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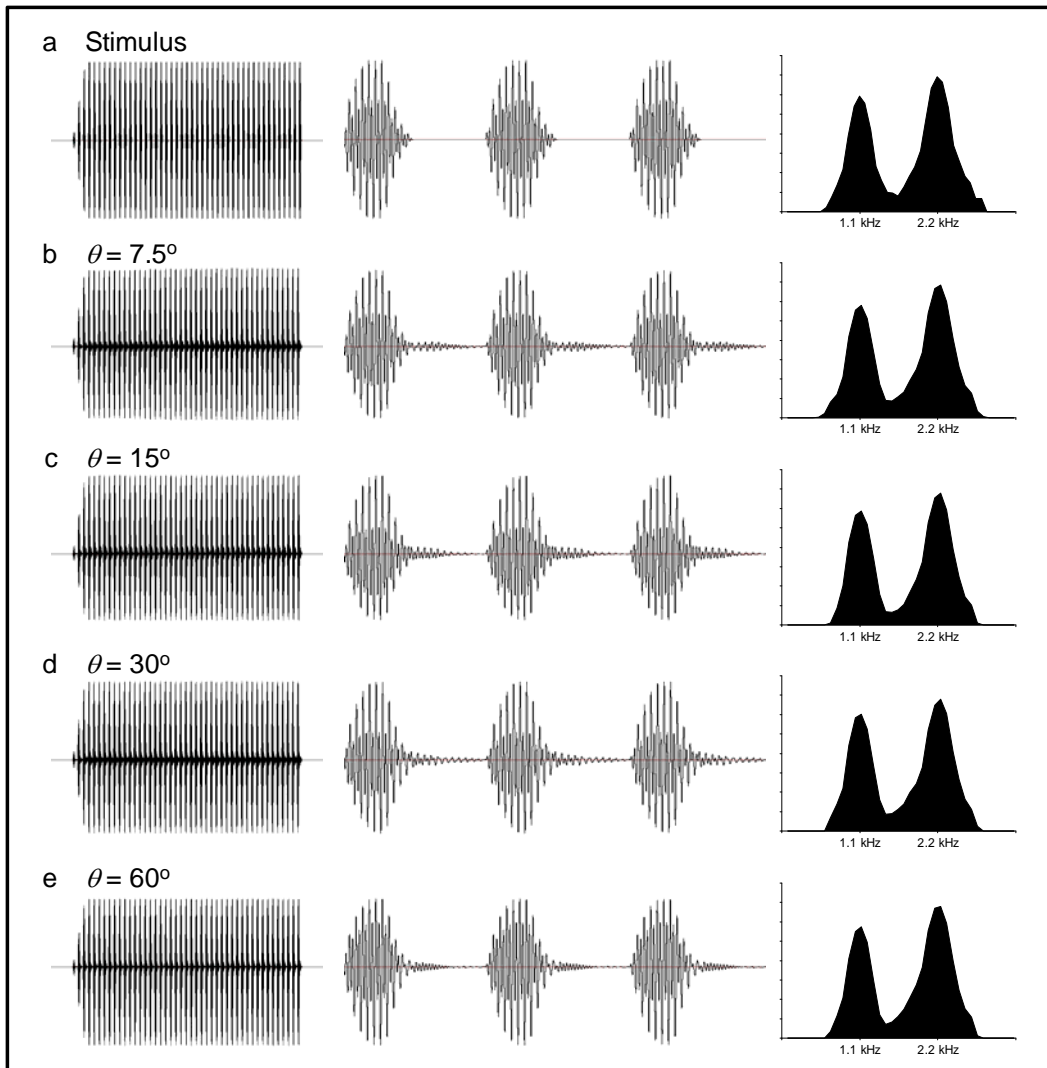
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Supplemental Material

To create the spatially incoherent conditions, I synthesized separate unimodal 1.1 kHz and 2.2 kHz calls that both had the same, fixed starting phase of 0° and the former had a relative amplitude that was 6 dB less than the latter. The two calls were broadcast using different channels in software, the soundcard, and the amplifiers, and they were output through different, spatially separated speakers. Hence, creating the spatially incoherent condition had some potential to introduce one or more stimulus artifacts. Among the potentially salient such artifacts would be the introduction of differences in the relative onset times (and ongoing phases) or the relative amplitudes of the two harmonic. I was unable to detect any such artifacts. Supplemental Figure 1 shows the original, superimposed digital sound files and recordings of the acoustic stimuli in the spatially incoherent conditions. Any differences in onset times, phases, and relative amplitudes between the two harmonics are clearly smaller than what would be experienced by a female moving around in the test arena (see Results and Discussion section of Experiment 2). Hence, the introduction of stimulus artifacts is probably not a viable explanation for the results of the present study.



831 *Supplemental Figure 1.* Re-recordings of stimuli as a function of spatial incoherence (θ).
832 Shown are waveforms for the entire call (left), three pulses from the middle of the call (middle),
833 and the power spectrum of the call (512 point FFT, Hanning windows; 6 dB separation between
834 y-axis tick marks). (a) The digital stimulus file depicting both peaks simultaneously and (b-e)
835 recordings of the spatially incoherent bimodal stimuli played back with the indicated level of
836 angular separation. Recordings were made in the sound chamber and test arena using a Marantz
837 PMD 670 recorder and a Sennheiser ME66 microphone. The microphone was placed at the
838 central release point at which sound calibrations were made and pointed toward the midpoint
839 between the two speakers.