SUPPLEMENTARY MATERIAL FOR: INVESTIGATING THE EFFECTS OF SOUND SOURCE OCCLUSION IN A REAL DYNAMIC SCENARIO

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1. GEOMETRIC REPRESENTATION

An overview of the considered setup with the two considered sources, S1 and S2 and the four considered walking paths, L1 to L4. Based on the measurements, the boundaries for the formation of the 'Shadow' region are indicated in Figure 1.

2. ATTRIBUTE RATING ANALYSIS

The four attributes: General Difference, Loudness, Localizibilty, and Spectral Difference were rated on a scale of 1-5 after each stimuli. The distribution of the ratings of the different attributes are shown in Figure 2.

Furthermore, statistical significance testing using the Scheirer-Ray-Hare test was conducted. The results of this test are shown in Table 1.

3. ACOUSTIC PARAMETER COMPARISON

Two acoustic parameters, namely C_{50} and T_S were calculated for all four considered lines as well as the two sound sources. S1 represents the source placed 2m away from the wall and S2 the source placed
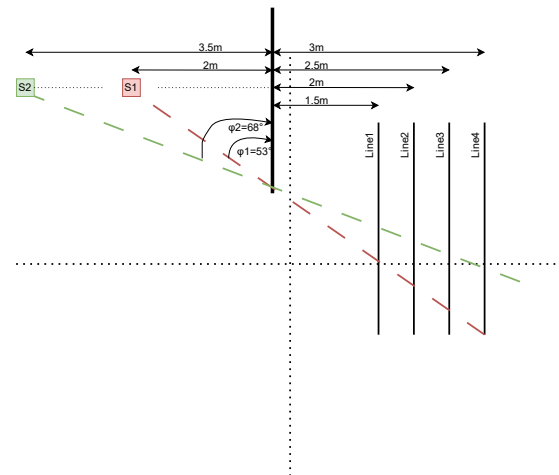
Figure 1: The schematics for the utilized setup. The dotted lines indicate the boundary to each shadow zone based on S1(red) and S2(green).
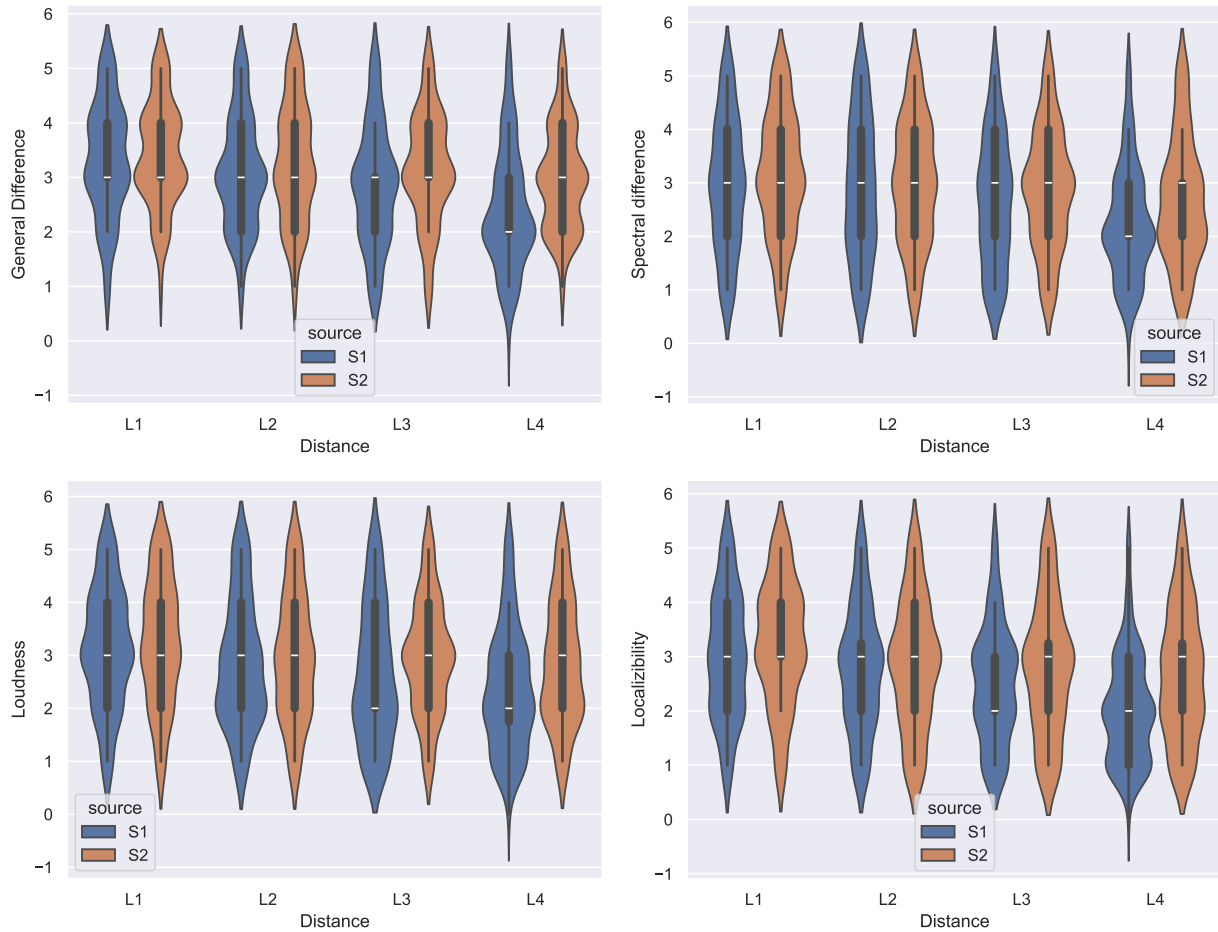
3.5m away from the wall. The measurements were performed with an omnidirectional microphone. The parameter variation can be visualized against the click rating distributions, considering both directions of walking as indicated by '+vx' and '-vx' in Figures 3 to 10.

