sophisticated equipment notwithstanding. Some of them, however, lie around the corner, so to speak. The world beneath our feet is never far away.

Cave systems are a world of their own. Those that are open to tourists are mostly large, well lit - often in fancy colors - and freely accessible to a very limited extent only. Awe inspiring though such caves may be, with their large dimensions and dazzling rock formations, this makes the experience of going around in them a far cry from visiting caves that have not been accommodated to tourist groups.

In the summer of 1996 my wife and I visited one in the north of Hungary, close to the village Jósvalfö, guided by a friend who has been a speleologist from early childhood. To get to the cave we had to walk through a wood on the slopes of a valley of a small river that is fed by springs and brooks welling up everywhere in this karst region. Coming out of the wood into the open again, I found myself in a landscape of rounded hills with dells, copses and spots of woodland here and there. Herds of half wild horses wandered around, loosely tended by a couple of men.

The entrance to the cave lay in a patch of forest, barely visible in the shade of the trees. In the opening itself there was a door to which my friend has the key. It opened on to a straight corridor. The temperature dropped, and it dropped even further when we went past the door at the other end, through which we entered the cave proper. The first forty meters were still lit. A slippery concrete ramp sloped down to a clay floor, damp like the walls and the air we breathed. Then we passed the last lamp, the light got weaker. One left turn, and we were in the dark - time to light the carbide lamps that burn with a hissing, bright white flame. The lamps cast deep shadows all around.

It was at that moment that I realized we had ventured into an entirely different world, full of shadows, and dank at 11° C. The air didn't move. It was still and silent. The mud stuck to my

shoes, every step was accompanied by a modest squelch. The walls looked smooth and shiny in the white light, but were gritty to the touch. At first they seemed to drain the warmth from my hands. It made me want to avoid contact. After some time, however, I found that walking is a lot easier when using the walls for support and orientation.

Everything is uneven here. The floor is not just muddy, there are lumps and dips, sometimes it is slanting sideways - you are never certain of your footing. The walls are more irregular than that, far more. The surface is all craggy and jagged, if it's naked rock. It juts out, curves inward, then narrows down forcing you to stoop or crawl. The deceptive play of light and shadow often makes you miscalculate the distance and size of such features on sight - and bump into or scrape along wall or ceiling. The slow pace does not make the impact less painful. The inertia of the body could have you crack your skull with no problem at all. Protective helmets are of vital importance, as much as the lamps. So far I have not yet come out of a cave without hurting shoulders; but neither has my friend, who is an experienced caveman. I cannot tell whether that is a solace, really. Still, keeping manual contact with the wall considerably reduces your liability to collisions.

In a relief of the feeling of closeness a narrow corridor may suddenly widen to a cavity; a wall may turn into a shaft - up, or down. Lighting the sides often reveals the miraculous lush shapes of minerals deposited there by drops of water, that dissolve particles as they seep through the earth, and come trickling down the cave walls one by one, then evaporate. There the mineral sediment covers the walls as a crust with row after row of minute terraces that glisten like fresh snow reflecting the beams of a frosty sun. Dripping from the ceiling it may in the course of countless long years form free-hanging collections of spikes and cones, or even thick corrugated slabs - some ridged, some surprisingly smooth. The slabs, often translucent, look almost creamy, as if belying the solidity of their texture. Suspended in shafts they resemble huge cooling fins, enhancing the impression given by the irregularity of all the shapes here that we are moving about in the internal organs of the earth.

We advance in near silence. Questions, warnings or drawing each other's attention to some especially wonderful feature come out in just a few words. No long conversations, no calling out. Any words that are spoken are gone the moment they have left your lips - this place has no reverb to speak of. With the magnificence of the shapes, the damp and silent cold, and the close atmosphere this is an awesome otherworldly environment, that makes me want to keep quiet.

After we had walked and crept along the sinuous corridors for over forty minutes we came upon a room that could only be entered climbing and crawling through a narrow opening at shoulder level above the floor. It was approximately dome shaped, but so irregular that acoustically it was almost a dead space. We sat down and did what we had come there for - we blew out our lights.

