Improving urban soundscapes:
soundscape advise and the context of experience

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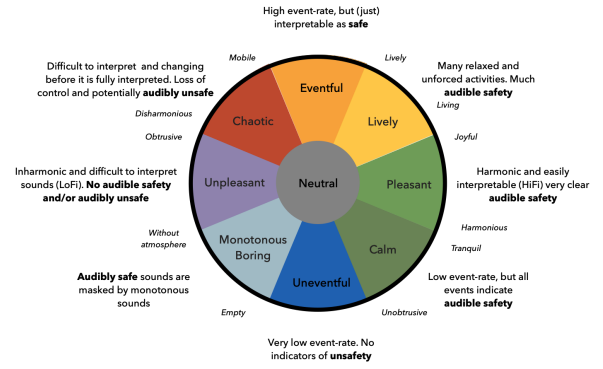## The Sonic Environment & Soundscape

- Monitoring sound 24/7
- Signal and soundscape analysis on node
- Visualisation: *cochleogram* at 1 second sampling
- Separation into "perceptual layers" based on development-rate of the signal (sources): τ = 0.001, 1, 60, 3600 seconds
- Different layers contribute to different soundscape appraisals: *calm*, *lively*, *chaotic*, *boring/monotonous*
- Every second an appraisal estimation is visualised in a histogram
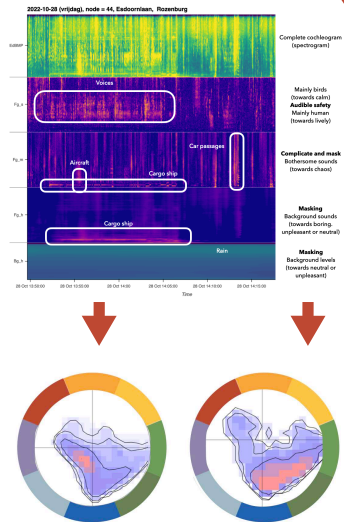
Van den Bosch, K., Welch, D., Andringa, T.J. (2018). The evolution of soundscape appraisal through enactive cognition. Frontiers in Psychology, 9, 1129.)

Audible Safety
Sound appraisal is rooted in *audible safety: Determining safety through sound*

Soundscape is *"the sonic environment as experienced and interpreted by a person or people, in context."*

The sonic environment is not only appraised on its measurable sonic features; it is experienced holistically and influenced by many personal, societal, and environmental factors.

At SoundAppraisal, we recognise this and:
- Develop 24/7 sound appraisal technology
- Advise on soundscape- and annoyance policy
- Provide soundscape consultancy

Environmental quality

Experience is holistic and multi-sensory

Appraisal is based on what we hear, see, feel, smell, taste, and our mental and physiological states

Other pollutants
Neighbourhood satisfaction
Social safety
Vandalism
Access to parks and urban greenery
Cleanliness of the neighbourhood
Amenities

The "final" drop

Sonic environment
Environmental quality
Individual factors
Sociological factors
Policy & governance

Individual factors:
Sound appraisal is informed by our personal histories, health, wellbeing, preferences and sensitivities.

GLIMI-project includes personal experience sampling, via
- *soundwalks* and an
- online web portal

Subjective data enriches, informs and validates the objective measurements

Policy and governance: Urban planning and soundscape design practices

Citizen engagement and participation is central to healthy soundscapes (including effective noise management)

This needs good communication between
- (local) government bodies
- residents
- sound producers

Sound planning - adapted to local needs, consists of:

- Alignment of sonic needs and affordances
- Reducing, abating and masking unwanted sounds
- Enhancing, promoting and accentuating wanted sounds

Sociological factors
Sonic experience is about meaning making, shaped by society and its values

Acoustic autonomy
"The actual and perceived control over the sonic environment"

Ursem, M. (2021). Sound and the city: experiences of urban sound and quietness. Universiteit van Amsterdam (unpublished manuscript).

- soundproofing
- financial possibilities
- physical possibilities
- social control
- information and citizen participation

Appropriateness of sound
"(…) noise is defined by sound that is out of place"
(Broër, c. (2002). Sound, meaning and politics. The social construction of aircraft noise annoyance. Forum Acousticum, Seville.)

Functions and expectations

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