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Phonotactics is a branch of phonology which specifies restrictions on the co-occurrence of segments in a particular language. One of linguistic universals states that the majority of world languages disallow sequences of several adjacent consonants, the so-called clusters, in words and syllables. Since a consonant + vowel structure is most preferred across linguistic systems, the study of languages which permit clusters becomes critical to phonological theory and typological classification. Polish, for example, permits combinations of four consonants word-initially (/strf/ in *strwoni* 'spend'), and five word-finally (/mpstf/ in *przest pstw* 'crime – inflected'). Such complex clusters occur, among others, in Slavic and Germanic languages.

The objective of this project is to create an interdisciplinary research team composed of experts in phonology. Their cooperation will allow for an analysis of word-initial consonant clusters in several linguistic systems; Polish, Russian, English and German. On the basis of an innovative method of cluster analysis, which accounts for a wider range of criteria than those used in other models, new phonotactic preferences will be formulated for each language. For instance, a pilot study suggests that Polish phonotactics is based on the place of articulation features, while German on the manner of articulation features. Preferences will be tested in three experimental sessions on perception and production of clusters by adult native speakers of the aforementioned languages.

One of the measurable advantages of the project will be the development of a new tool for the analysis of consonant clusters. This model is an original and sound proposal that can not only compete with the existing approaches to phonotactic analysis, but also serve as their extension. The impact of the proposal is considered to have a cutting-edge character, providing a plausible way of dealing with abundance of data coming from phonotactically complex languages, which phonological theory has not been able to cope with. The project is interdisciplinary in nature; it combines several branches of linguistics, namely phonetics, phonology, morphology, corpus linguistics, and typological classification. The final results will be relevant for Polish and world science by being applicable in a wide-range of scientific areas, such as language teaching and learning, speech pathology, or morphological parsing. These aspects are of interest not only to researchers but also to teachers and therapists.