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# The effect of the speaker sex on reaction time in auditory spatial directional tasks

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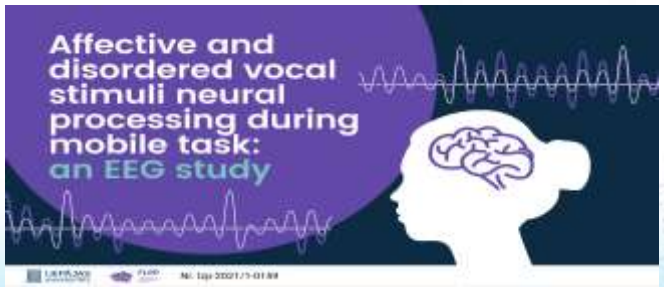


# INTRODUCTION

- **Voice sex differences**
  - Fundamental frequency average of 206 Hz for female voices and 120 Hz for male voices (Felippe, Grillo, & Grechi, 2006)
- **Communication speed and efficiency in various occupation fields**
  - Hotlines, emergency services, dispatchers
- **Gender stereotypes**
  - Stereotypes about male and female dominated occupational fields

# AIM

**The present study aimed to find out** whether voice sex differences can affect the performance of auditory spatial directional tasks.

Performance of participants was measured by:

- Reaction time
- Accuracy

# METHODS

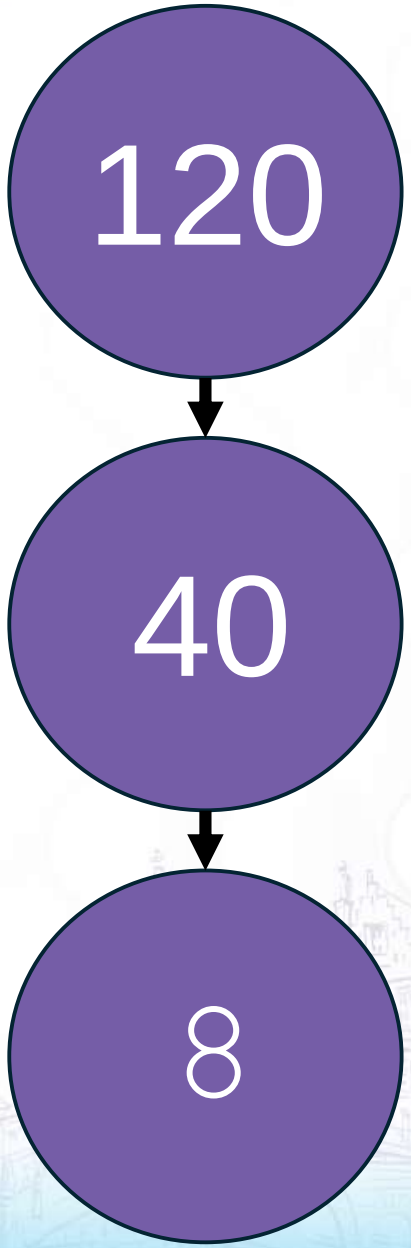
## Recording of voice samples

- Professional actors – 5 males, 5 females (N = 10)
- Average age: M = 26.6 y (SD = 4.9 y), F = 24.6 y (SD = 4.2 y)
- Four words (up, down, left, right)
- Each word – 3 times
- Voice samples (N = 120)

# Two-step voice samples selection process:

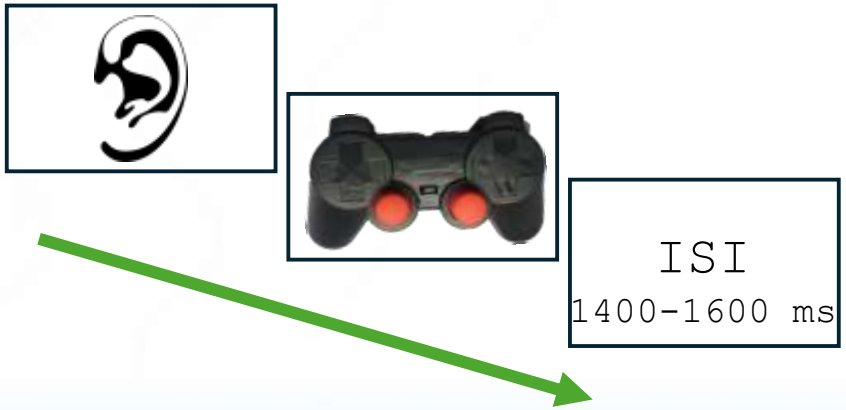
- The aim: to select the best quality samples
- Experts (N = 6)
- Average age = 44.3 y, SD = 13.7n y, range 21- 57 y

