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Characterizing lexical interferences in informational masking during speech-in-speech comprehension

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Results from our former research on the characterization of informational masking effects occurring during speech-in-speech comprehension showed that phonological and lexical information create specific informational masking effects, depending on the number of speakers involved (Hoen et al., 2007). The goal of the present study was to better characterize purely lexical factors potentially participating into informational masking phenomena. We evaluated speech-in-speech comprehension performances of 40 normal hearing participants listening to isolated lexical items presented together with different speech babble sounds. Lexicality of target items was controlled by using words of variable lexical frequency, high- vs. low-frequency items, as well as pseudowords. The interaction between lexicality of target items and lexicality of words in background noise was controlled by creating babble sounds made of high- or low-frequency words. Results show that, as in silence, lexicality of target items plays a determinant role, high-frequency words being always more intelligible (70%) than low-frequency words (50%), or pseudowords (37%). Conversely, the frequency of lexical items present in the babble had an effect only on the comprehension of pseudowords, the latter being more intelligible in a background of low-frequency items. Together, these results give new precisions on the detailed informational masking effects occurring during speech-in-speech comprehension.