Examining the Role of Auditory Fluency in Participant’s JOL’s and Memory Performance


Background

Prior research has shown the sex of speakers and signal-to-noise ratio (SNR) of auditory streams affect perceptual fluency in multiple speaker tasks. Previously we investigated auditory fluency by asking participants to listen to two simultaneous, monaurally presented lectures. The sex of the target and masker speakers was manipulated, as were the levels of SNR (0dB, -3dB, -6dB). Participants were instructed to attend to the target and ignore the masker. After the lectures, participants provided judgments of learning (JOLs), workload, and effort ratings before a recognition test. We found that JOLs and recognition performance decreased, while workload/effort ratings increased from 0 to -6dB. The present study used the reverse SNR order (-6dB, -3dB, 0dB) to examine whether shifts in judgments and performance were due to different SNRs or fatigue effects.

Hypotheses

- **JOLs**
  - Higher when the target and masker were different sexes
  - 0db > -3db > -6db

- **Workload and Effort ratings**
  - Lower when target and masker were difference sexes
  - -6db > -3db > 0db

- **Recognition Performance**
  - 0db > -3db > -6db

Method

![Trial Process Diagram]

Instructions for Computer Task → 3 min lecture segment → JOLs, Effort, & Workload Ratings → Recognition Test

Repeat Last 3 Steps Twice

Results

The expected patterns for JOLs and workload/effort ratings were found, but were not significant. Recognition performance was highest at -6dB and lowest at 0dB. These recognition results were opposite of those found in the original study, suggesting fatigue played a role. By measuring task difficulty and effort we can begin to understand how auditory fluency affects JOLs and whether JOLs accurately predict memory performance.