

Project title: Mechanisms of language control underlying bilingual speech production: fMRI investigation

How does our brain handle two (or more) languages? Why do we forget our native language even after a short stay abroad? How does the mind choose the right language, when the same thought could just as well be expressed in any other language that we know?

These are only some of the questions that motivate our research project. Our aim is to better understand how the bilingual mind copes with competing languages. In the experiments, we will ask native speakers of Polish who also know English to name pictures in both languages. The language of naming will change from time to time, which will allow us to capture and describe the mechanisms that help us use a foreign language. We will test how accurately and quickly the participants name the pictures and, by using functional magnetic resonance imaging (fMRI), we will examine what happens in their brains while they perform a given task. Thanks to employing the state-of-the-art analytic techniques (e.g. MVPA), we will be able to trace even subtle changes as participants adapt to the constantly changing task.

The project will enable us to refine and advance theories of bilingual language processing. By looking at which brain areas get engaged as bilinguals produce speech, we will overcome limitations of previous research, which investigated pure behavior or electrophysiological activity of the brain. Our research will help us better understand bilingualism, as well as the abilities of human brain to adapt in a constantly changing situation. In a longer run, the outcomes of this and similar research projects should have implications for understanding challenges and benefits of bilingualism and inform second language education and clinical practice pertaining to bilingual individuals.