

The project's objective is to study the perception and production of rhythmic stress in Polish and Ukrainian in a series of carefully designed experiments using methods from acoustic phonetics and psycholinguistics. The questions addressed in the project centre around two broad issues:

- How does the acoustic realisation of rhythmic stress correlate with segmental elasticity, vowel quality and position within a sentence (focus vs. non-focus, initial vs. final)?
- Is the presence of rhythmic beats in the acoustic signal relevant from the perspective of the perceptual system and does rhythmic stress play a role in language processing?

The rapidly growing body of literature demonstrates that a deeper understanding of the nature of prosodic phenomena is not possible without the study of the fine-grained acoustic detail and its impact on the perceptual system. Both the acoustic realisation of stress in different sentence contexts, as well as the perceptual underpinnings of linguistic rhythm are at the forefront of the current linguistic research. Nevertheless, these issues have not as yet been addressed in the studies of Polish or Ukrainian. The present project aims to fill these gaps.

The acoustic characteristics of rhythmic stress in accented and unaccented contexts (focus/non-focus positions) as well as at sentence boundaries will be studied both in terms of classical methods used in investigating stress and will include measurements of vowel and consonant parameters (formant structure, duration, fundamental frequency, intensity, duration) in different prosodic contexts. The perception of rhythmic stress will be investigated by assessing immediate behavioural responses employing reaction times (RTs).

The current research project bears on several important issues in phonetics, phonology and typology of prosodic systems. The in-depth study of the phonetic detail underlying the expression of metrical prominence is expected to bring about a deeper understanding of the complex interaction of prosody with segmental structure and to provide a solid basis for further theoretical modelling of metrical systems. The project seeks to answer several fundamental questions: (i) are prominence effects expressed in terms of uniform acoustic cues, regardless of the prosodic context, (ii) are the theories designed to account for the phonetic mapping of phonological categories empirically adequate, and (iii) does the presence of additional rhythmic beat facilitate grammatical processing? Thus, it has both empirical and theoretical significance.