Defining non-acoustical factors. Multidisciplinary focus
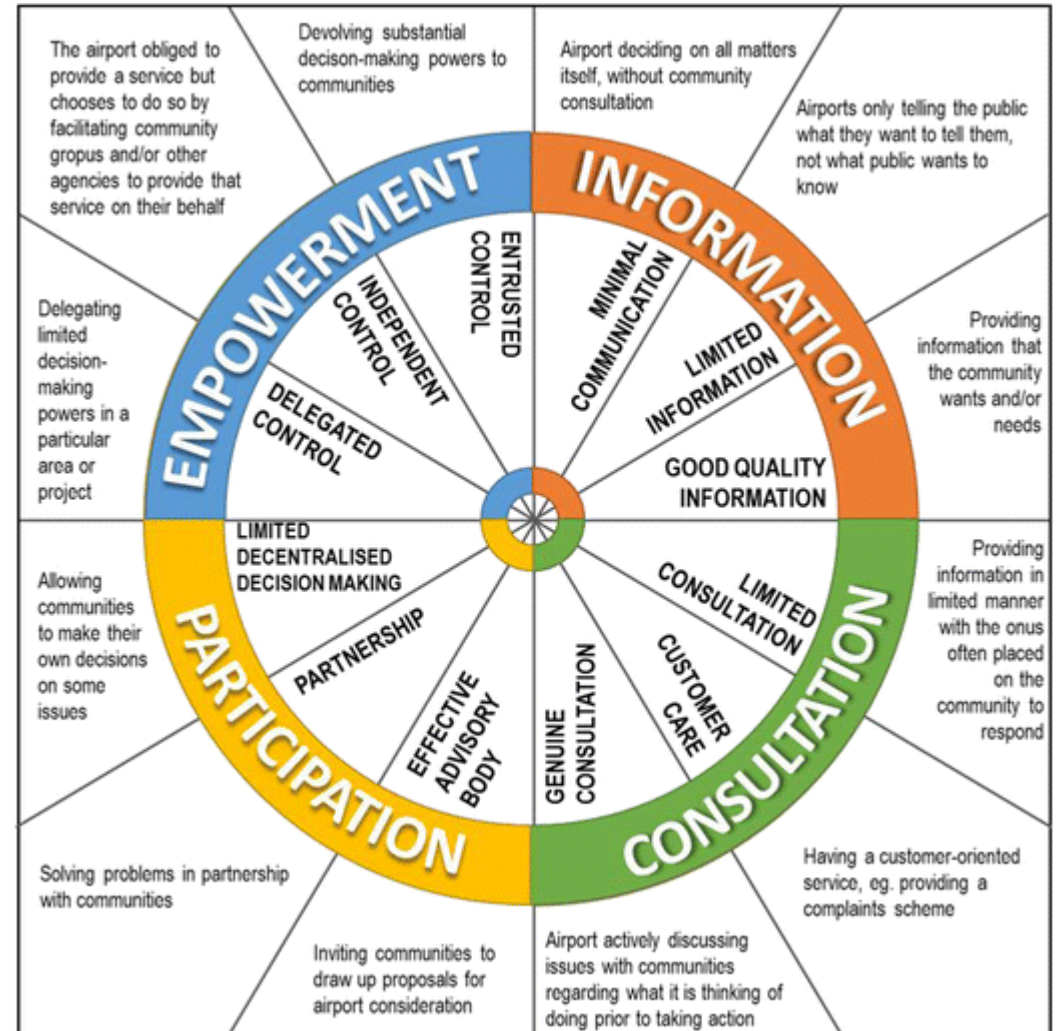
Author(s): Elena Narcisa Burtea, Dan Radulescu

