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Investigating the Effect of Synthetic Voice Naturalness on Gist Memory

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Abstract

As voice-AI technology becomes commonplace in today's world, speech synthesis technology is rapidly becoming more naturalistic. While previous studies investigated the intelligibility of synthetic speech, it is not clear how the naturalness of a synthetic voice affects listeners' memory of the meaning content of a spoken message. The present study investigates how listeners' memory of semantic gist is affected when participants are exposed to a naturalistic synthetic or a roboticized synthetic voice. Participants completed a Deese-Roediger-McDermott (DRM) task to assess recognition accuracy for semantically related word lists. The naturalistic and robotic synthetic exposure voices showed similar levels of recognition accuracy across conditions. However, both synthetic voices resulted in worse recognition accuracy compared to previous research on DRM tasks when the lists were read by human talkers. These findings inform the development of synthetic voices used in information delivery contexts and point to future directions for memory research with synthetic voices.