**Intonation in Individuals with Normal Hearing and Cochlear Implant Users**

Cochlear implants have a positive influence on language development and improve speech intelligibility. On the other hand, problems in the perception and production of correct prosody are still observed among the cochlear implant users (Most ve Peled, 2007; Moreno-Tores ve Moruna-Lopez, 2014). For instance, although F0 is the main cue of intonation, cochlear implant users rely more on other acoustic parameters -such as duration and intensity- than on F0 for the perception of intonational contrasts (O'Halpin, 2010). In production however, they do use F0 to mark narrow focus (i.e. to highlight a specific words in a sentence) by e.g., producing specific pitch accents on the focused constituent (Holt, 2013).

In Turkish, the language under investigation here, focused words are characterized by longer duration and greater intensity. Moreover, global adjustments at F0 level are found for focused words, since speakers with normal hearing use compression of pitch range after the focused word (Ipek, 2011). However, there are no studies yet on the phonetic realization of focus in Turkish speakers with hearing impairment.

The aim of this study is to identify which acoustic parameters are used for the production of narrow focus by Turkish speakers with normal hearing and hearing loss in a comparative perspective.

Ten Turkish-speaking university students with normal hearing and ten Turkish-speaking university students with hearing impairment between the ages of 18-25 participated in the study. The participants in the second group fulfilled the following criteria: a) having the hearing loss prelingually (i.e., diagnosed as hearing loss before the age of three), b) using spoken language as primary mode of communication, c) not having additional disabilities.

Speech data from both groups will be gathered with an interactive game, in which the participant and the experimenter ask and answer –"who" and "what"- questions reciprocally. For the "what" questions to be asked, the object parts of the pictures are omitted. For the "who" questions to be asked, the heads of the characters are omitted. The pictures are going to be simultaneously presented to the participant and the experimenter on two different computer screens. While the whole pictures are presented on one screen, the pictures with missing head or object parts are presented on the other screen. The one who sees the incomplete picture asks the question and the other one, who sees the whole picture, is expected to answer.

After gathering the audio recordings of the participants, we will use Praat program to label the words which should be focused. In the analysis of the ongoing study we will examine the following parameters: pitch, duration and intensity of focused word.

The present study is expected to show how the individuals with cochlear implant realize the focus in Turkish. Clinicians can also benefit from the results of this study during the diagnosis of prosodic problems and the development of therapy programs.

## References


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