- The aim: to select the voice samples that best represent neutral quality
- Age-matched participants N = 32 (16 M, 16 F)
- Aged 18-59 y
- Without auditory impairment
- First language: Latvian

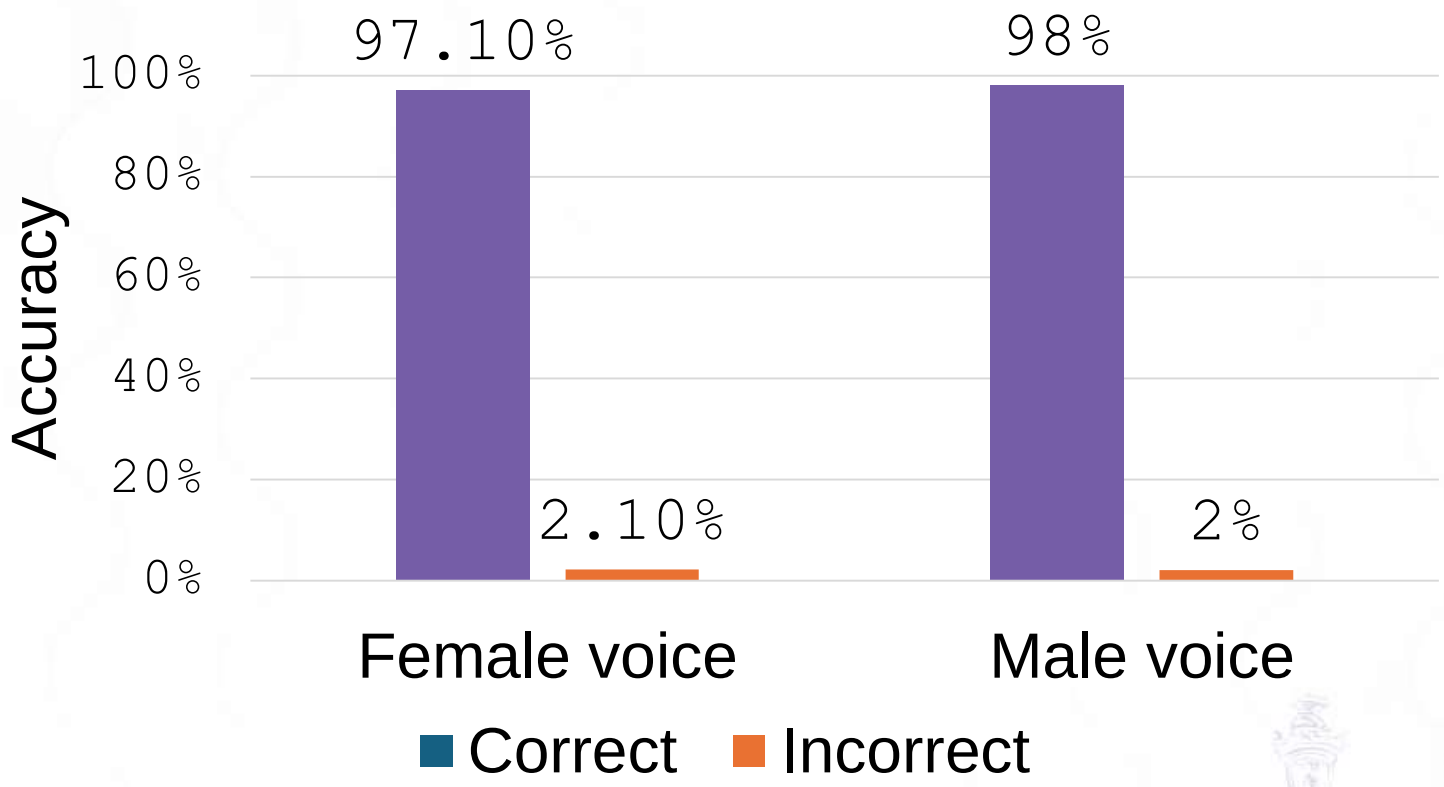


# Experiment

- Age-matched participants N = 42 (22 M, 20 F)
- Average age = 21.2 y, SD = 2.4 y
- Four instructions (up, down, right, left)
- Each heard 90 instructions
- Respond by operating a joystick

