21M.380 Music and Technology
Sound Design

Reading assignment 5 (rd5)
Perception of sound and soundwalking

Due: Wednesday, February 24, 2016, noon
Submit to: MIT Learning Modules ▸ Assignments
0.5% of total grade

1 Materials to study

Farnell, Andy (2010). "Psychoacoustics." In: *Designing Sound*. Cambridge, MA and London: MIT Press. Chap. 6, pp. 77–117. isbn: 978-0-262-01441-0. mit library: 001782567. Hardcopy and electronic resource.

Westerkamp, Hildegard (2007). "Soundwalking." In: *Autumn Leaves. Sound and the Environment in Artistic Practice*. Ed. by Angus Carlyle. Paris: Double Entendre, pp. 49–54. isbn: 978-0-9548074-3-6. mit library: 002198647. Available in a slightly different version at http://cec.concordia.ca/econtact/Soundwalk/Soundwalking.html.

2 Questions to respond to

1. Which two cues does the auditory system primarily rely on in order to localize the source of a sound in the horizontal plane? In how far do these two cues complement each other?

2. How would a just-noticeable difference (JND) likely be defined in terms of sound localization? From your everyday experience, try to quanitfy the JND for localizing sounds directly in front of you.

3. Does the physical amplitude of a 100 Hz tone need to be equal to, lower, or higher than that of a 1 kHz tone in order for the two to be perceived as equally loud? Explain.

4. Which kind of words does Farnell deem suitable for the verbal description of sounds? Which does he deem less suitable? Provide one illustrative example that is *not* in the book for each.

3   Guidelines

- Your answers need not be very extensive (a short paragraph per question is enough), but they should demonstrate that you have actually read the article and understood its main points.

- Try to be concise and pay attention to form, grammar, spelling, etc.

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