Developing a Korean Speech DB for Forensic Speaker Identification

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This project of developing a large scale database of Korean is a forensic phonetic study at Supreme Prosecutor’s Office of Korea (SPO). The study has started in 2014 with the title of "Collecting Korean speech DB and developing automatic voice recognition system for forensic speaker identification". The forensic phonetic team of SPO deals with recording evidences across the South Korea, and there is a growing number of criminal cases involving recorded sample of speech for speaker identification such as fraud, identity theft, and bomb threat. This study aims to improve the reliability of forensic phonetic tasks including forensic speaker identification and speaker profiling.

Previous studies of collecting Korean DB which were performed by some national institutes and universities mainly focused on the speech of Seoulites aged 20-30, and the number of speakers is small less than 50 speakers. So there is a limit of using these database for forensic speaker identification. So there is a need to develop speech corpus for standard Korean which are representative and well balanced with regard to gender, age, and regions.

In this study, nine regional dialects were categorized according to the administrative districts including the Metropolitan area. And both male and female speakers are included and five age groups were established from their 20s to 60s. The number of speakers of each group of gender, age, and dialects was demographically balanced. The protocol to collect speech samples was developed for phonetic studies, sociolinguistics, and automatic speaker recognition as well as forensic phonetics. A person’s way of speaking changes with speech styles, so the protocol includes various speaking tasks. Each speaker performs five tasks: reading sentences, reading passages, semi-spontaneous speech of filling parentheses, semi-spontaneous with vowels, and spontaneous speech.

As a result of the 1st year of the project, recording of 640 speakers were collected and the recording of 2nd year is ongoing. Among the speakers, a subset of 100 speakers is participating in the recording every 3 months to investigate within speaker variation because forensic phoneticians usually analyze speech samples recorded in different times. This paper will introduce the methods and structure of Korean database, and ongoing research of the 2nd year.

References