

ABSTRACT

A Comparison between the Speech of Brass-coiled Necked and Non-brass-coiled Necked Kayan Speakers: An Acoustic Study

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The Kayan (Padaung, Long-necked Karen) can be found in the province of Mae Hong Son, northern Thailand. The estimated size of the population is 500-2,800. Kayan phonology was analysed by Sirinya Khammuang (1998) and Manson (2007). However, an acoustic study of Kayan speech has never been done before.

The objectives of our research are to analyse the acoustic characteristics of the Kayan plosives (VOT / laryngeal timing), vowel quality and length (F1, F2 and duration), tones and their length (F0 and the duration of voiced segments bearing F0); and to compare the acoustic findings from three groups of speakers to see whether there has been any effect of the brass coils on the speech production of the female speakers who have worn brass coils around their necks for many years.

In sum, normal F0 and VOT values indicate that female speakers with brass coils can control their intrinsic laryngeal muscles well. The F1 values of the high vowels suggest that they have some difficulty in moving their tongues vertically. Tongue movements are controlled by the extrinsic muscles of the tongue connected to the palate and the hyoid bone. The results of wearing heavy brass coils are: the mandible is constantly pushed up; the shoulders and the upper areas of the rib cage are pressed down; there has been atrophy of the shoulder muscles; the extrinsic muscles that are involved in larynx, neck and tongue movements have been affected. The decreased space of the upper thoracic cavity can affect breathing when speaking is modified breathing. However, compensation for the deformity is possible due to a synchronisation of the speech organs and muscles. To obtain solid answers, detailed physiological studies are needed, especially a longitudinal study.