Affiliation: Romanian Research and Development Institute for Gas Turbines
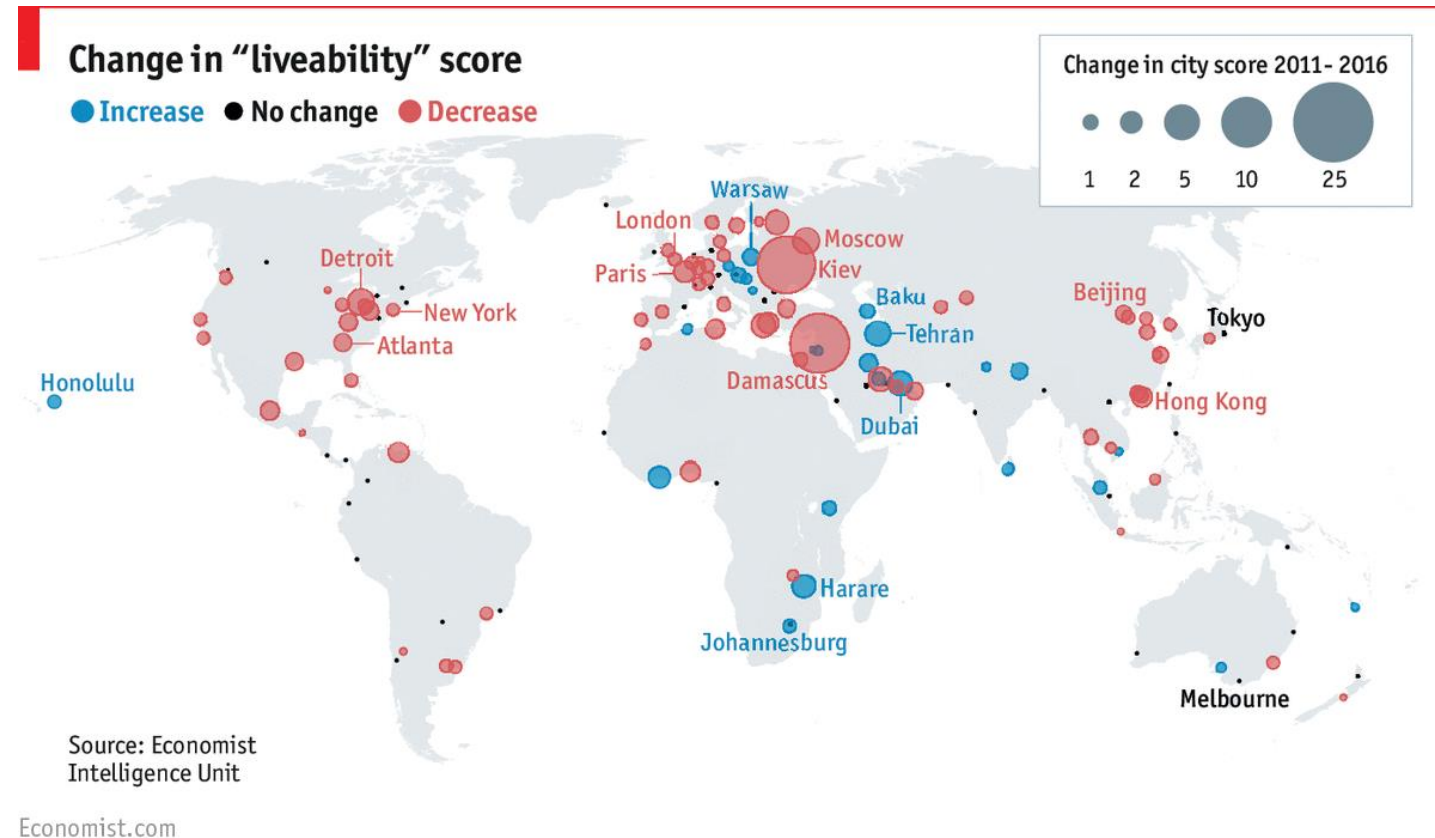
CEAS-ASC 2018 Workshop

Overview of Non-acoustical Factors

- Summary of research
- Multidisciplinarity characteristics
- Challenges in defining new factors
- Potential liaisons with other studies

# "Livable cities" (example)

- Why is multidisciplinarity needed?
- Definition of livability
- Development of future cities
- Organical growth (tendencies)
- Sustainability (solutions)

