

Despite its importance as one of the world's major languages, Arabic has not been the topic of much phonetic research. This project aims to contribute to the description and analysis of Arabic by focusing on one of its unique features - emphasis. Emphasis is a distinctive feature of Semitic languages such as Arabic and Hebrew that refers to a group of consonants produced with a secondary constriction in the posterior vocal tract and a primary constriction typically in the dental/alveolar region. The characteristics of emphasis are not confined to emphatic consonants themselves but can spread to adjacent segments as well. Supported by the National Science Foundation, Dr. Allard Jongman will conduct a detailed acoustic and perceptual investigation of emphasis. Acoustic analysis will include a variety of measurements of both consonants and vowels. Perception experiments will then evaluate the relative contribution of the emphatic consonant and adjacent vowels to the perception of emphasis. This research will document and enhance an understanding of the sound structure of Arabic. This project will examine a sizeable number of stimuli produced by a number of different speakers, thereby allowing for an assessment of differences in gender and dialect. In addition, the symmetrical or asymmetrical nature of the spread, the extent to which it diminishes as the distance from the emphatic increases, and the characteristics of potential blocking segments will have significant implications for phonological theory.

This research will enable linguists to test hypotheses on many aspects of the sound structure of Arabic in addition to emphasis, with the complete set of audio recordings from the project available through a web-based database. These data can also be used by Arabic language teachers to develop teaching materials that provide detailed information about unique aspects of the Arabic language. The broader impact of this project includes opportunities for undergraduate and graduate students to participate in linguistic research. This research will also be the start of a collaboration with several universities in Jordan. As such, this project will foster international cooperation, with the hope that this collaboration will eventually develop into a partnership, an exchange between faculty and students, and ultimately contribute to better cultural understanding.