The Triangle of Speech Comprehension in Older Age: Neuronal, Cognitive and Audiometric Contributions to Elementary Speech Processing

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Background

Peripheral Auditory

Central Auditory

Cognition
- Intelligence
- Working Memory
- Inhibition
- Attention

Peripheral Auditory

Central Auditory

Suprathereshold

Threshold

Frequency/Time

Low noise level

Intermediate noise level

High noise level

Original stimulus

50ms time reversed

500ms time reversed

(Saberi & Perrott, 1999)

Hypothesis

Sensory abilities
- Hearing threshold
- Frequency resolution
- Temporal resolution

Top-down
- Temporal restoration
- Noise filtering

Scaffolding

Confounds
- Intelligence
- Working Memory
- Inhibition
- Attention

Speech processing
- Word recognition

Experiment 1

• Audiometric Assessment
• Cognitive Testing
• sMRI & fMRI

Experiment 2

• Audiometric Assessment
• Cognitive Testing
• EEG

Methods

Project Overview

Subjects
- N = 40
- Age: 65+
- Normal hearing
- No severe cognitive deficits
- Native Swiss German Speakers
- Healthy
- No speech or language disorders

References


Contact

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