What makes human-computer speech-interaction pleasant?

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Introduction

- Highly complex situations - such as driving - demand well-designed speech-interaction to lead to more safety and comfort.
- Especially older drivers who are reluctant to use new technologies might profit from a well-designed speech-interaction.

Research questions

1. Which voice frequency do older people prefer in context of speech-interactions?
2. Do older people prefer auditive confirmation-like feedback instead of none?
3. In which kind of situations do older people prefer speech-interactions most?

Methods

- Participants: N = 34 drivers; Age: > 65 years (Ø 72)
- Driving simulator study
- Between subjects design
- Independent Variables: Voice frequency, feedback, situation
- Dependent Variable: subjective rating

Results

1. Voice frequency

Effect of voice frequency
(\(F_{1, 33} = 5.162, p = .030, \eta^2 = .135\))

2. Feedback

Interaction of dialogue type and feedback
(\(F_{1, 33} = 4.230, p = .048, \eta^2 = .114\))

3. Favored assistance scenario

Parking spot assistance is favored; shopping assistance refused

Discussion

- Overall the results provide support for in-vehicle speech-interaction for older drivers.
- The lower voice is preferred by older drivers. The preference of feedback depends on the type of dialogue.
- The more unpredictable a situation is, the more speech-interaction support is preferred by older drivers.