

## **1. Research project objectives/ Research hypothesis**

The primary goals of the project are to gather data on phonetic variation in Polish as a function of prosodic conditions, and to test previous competing theoretical proposals concerning prosodically-conditioned segmental behaviour.

On the basis of experiments with other languages, we hypothesise that the phonetic realisation of segments is determined by prosodic conditioning in Polish. However, a number of competing theories have been put forward over the years, which predict different scenarios of prosodic influence on segments, including, among others, polarisation and feature enhancement. Our project will be based on carefully planned experiments designed to re-assess the validity of these hypotheses.

An additional aim is to provide acoustic evidence bearing on the structure of the prosodic hierarchy in Polish, which, to date, is largely absent from published experimental work.

## **2. Research project methodology**

The primary method of investigation in our project will be acoustic analysis of high-quality recordings of carefully controlled speech data. The first step is to create data sets that allow for meaningful comparisons of different prosodic parameters. The behaviour of segmental material at the left edge of prosodic domains will be investigated. The prosodic factors subject to controlled variation will be prosodic position and accentual prominence. Acoustic parameters to be measured include: Voice Onset Time (VOT), stop closure duration, vowel duration, fundamental frequency (f0), intensity, spectral center of gravity, and vowel formant frequencies (F1, F2). Statistical tests will be performed with the help of R (R Development Core Team 2015), so data collected in the project will be subject to the type of rigorous statistical verification that is required in high-level publications.

## **3. Expected impact of the research project on the development of science, civilization and society**

From a general perspective, new experimental data will broaden our knowledge of Polish phonetics, which is of particular importance, since many descriptions of the language are either impressionistic in nature or are simply not up-to-date.

The greatest value of the present project is shedding light on the segment-prosody interface, still largely unknown. To be more precise, gathering data will contribute to an understanding of how segments are modulated in response to prosodic conditioning.

Moreover, based on prosodically-induced modulations of particular segments, an attempt will be made at distinguishing prosodic domains and, subsequently, at outlining a hierarchical structure, into which the domains are organised, i.e. the “Prosodic Hierarchy” of Polish.