The four lines are denoted using the tracking data coordinate system with:

- Line 1 (1.5m away from wall) - '-1.14'

Figure 2: Rating distribution of the used attributes

- Line 2 (2m away from wall) - '-1.64'

- Line 3 (2.5m away from wall) - '-2.14'

- Line 4 (3m away from wall) - '-2.64'

Table 1: Scheirer-Ray-Hare results for the attribute ratings.

| Effect	p-value			
	General Difference	Spectral Difference	Loudness	Localizibility
Line	2.633e-10	2.528e-07	1.586e-06	1.121e-11
Source	5.985e-05	0.002	0.0008	7.265e-05
Sample	1.425e-14	1.044e-18	9.797e-09	0.004
Line:Source	0.084	0.678	0.209	0.097
Line:Sample	0.599	0.543	0.107	0.999
Source:Sample	0.322	0.712	1.000	0.503
Line:Source:Sample	0.908	0.863	0.813	0.823
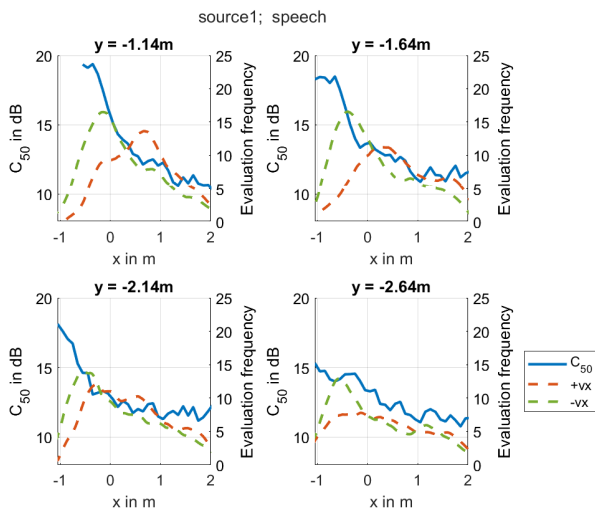
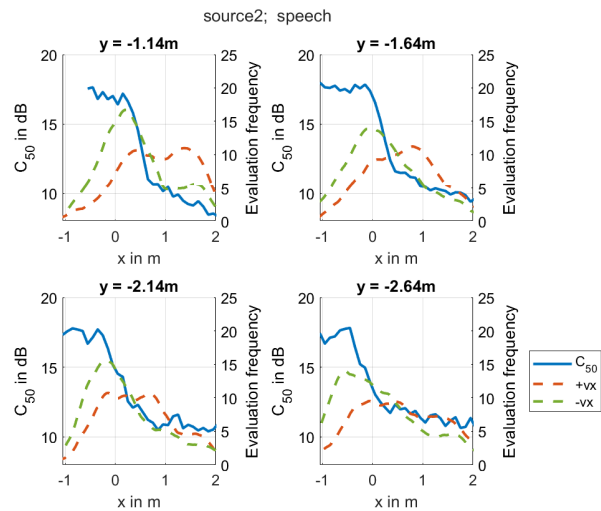**Figure 3**: C_{50} overview across all 4 lines for S1 and male speech.
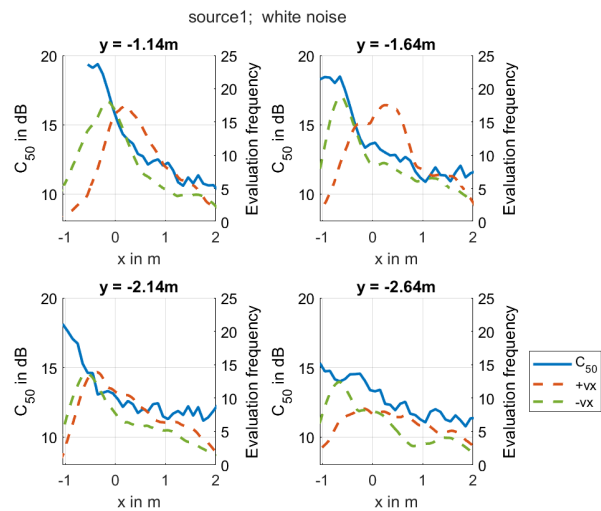
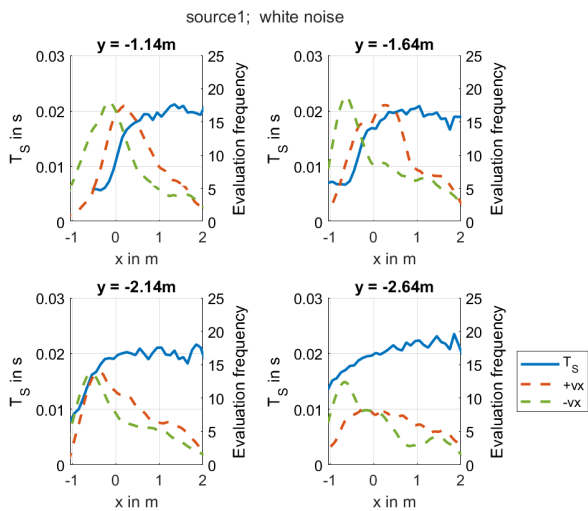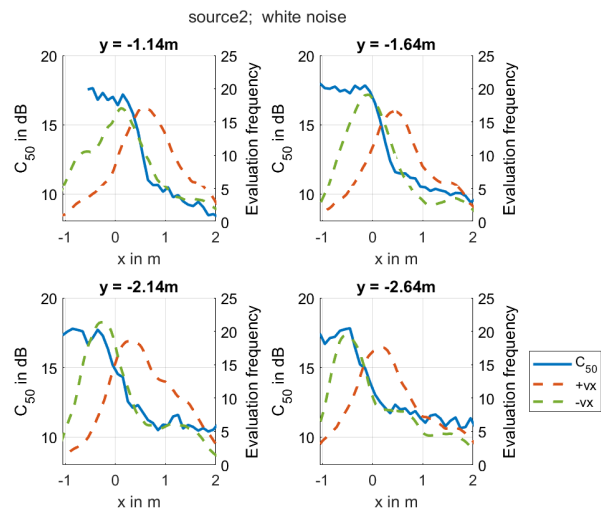**Figure 4**: C_{50} overview across all 4 lines for S1 and white noise.
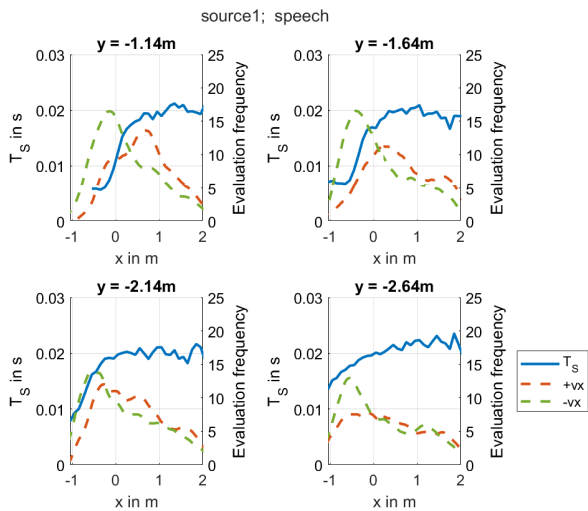
Figure 5: T_S overview across all 4 lines for S1 and male speech.

