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**Attentional modulation of the perception of illusory vowels and
sound onsets: A functional magnetic resonance imaging (fMRI)
study**

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In a previous study, we exploited the Gestalt principle of closure to create illusory vowel sounds and examined the neural correlates of their perception using fMRI. When two formants of a synthetic vowel are presented in an alternating pattern, filling the gaps in each formant with bursts of noise causes the formants to be heard as continuous and more vowel-like. When this "Illusion" condition was modified by increasing the Formant-to-Noise Ratio (FNR), the formants were heard as interrupted ("Illusion Break" condition) and less vowel-like. BOLD signal in the Middle Temporal Gyrus (MTG) was greater for Illusion than for Illusion-Break stimuli, reflecting the difference in speechlikeness. Primary auditory areas (PAC) exhibited the opposite pattern, probably because Illusion-Break stimuli contain more perceived sound onsets than the Illusion stimuli. In the current study we examine whether the neural activation to illusory vowels and sound onsets is modulated by attention. Participants were scanned while listening to Illusion, Illusion Break, and two types of intact vowels and simultaneously directing their attention either to the vowel stimuli or to auditory or visual distractors. Preliminary analyses suggest that activation to intact and illusory vowels in MTG, and to sound onset in PAC, is modulated by attention.