

Conversation behaviour in daily life: the effects of situation, hearing loss, and hearing-aid use

ESRC DTP Collaborative Studentship

University of Nottingham and Sonova AG

Background and key research questions

People modify their verbal communication behaviour, dependent on the physical and social context, and on the sensory, cognitive and linguistic abilities they and their communication partners possess. Such phenomena have been the object of extensive laboratory study and theorizing in fields such as socio- and psycho-linguistics, but further theoretical progress is hampered by a lack of hard data on typical patterns of behaviour in daily life, and changes with real-life context. In this project we will examine behaviour in people with vs. without hearing loss, and in users vs. non-users of hearing aids.

People with hearing loss change their communication behaviour in various ways; avoiding social situations, partaking in them but not engaging, or engaging but failing to communicate satisfactorily. Such coping strategies will be reflected in conversational behaviour patterns at microscopic (momentary, in conversation) and macroscopic (lifestyle, in social engagement) timescales.

The key research questions for this project are thus:

- What constitutes 'normal' social interaction, in terms of number, duration, and type of conversations? And how does conversation behaviour vary depending on the auditory environment?
- Do people with untreated hearing loss show different patterns of social interaction, and are their coping strategies during conversation adaptive or maladaptive?
- Do people whose hearing loss is treated (via hearing aids) return to more 'normal' patterns of social interaction and conversation behaviour?

We will apply novel technologies to acquire objective data about people's daily-life conversation behaviour, examining metrics such as how many syllables the wearer has spoken in a given time interval, how many syllables have been spoken by others nearby, what sort of acoustical environment the wearer is in, and the relative levels of speech and background noise.

Methodology and techniques

An initial literature review will survey social interaction in normal-hearing and hearing-impaired adults, as well as the coping strategies those with hearing loss and their partners use in conversation. This will feed into a qualitative study in which people provide introspective and observational insights into conversation behaviour, both normal and abnormal.

In a brief laboratory study, the student will acquire competence in the measurement of verbal interaction, and chart the performance of the measurement technology under controlled conditions. This is essential preparatory work for the subsequent field study.

The field study will involve participants from three groups, recruited from an existing large volunteer pool within our university: normal-hearing, untreated hearing loss, and treated hearing loss (i.e. habitual hearing-aid wearers). Groups will be matched on key variables (likely to include age, gender, domestic and work status). Participants will be equipped and trained with the experimental apparatus, and then data will be collected while they engage in their normal daily routines. Variables potentially predictive of individual differences (e.g. personality, cognitive function) will also be assessed.

This project will generate novel descriptive data on important aspects of normative conversation behaviour, and correspondingly for groups with untreated and treated hearing loss. This could form a foundation for further research into communication behaviour in a variety of domains, for example voice disorders, autism spectrum disorder, second-language learning, and ageing. The insights arising from this work may also lead to improved hearing devices, as well as better service delivery and counselling models in hearing rehabilitation.

Student experience

The student will gain experience in the application of qualitative and quantitative methods, including the design, execution and analysis of a substantial field study. S/he will also acquire understanding of the potential and challenges in data collection using the newest technologies 'in the wild'.

The project will involve several study visits to the collaborating partner in Zurich, Switzerland, as well as interaction with colleagues in the collaborator organisation on an ongoing basis. Through this engagement, the student will gain insight into the commercial mindset which translates knowledge into products.

For the majority of the studentship duration, the student's home base will be at the Scottish Section of the Hearing Sciences group, in Glasgow, UK.