

Metacognitive awareness of lip-reading gains in young and older adults

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In this study we targeted metacognition of lip-reading benefits in older and younger adults listening to a visible talker in noise. We explored individuals' awareness of the advantages of lip-reading under the form of improved confidence and reduced listening effort. Additionally, we examine whether this metacognitive awareness changes with age, investigating differences in metacognitive indexes and participants' self-evaluation of their actual listening improvements. Using a virtual reality hearing-in-noise task, older and younger adults listened to an avatar whose visibility was modulated adjusting the opacity of a panel. We measured real and perceived improvements, confidence improvement, and effort reduction as participants switched between different visibility conditions. Both age groups showed similar real improvements, revealing an underlying effective audio-visual integration. Moreover, comparable improvements in confidence suggested a lip-reading gain that impacts listening beyond mere performance, irrespective of age. The only group difference was found in effort reduction, which was smaller for older adults when lip visibility was greater, particularly among those with lower lip-reading abilities. Despite both groups displayed a consistent awareness of lip-reading gains, older adults may face greater challenges in audio-visual listening, which may interfere with their willingness to use lip-reading as a strategy in their everyday life. Effort, therefore, may be considered more than an index of how much resources are deployed in a task, becoming an internal feeling that may concur in deciding whether to implement adaptive behaviors, with important consequences on the design of interventions aimed at ameliorating older adult's quality of social interactions.

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