

## **UC Merced**

# **Proceedings of the Annual Meeting of the Cognitive Science Society**

### **Title**

Can audio-visual integration, adaptive learning, and explicit feedback improve the perception of noisy speech?

### **Permalink**

<https://escholarship.org/uc/item/4t93s442>

### **Journal**

Proceedings of the Annual Meeting of the Cognitive Science Society, 42(0)

### **Authors**

deschamps, Stephanie

Zhang, Hanna

Armstrong, Blair

### **Publication Date**

2020

Peer reviewed

# **Can audio-visual integration, adaptive learning, and explicit feedback improve the perception of noisy speech?**

**stephanie deschamps**

McGill University, Montreal, Quebec, Canada

**Hanna Zhang**

University of Toronto, Toronto, Ontario, Canada

**Blair Armstrong**

University of Toronto, Toronto, Ontario, Canada

## **Abstract**

The perception of degraded speech input is essential in everyday life and is a major challenge in a variety of clinical settings, including for cochlear implant users. We investigated English speakers perception of noisy speech via an audio-visual lexical decision paradigm that modulated cross-modal integration, adaptive modulation of task difficulty, and explicit feedback on response accuracy. We then tested whether proficiency with this task transferred to the perception of noisy audio stimuli in a post test. Although we observed a processing advantage for bimodal stimuli during training, particularly in the adaptive training condition, we did not observe any benefit from these conditions in the post test, nor a benefit associated with providing explicit feedback. These results are discussed in relation to other studies of audio-visual integration and learning to perceive noisy speech, which may have observed different results due to more extensive training and different baseline proficiency levels.