Change in "liveability" score
- Increase — No change — Decrease

Change in city score 2011- 2016
1 2 5 10 25

Warsaw
London
Paris
Detroit
New York
Atlanta
Honolulu
Moscow
Kiev
Baku
Tehran
Damascus
Dubai
Beijing
Tokyo
Hong Kong
Harare
Johannesburg
Melbourne

Source: Economist Intelligence Unit

Economist.com

Source: https://www.economist.com/graphic-detail/2016/08/18/the-worlds-most-liveable-cities

"Soundscaping" insight (example)

- Historical overview
- Four ways in which sound affects people
- When sound becomes "accidental and unpleasant"?
- Recognition, Association, Power
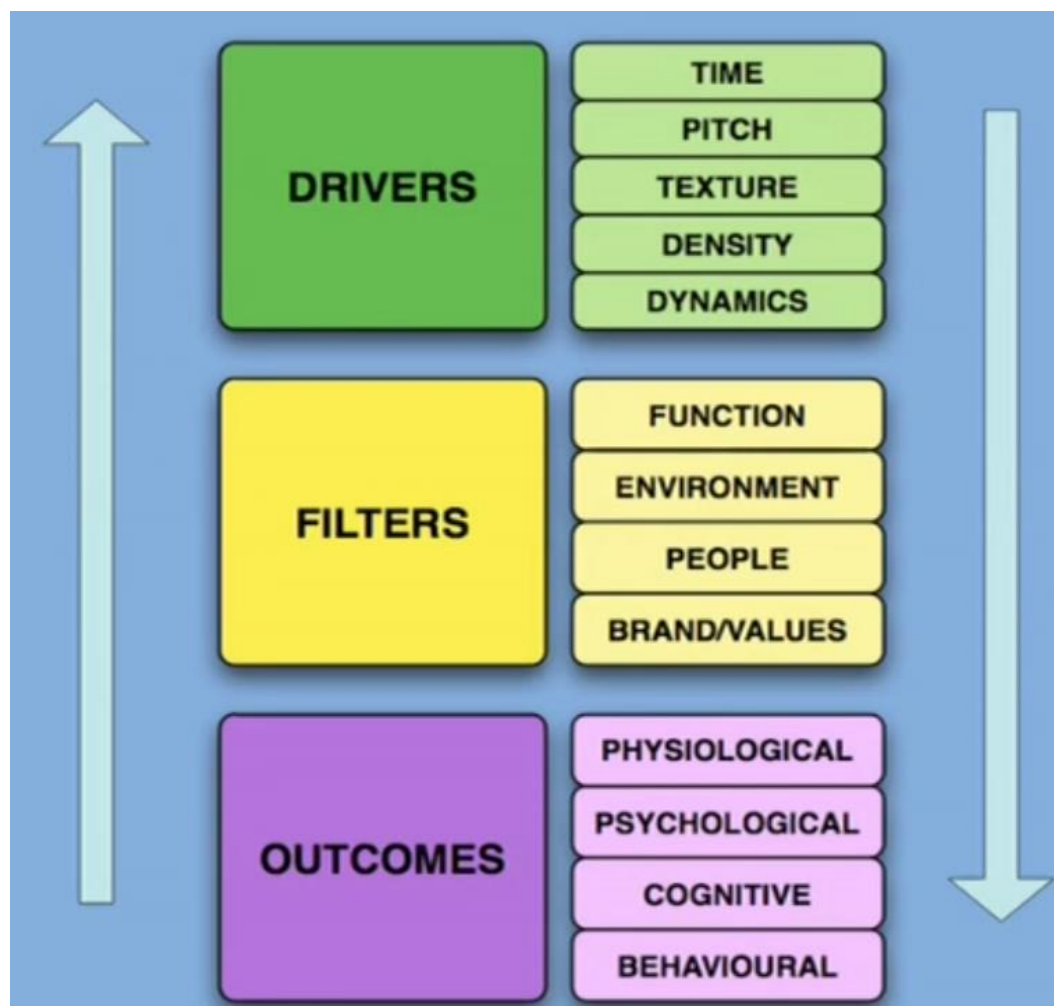- "The four Golden Rules for commercial sound"

