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**Sinhala Phonetics and Phonology:
An Acoustic Analysis**

By

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ABSTRACT

The research in this thesis is based on acoustic analysis of Spoken Sinhala Phonetics and Phonology. At the initial stages of the study, existence diphones of Sinhala language has been identified. Secondly these diphones were implemented through the spectrograms and then the acoustic features of Sinhala vowels and consonants were identified. The frontness and backness, the height, the duration of long and short vowels were recognized.

Through this study, it was acoustically proved a diphthong is not a sequence of two monophthongs and also does not have components which are identifiable as particular monophthongs.

Finally, some strange features of Sinhala consonants can be find out by this acoustic analysis. One is the slight voicing of voiceless stops. Then the existence of a series of pre-nasalized voiced stops in contrast with nasal-stop clusters. And highly and weakly aspirated consonants, less harmonic consonants also identified.

The preliminary investigations of spoken Sinhala vowels and consonants detection provide indications that these acoustic properties are useful to develop, analyze and evaluate TTS systems. Speech Therapists, Second language teachers, deaf community also can be benefited through this study.

Keywords:

acoustic analysis, spectrograms, duration, voicing, nasal phase, TTS systems