

Voice hallucinations in speech and sign: What can they tell us about language feedback loops?

*Objectives:* Data will be presented outlining the perceptual characteristics of voice-hallucinations in congenitally deaf people who use speech reading or British sign language. Secondly, a comparison will be made with the phenomenology reported by hearing hallucinators who are native English speakers.

*Design:* Adapted Q sort methodology used to sample subjective experience of how voice-hallucinations are perceived.

*Methods:* Data from 48 deaf and hearing people with schizophrenia was factor analysed to reveal latent phenomenological structure of both spoken and signed hallucinations.

*Results:* For deaf participants perceptual characteristics reported reflect individual experience with language and sensory input, and included auditory, speech reading and sign language hallucinations. Strikingly, hearing people with auditory hallucinations also reported concurrent visual imagery, which sometimes included visuomotor representations of speech and manual gestures, suggesting shared subvocal mechanisms.

*Conclusion:* This data throws new light on the phenomenology of voice hallucinations, suggesting that traditional focus on auditory aspects is too narrow. The finding that motor imagery underpins voice hallucinations in both the auditory-motor (speech) and visuomotor (sign) modalities gives new insight into: subvocal theories of hallucinations; articulatory representations of language and sensory feedback loops. By studying deaf hallucinators we obtain new perspectives on the organisation of language and thought, and a shift in thinking about voice-hallucinations in general.