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Effects of auditory, visual, and audio-visual training on nonnative perception of English fricatives

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This study examines the effects of auditory (A), visual (V), and audio-visual (AV) training on nonnative speech perception. Mandarin Chinese natives were trained to perceive English voiceless fricatives (in monosyllabic words and nonwords) of three visually distinct places of articulation: interdental non-existent in Mandarin, labiodentals and alveolars common in both languages. Participants were randomly assigned to a control group or one of three 2-week (six sessions, 40 minutes/session) training groups with a different input modality: A, V, or AV. In pre- and post-tests, the fricatives are presented in four ways for an identification task: A-only, V-only, AV congruent (AVc), and AV incongruent (AVi). Additionally, three generalization posttests are administered testing voiced fricatives, new real words, and a new speaker. Results show that post-training, the trainees reveal: (1) improvements corresponding to training type (e.g., the V-training group improves most for the V-only stimuli), (2) greater improvements for the familiar (but less visually distinct) alveolars than for the new interdentals, (3) decreased AV-fusion for the AVi stimuli, and (4) consistent patterns in the generalization tests. Results are discussed in terms of the effects of speech input modality, experience, and L1 on L2 AV speech learning. [Research supported by SSHRC]