It was pitch dark immediately, but because of the after effects of the light it seemed as if the darkness came moving in from all sides to engulf me. And even when it was obviously complete I still saw dim phantom figures that only receded very gradually - I can't say at what point I stopped seeing them. The first thing I sensed was that this blackness appeared to be smooth and silky, like being enwrapped and not feeling the material that you're wrapped in. Then my sense of space expanded as if the visual wave had reversed its course and now radiated out as a projection from my ears, that seemed to leap towards the boundaries of their reach. Sitting still I didn't feel my bottom touching the floor, didn't feel my clothes around me, didn't even feel my arms around my knees and my right hand holding the other. For all I knew I might be floating motionless in a boundless void.

My ears took a giant leap back when I became aware of sounds from my own body - breathing, a pulse in my ears, and a steady background of hiss that sometimes geared up to a insistent whistle. These sounds seemed to take place on the surface, my skin a thin sentient membrane with darkness and emptiness on either side. I began to notice minute differences immediately on my skin - cold air brushing my nostrils and the walls of my nasal cavity with every intake of breath, a slight increase of temperature when breathing out; a continuous updraft of the heat from my body rolling warmly over my face; the brushing touch of my clothes, no matter how light, with each movement.

The space was not totally silent, though. Tiny cracks, creaks, pops and drops occurred, very infrequently. They were so soft that I could hardly make out where they came from. On the other hand they were far louder than the sounds from my body, pushing them aside at once. It was uncanny to find that the hiss and the throb that had seemed intense enough to fill up this sonic space, gave way to these small disturbances so easily - a complete and sudden inversion of magnitude, as if listening through a microscope without noticing it at first.

After some time I was able to pinpoint some of the sounds. The drips, muffled by distance and refraction, apparently came from a different room. The cracks and pops were everywhere, close by and farther away, but mostly from above. It was quite unnerving to realize that these caves are not as solid and stable as one would think and hope. All concentration on the minute events around me was instantly and completely wiped away by the vision of the ceiling opening like a gaping maw and crushing us under tons of earth. It brought back the idea of this cave system as the extension of a prodigious animate being - not oblivious of these insignificant organisms as it had seemed when we inspected the slabs, but intent on their destruction. I even imagined how it would plunge us into terror with a deafening roar, just before swallowing us.

In a desperate attempt to regain control of my rampant imagination I focused on my perceptible surroundings again, making sure that I did not interpret a crack otherwise than a crack - a sound generated by continuous activity and movement of a place that, like so many others, is not as still as it appears at a quick glance.

It was not too long before the others began to move, so we quietly lit our lamps making the room materialize again in the white glare of the carbide flame. Slowly we made our way back to the entrance of the cave. We didn't say much. By tacit agreement none of us wanted to break the spell of the extraordinary darkness and near-silence of that room, that was still inside us. Finally we reached the straight corridor leading to the door.

I had already noticed a slight rise in temperature, but nothing could prepare me for the surge of sensations as we stepped outside. The lush green, yellows and browns of the thicket surrounding the entrance and the field that lay beyond it. The sheer depth of the placement of sounds around me, the sharp rustle of dry leaves underneath my feet, the snap of a branch, the murmur of the breeze mounting and subsiding, birds calling everywhere, the arid buzz of crickets. Then there was an almost overpowering smell of vegetation - a thick spicy and musty mixture full of detailed variety. The heat fell on us like a drape.

We took off the coveralls we had worn to protect our clothes from getting torn and smudged, and ourselves from the cold. We folded them into our backpacks, watched the smears of clay on each others' hands and shoes with a grin, took a deep breath and walked back to the village - marveling at the complex of sights, sounds and smells, at the sun and the wind on our faces, conscious that this world is alive, and happy to be in it.

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SoundScape Design - KlangWelten HörZeichen (book with CD)

[Hans Ulrich Werner](#) and the insertionists

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