### ***Width of FFR spectral components***

Bandwidths of FFR spectral components were measured to quantify the differential effect of reverberation's "smearing" on the fundamental (F0=H1) versus formant-related harmonics (H2-H4). From the spectra of each response waveform (see Methods), the width (in Hz) of the first four harmonics were measured as the difference in frequency cutoffs defined by the 3 dB down point (i.e., half power) from each peak magnitude. This spectral width provides a measure of the breadth of each response component or in other words, the specificity of FFR phase-locking to harmonic constituents in the stimulus as a function of reverberation strength. Spectral widths for F0 (black circles) and formant-related harmonics (gray squares) are shown in Figure S1. For comparison, spectral widths of the input stimuli are shown in the inset. Musicians and non-musicians were pooled as no group differences were observed with this metric. A mixed-model ANOVA revealed significant main effects of reverberation [$F_{1,133} = 4.10$, $p = 0.0081$] and FFT component (F0 vs. harmonics) [$F_{1,133} = 18.52$, $p < 0.0001$] on spectral width as well as their interaction [$F_{3,133} = 2.77$, $p = 0.0445$]. Posthoc Tukey-Kramer adjusted multiple comparisons ($\alpha = 0.05$) revealed that the spectral width of F0 did not change by any appreciable amount with increasing reverberation. F0 widths were smaller as compared to the widths of formant-related harmonics for medium and severe levels of reverberation indicating tighter phase-locking to F0 relative to higher harmonics in those stimulus conditions. Considering only the formant-related harmonics, both the medium and severe reverberation conditions produced larger spectral widths than the dry condition. In addition, harmonic widths were larger in severe reverberation than in both the mild and medium conditions. Together, these results indicate that increasing reverberation strength tended to broaden (cf. "smear") formant-related harmonics (H2-H4) in the FFR but not F0. The differential effect of reverberation on "pitch" (cf. F0) versus more "timbral" (cf. F1-related harmonics, vowel quality) characteristics of speech is most prominent in greater levels of reverberation (e.g., medium and severe) and may be due to the relatively greater "smearing" of the formant-related higher harmonics in the stimuli in these conditions (compare response and stimulus spectral widths).

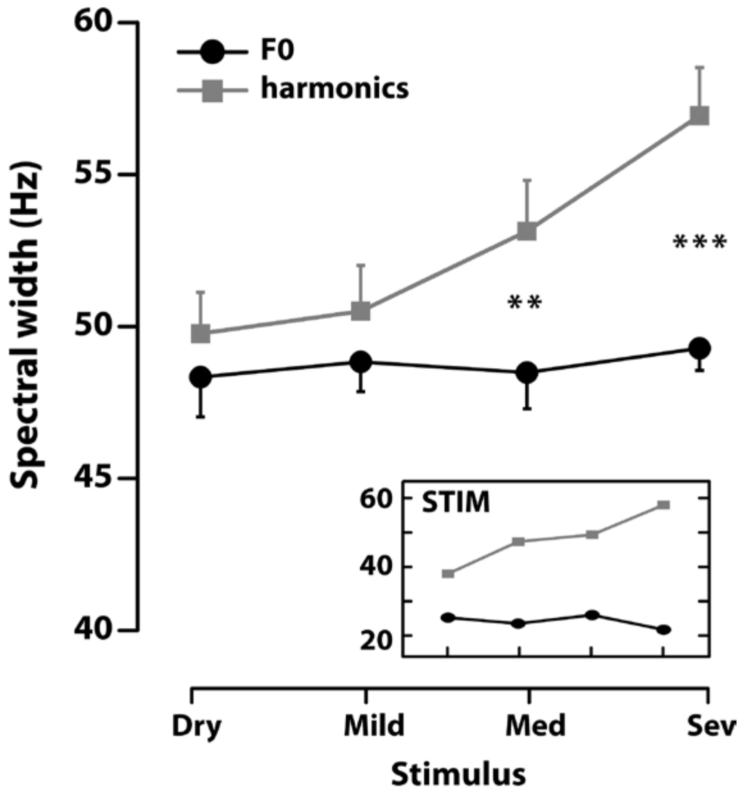


**Figure S1.** Spectral widths of FFR response components for F0 (black circles) and formant-related harmonics (gray squares). The breadth of the first four harmonics were measured from individual FFR spectra computed as the difference in frequency cutoffs defined by the 3 dB down point from each peak magnitude. Width of the harmonics was computed as the mean width of spectral components H2-H4. The width of the F0 component changes little with increasing reverberation in contrast to the harmonics which tend to become broader. For comparison, spectral widths for the stimuli are shown in the inset. The differential effect of reverberation on "pitch" versus more "timbral" characteristics of speech (i.e., vowel quality) is most prominent in medium and severe levels of reverberation and may be due to the relatively greater "smearing" of the formant-related higher frequency harmonics in our stimuli (inset, compare response and stimulus spectral widths). Error bars represent ± 1 SE. $^{**}p < 0.01$, $^{***}p < 0.001$.