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JND

Introduction

The purpose of this study is to evaluate the just noticeable difference (JND) of pitch. Webers law:

$$\frac{\Delta I}{I} = k$$

Methods

Psychometric method

Method of Constant Stimuli

Data collection method: Two-Alternative Forced Choice (2-AFC) (avoids criterium problems)

Stimuli

Reference stimulus intensity: 800 Hz (pure tones)

Expected JND: ca. 1.2 Hz (Wier, Jesteadt & Green, 1977)

Logarithmic distribution on chosen frequencies from a 800 Hz reference.

Difference from 800 Hz: 0.3 Hz, 0.6 Hz, 1.2 Hz, 2.4 Hz, 4.8 Hz, 9.6 Hz. (before pilot test)

Order of stimuli representation: Randomize presentation order for comparisons over all frequencies and repetitions. Repetitions: 12 at each frequency

Experimental setup

Equipment: Bang & Olufsen H6 headphones, Lenovo ThinkPad (Volume 10)

Test subjects

Five test subjects two males and three females, age 23 - 24 (mean: 23.4).

Pilot testing

Based on a pilot test with two test subjects (one male and one female) it is decided to expand the stimuli intensity range down to 0.15 Hz and up to 19.2 Hz.

Results

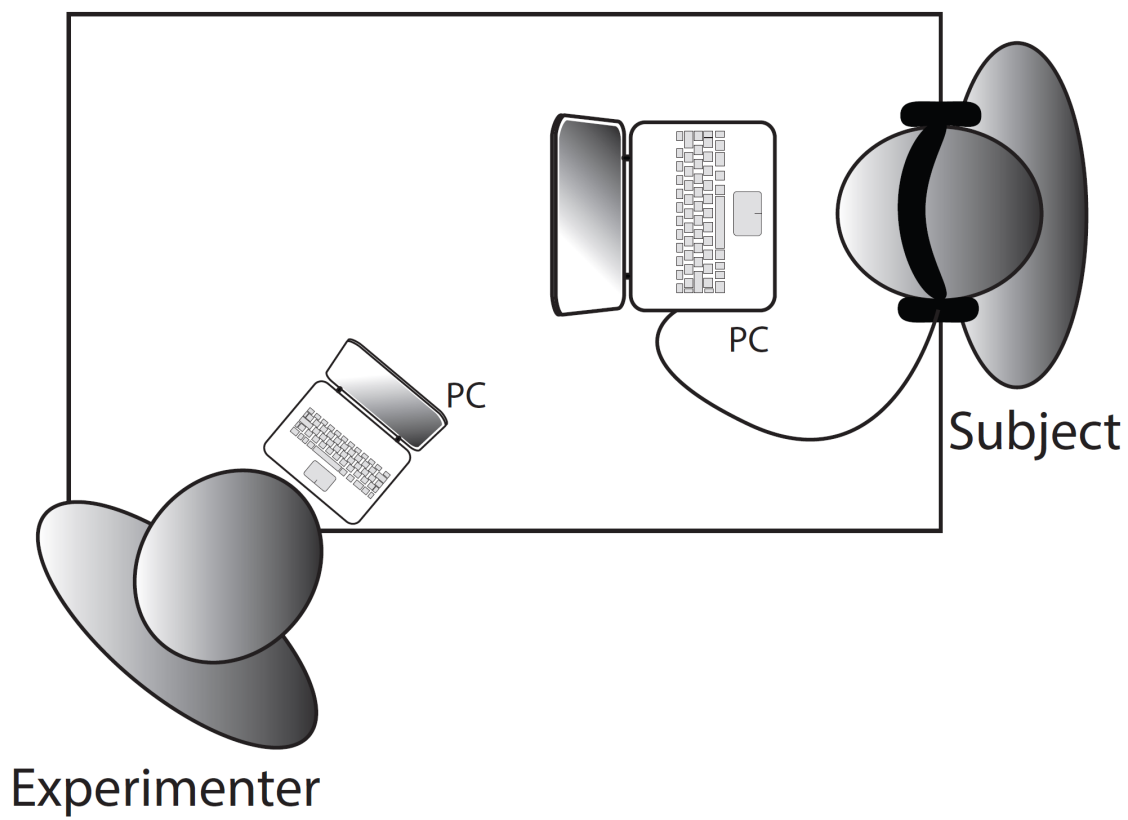


Figure 0.1. A sketch of the experimental setup