Source: https://www.youtube.com/watch?v=Zap49WLCS-E
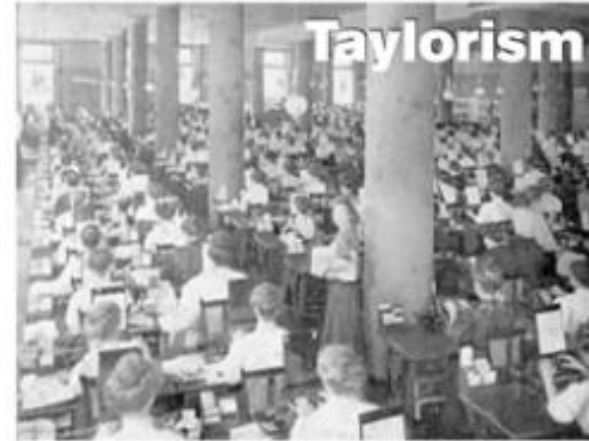
"Soundscaping" Model (example)

Source: https://www.youtube.com/watch?v=rRepnhXq33s

"Soundscaping" – Sound Health (example)

- Sound Health (Schizophonia, the cost of compression, NIHD)

- Hearing versus listening (reductive/expansive)
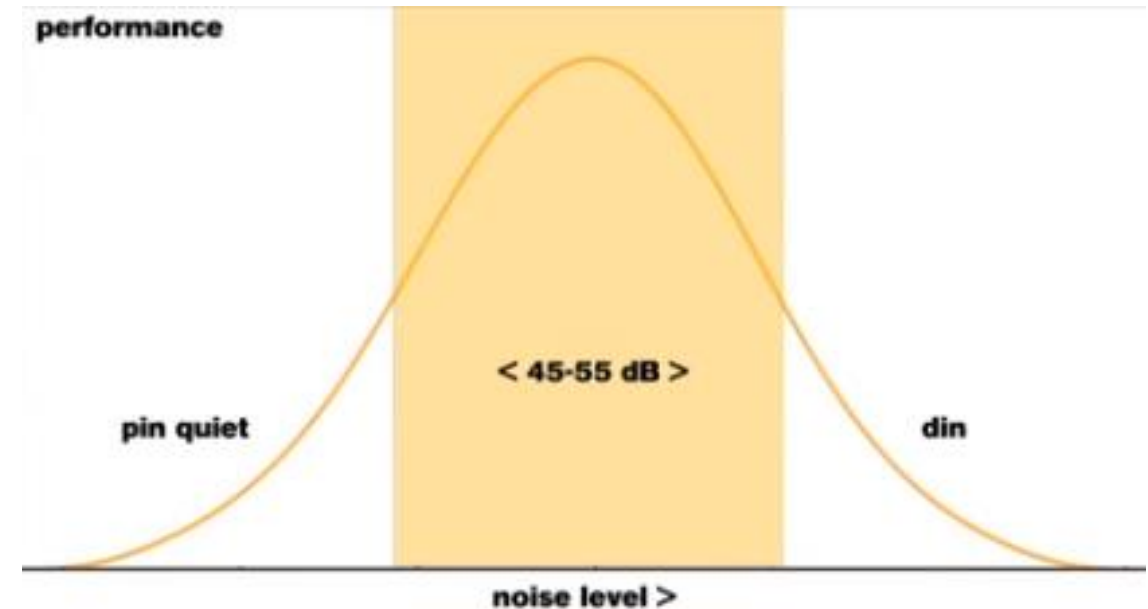
- What is silence?

"Soundscaping" – Sound Health (example)

Source: https://www.youtube.com/watch?v=ELgvDMTKyBE

Lesson Learning Approach

- Consider a shift from annoyance to impact on 'happiness'
- Focus on performance targets
- Understand general complaints on noise
- Understand long-term effects on productivity
- Understand the implications of 'designing experience' and find opportunities
- Design 'creativity areas' to support a collaborative approach between airports and communities
- Understand livability characteristics

performance

< 45-55 dB >

pin quiet   din

noise level >

Content

Sound system

Noise sources

Acoustics

Source: https://www.youtube.com/watch?v=Zap49WLCS-E

Thank you for your attention!