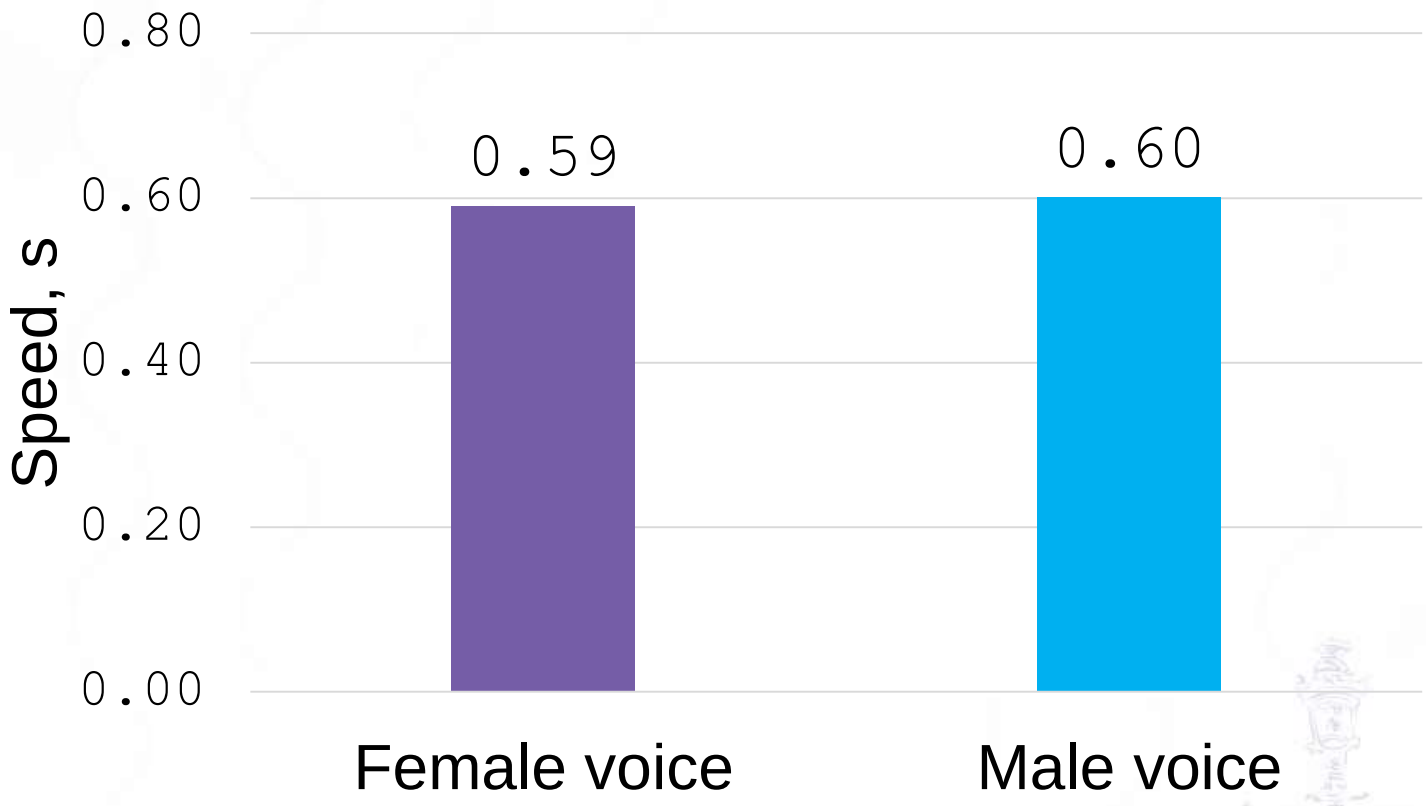



# RESULTS (I): ACCURACY




- There was **no significant difference** in task performance accuracy between instructions delivered in female and male voices, with an overall accuracy of 98%.

# RESULTS (II): REACTION TIME




- Statistical analysis **does not** reveal significant differences in the reaction time to spatial instructions spoken in females' and males' voices.

# RESULTS (II): REACTION TIME

- The instructions spoken in **male voices** elicited an average reaction time of 0.60 s (SD = 0.01 s)
- The instructions spoken in **female voices** elicited an average response time of 0.59 s (SD = 0.02 s)
- Statistical analysis **does not** reveal significant differences in the reaction time to spatial instructions spoken in females' and males' voices.

# CONCLUSIONS

- The speaker's sex **does not** affect the reaction time for auditory spatial directional tasks.
- The speaker's sex **does not** influence the performance accuracy of of auditory spatial directional tasks.
- In occupations where voice is a primary tool or a critical component of the work, both sexs demonstrate equal suitability.