

Acoustic Analysis for Comparison and Identification of Normal and Disguised Speech of Individuals

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Abstract : Although the rapid development of forensic speaker recognition technology has been conducted, there are still many problems to be solved. The biggest problem arises when the cases involving disguised voice samples come across for the purpose of examination and identification. Such type of voice samples of anonymous callers is frequently encountered in crimes involving kidnapping, blackmailing, hoax extortion and many more, where the speaker makes a deliberate effort to manipulate their natural voice in order to conceal their identity due to the fear of being caught. Voice disguise causes serious damage to the natural vocal parameters of the speakers and thus complicates the process of identification. The sole objective of this doctoral project is to find out the possibility of rendering definite opinions in cases involving disguised speech by experimentally determining the effects of different disguise forms on personal identification and percentage rate of speaker recognition for various voice disguise techniques such as raised pitch, lower pitch, increased nasality, covering the mouth, constricting tract, obstacle in mouth etc by analyzing and comparing the amount of phonetic and acoustic variation in of artificial (disguised) and natural sample of an individual, by auditory as well as spectrographic analysis.

Keywords : forensic, speaker recognition, voice, speech, disguise, identification

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