Auditory noise as a fast trigger for speech-reading

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Abstract

Previous research has found that normal-hearing adults direct more visual attention to the visual correlates of the articulators when the speech signal is noisy (e.g. Vatikiotis-Bateson, et al. 1998). We conducted an experiment investigating whether normal-hearing adults use this strategy even in a task which is not centered around speech-reading and where this behavior is particularly difficult to perform. One key question is whether this strategy has been automatized to the degree that noise onset is a fast trigger for speech-reading behavior or whether the behavior is a slow adaptation to an environment of uncertain auditory quality. We find that our normal-hearing adults, despite the challenging stimuli, perform speech-reading even in scenes hard to speech-read and where the task does not require speech-reading. However, the effect peaks at around 500 ms, which is a fast adaptation, but still slower than expected – enough time to perform around two saccades to new targets. 85 % of all participant showed eye movements consistent with speech-reading behavior. A reaction to even pure noise suggests participants have learned to associate noise with a look-up behavior in communicative settings.