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**Synchrony-asynchrony discrimination of audio-visual signals in
auditory streaming**

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Temporal synchrony is a critical condition for integrating information presented in different sensory modalities. In this study, the effect of tonal organization on synchrony-asynchrony discrimination was examined. The auditory sequences were four repetitions of a triplet pattern comprising a low-frequency tone (L) and a high-frequency tone (H). The frequency difference (ΔF) between L and H was either approximately 1/12, 1/6, 1/3, 1/2, or 1 octave, centered at 1 kHz. Each tone was of 33.2 ms duration including rising and falling raised-cosine ramps of 5 ms. The stimulus onset asynchrony (SOA) of adjacent tones was randomized between 33.2 and 332 ms. The tone sequences were presented diotically via headphones at 65 dB SPL. The visual stimulus was a luminance-modulated Gaussian blob presented on a CRT monitor. The visual stimulus duration was 8.3 ms. Synchrony-asynchrony discrimination thresholds of visual-auditory stimulus onsets were measured using the 2IFC paradigm with a 2-up 1-down method under six ΔF conditions. The results demonstrated that synchrony-asynchrony discrimination improved for audio-visual pulse trains at ΔF between L and H greater than 1/3 octave, suggesting that audio-visual synchrony perception is influenced by the build-up of auditory streaming.