

RESEARCH PROJECT

Title: Speech masking effects in speech communication across the lifespan.

Website: <http://valeriehazan.com/wp/index.php/speech-masking-effects-in-speech-communication-across-the-lifespan/>

UCL Research Ethics Committee Approval ID Number: 0534/005

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INFORMATION FOR PARENTS/GUARDIANS

We would like to invite your child to participate in a research project, which investigates how speech communication is affected by the presence of other voices or environmental noises. Your child should only participate if he/she wants to; choosing not to take part will not disadvantage you or your child in any way. Before you decide whether you want your child to take part, it is important for you to read the following information carefully and discuss it with the researchers if you wish. Please ask us if anything is not clear or if you would like more information.

Purpose of project: Our ability to communicate successfully with others can be strongly affected by the presence of noise and other voices in the environment, and children and older adults can be more greatly affected than young adults in these situations. Some of the disruption is due to the fact that the speech we are listening to can be masked by other sounds; if the disrupting sound can be understood (e.g., another person speaking), this can cause further difficulty. Previous work suggests that interfering sounds that can be understood causes relatively more disruption for children and older adults than for young adults but these findings are based on laboratory tests that are far from realistic communication. The aim of the study is to investigate these

interference effects across the lifespan using communicative tasks that better reflect real-life experience.

Participants: We are looking to recruit young people between the ages of 14-16 years. Because we are examining the development of speech and language processing, we are not able to include participants who have had persistent hearing problems in childhood, speech and language therapy or have any neurological, medical or learning difficulties (e.g. epilepsy, ADHD, autism spectrum disorders, speech and language impairments, dyslexia or dyspraxia) as these are factors which might influence the results in ways which we do not fully understand yet. However, there often are research projects at UCL recruiting people who have some of these conditions, and if you are interested, we would be happy to put you in touch with our colleagues

Growing up bilingual or multilingual may also affect performance on the tasks we are running. If your child grew up speaking more than one language from birth, this study is not suitable (feel free to discuss this with us if you are unsure). Again, although we cannot include bilinguals in this study, we may be running future projects with this population and we have colleagues in our department who are interested in bilingualism, so do feel free to contact us.

Description of test sessions

Study 1: Communication efficiency across the lifespan

Duration: The study consists of approximately 45 minutes of background tests and two hours (incl. breaks) of communicative tasks that could be run on separate days or in the same day in the morning and afternoon. All testing will be done at the Speech Sciences Research Lab at Chandler House (2 Wakefield Street, WC1N 1PF).

Background tests: We will collect information on your child's: (a) hearing thresholds (b) word and sentence understanding in quiet and background noise (c) other cognitive abilities (ability to hold new information in memory and expressive language skills). You will also be asked to complete two questionnaires about your child's health, language background and everyday hearing ability on your child's behalf.

Communicative tasks: Your child will carry out up to ten short (10 minutes each) 'spot the difference' picture task ('diapix') with another child participant of the same age. These are coloured hand-drawn pictures of simple scenes (beach, farm or street scenes). We ask your child to discuss the differences between two pictures without seeing the other speaker's picture, and their task will be to work together to find the twelve differences between the pictures. This diapix task has successfully been used with adults and children aged 9+. A researcher will be monitoring the recordings via headphones.

We will audiorecord both children while they are carrying out these tasks in separate sound-treated rooms; both children will also wear headsets and communicate with each other via microphones. Communicative tasks will be carried out in different listening conditions in some conditions, your child will hear his/her conversational partner normally. In others, your child will hear other sounds in the background such as another voice or noise.

Study 2: Ecological validity of laboratory-based evaluations.

After completing Study 1, we invite your child to participate in a study that will record how easy or difficult it is to understand speech in everyday listening situations. We will use an experiential sampling methodology (ESM) using an app running on a mobile phone. ESM involves your child getting a prompt on their smartphone at which point he/she will have to enter short information on the listening environment he/she is in and a rating of how difficult he/she is finding it to communicate.

Duration: Data will be collected around 5-7 times daily over a period of 2 weeks (with the constraint that it does not take place in teaching hours).

Measurements: Your child will receive an alarm signal on his/her smartphone/device and he/she will be asked to respond by rating the perceived communicative effort and providing brief information on the current environment (e.g., noisy environment outdoors, at home with family).

General information: Every care will be taken to avoid any discomfort to your child. The headphones are comfortable to wear; the recording studios are light and airy, and air-conditioned. The only potential risk is the accidental presentation of uncomfortably loud sounds, but the presentation levels through the headphones will be carefully checked by the researcher before each part of the study.

Please note that the audio recordings will only be identified by a code and number so that the name of your child will not be linked to any of the recordings. The recordings will be used for research purposes only. As this set of recordings will be very valuable for different kinds of research, you and your child will be asked permission to make these anonymised recordings available to researchers at other universities. Your child can still participate even if you do not give permission for further use.

It is up to you to decide whether or not you want your child to take part. If you decide to take part, you will be given this information sheet to keep and you and your child will be asked to sign consent forms. If you decide to take part, your child is free to withdraw at any time before or during the recording session, without giving a reason.

Thank you for your participation.

Further information:

The study takes place in Chandler House, 2 Wakefield Street, London WC1N 1PF. Chandler House is within easy access from both King's Cross and Russell Square stations.