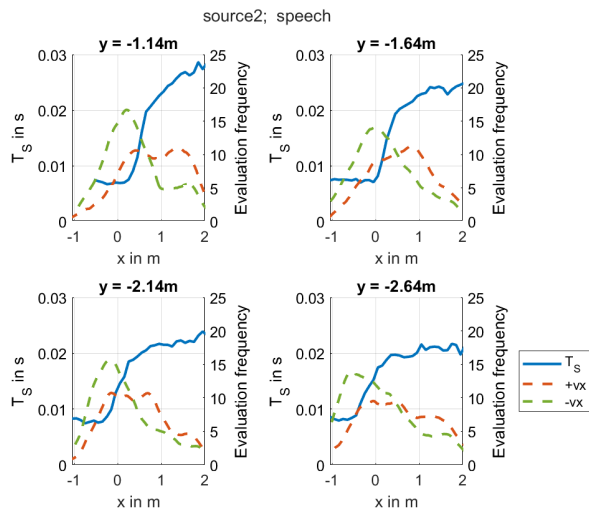**Figure 7**: C_{50} overview across all 4 lines for S2 and male speech.

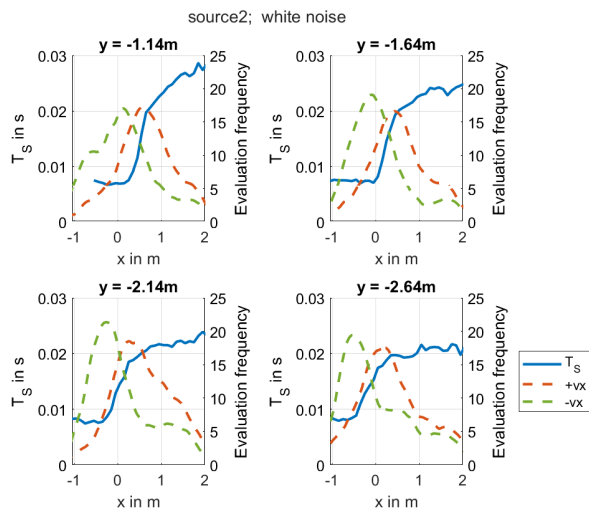**Figure 6**: T_S overview across all 4 lines for S1 and white noise.

Figure 8: C_{50} overview across all 4 lines for S2 and white noise.

Figure 9: T_S overview across all 4 lines for S2 and male speech.

Figure 10: T_S overview across all 4 lines for S2 and white noise.