The impact of language experience on face processing in bilingual and monolingual adults

Early language experience can shape how we attend to and process talking faces during communication. For instance, when decoding audiovisual speech, bilingual infants show a looking bias towards the mouth over the eyes compared to monolingual infants. Bilingualism may also impact perceptual organization and hemispheric lateralization for faces in non-linguistic domains, such as face discrimination. However, the influence of language experience on face scanning patterns is highly variable and the impact on face processing strategies in adulthood remains unclear.

In this talk I will describe a current project where we employed eye-tracking and a deep-learning image-classification approach to examine face scanning patterns of monolingual and bilingual adults. I will present preliminary findings that bilingual participants show a looking preference for the left eye and left half of a centrally presented face compared to monolinguals. These findings could suggest that early exposure to more than one spoken language enhances right-hemispheric specialization for face processing in adulthood. Our latest studies are extending this work to people who are bilingual in British Sign Language and spoken English to determine the impact of visual linguistic experience on face processing.

Secondly, I will outline a behavourial experiment examining dynamic audio-visual emotion perception in spoken-language bilingual and monolingual participants. Our initial analyses suggest that, in ambiguous (incongruent) conditions, the visual signal provides the most reliable source of information for bilinguals during audio-visual emotion perception, whereas the auditory signal provides the most reliable source of information for monolingual participants. This suggests that early exposure to more than one spoken language can affect the way we utilize auditory and visual information from the speaker during social communication in adulthood.

Bio:

Carly is an Independent Research Fellow funded by Wellcome and hosted by Prof Mairéad MacSweeney at the University College London, Institute of Cognitive Neuroscience and the Deafness, Cognition and Language Research Centre. Carly is also a visiting research fellow at UBC and was hosted by Prof Jason Barton at The Human Vision and Eye Movement Research Lab in the Department of Ophthalmology and Visual Sciences, July 2021 – October 2022.

Carly was awarded her PhD in Clinical Neuroscience at the University of Nottingham, UK, where she conducted a longitudinal study of audio-visual cortical plasticity in deaf adults with cochlear implants using fNIRS (functional near-infrared spectroscopy). Carly later worked as a post-doctoral researcher at Archie's Cochlear Implant Lab at the Hospital for Sick Children in Toronto, where she used EEG (electroencephalography) to understand cortical auditory development in deaf children with cochlear implants.