

The Mid Central Vowel [ə] in Thai

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This paper investigates the first two formants of the Thai vowels in both citation and speech forms of a native male speaker. The speech data is obtained from a telephone recording. The degree of vowel centralization in speech is demonstrated and a discussion pertaining to the role of the mid central vowel [ə] in the Thai vowel system is given.

1. Introduction

Thai is known to have nine contrastive vowels with short and long distinctions. The vowels are traditionally labeled with High, Mid, Low height-distinction together with Front, Central or Back Unrounded, and Back (Rounded) distinction. The vowel system has been characterized by linguists of the American school as /i, i or y, u, e, ə, o, ε or æ, a, ɔ/ (Abramson 1962, Haas 1964, Noss 1964, Gedney 1972, Sarawit 1977, etc.), and by those of the British school as /i, ʊ, u, e, ʏ or ə, o, ε, a, ɔ/ (Henderson 1975, Jones in Grieson 1928, etc.) The latter set with /ʏ/ is used by Tingsabadh and Abramson (1993) to describe Modern Thai. Interestingly, Henderson (1975) suggested /u/ and /ʏ/ being phonetically back unrounded vowels against central vowels /i/ and /ə/ and [ə] as the bypassing vowel in multiple vowel nuclei. However, Henderson (1976), in disclosing Daniel Jones's description of Thai vowels (cf. Grieson 1928), noted /u/ and /ə/ without /ʏ/, with both /æ/ and /ε/ for the low front vowel, and [I, U, ə] for /i, u, a/ in diphthongs. The choices of these symbols are impressionistic for some whereas for others, they are the result of an acoustic analysis.

The vowel which is in focus of this study is the so-called 'mid central vowel' or sometimes called 'mid back unrounded vowel', /ə/ in one description and /ʏ/ in another. The phonetic [ə] or [ʌ] is also known as the reduced vowel of /a/ in unstressed syllables (Henderson 1975, Luangthongkum 1977, etc., also implied

by Tingsabadh and Abramson 1993). Moreover, the phonetic [ə] has been claimed to be the reduced vowel of non-high vowels in unstressed CVC syllables with high vowels reducing to their lax counterparts (Tumtavitikul 1994). Lax high vowels [ɪ, ɨ, u] were earlier noted as allophones of /i, ɪ, u/ in diphthongs by Sarawit (1977).

Specifically, our inquiries of the Thai vowel system concern first, the quality of this so-called 'mid central vowel' and its relative position in the acoustic vowel space within the Thai system. Second, whether or not there is a phonemic vowel /ə/ of the [ə] quality at the center of the vowel space in Thai, and third, the relationship this 'mid central vowel' /ə/ has with other vowels in unstressed syllables.

2. Thai Vowels: Citation vs. Speech Form

The phonetic schwa [ə] is taken to be the 'indeterminate' vowel of the rest position in English, being the reduced vowel with no phonemic status. It is also used to characterize the reduced vowel of many other languages. The phonemic mid central vowels in English are given the symbols /ɜ/ and /ʌ/ (Clark and Yallop 1995, Ladefoged 1993). In the 1993 IPA vowel chart, [ə] is given no specific location in the vowel diagram but is at its center surrounded by four symbols for mid central vowels; /ɜ, ɐ/ for the close and open mid central unrounded vowel respectively, and /θ, ɐ̃/ for the mid central rounded ones (fig. 1).

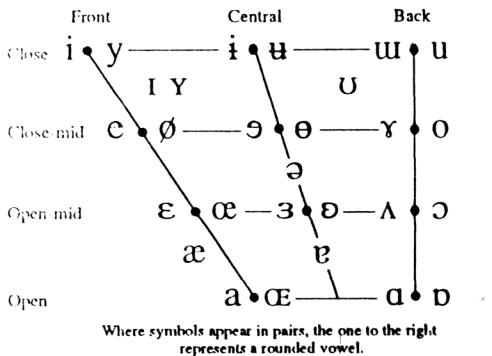


Figure 1. The vowel chart of the International Phonetic Association (IPA), 1993.

With the IPA chart and the role of [ə] as the 'default' vowel of the articulatory rest position underlying this study, we investigate the first and second formants of the Thai vowels in both citation and speech forms of an educated male speaker (S), using a Kay Elemetrics CSL 4300 analyzer. The speech data was obtained from a telephone recording. The citation vowels were each recorded in isolated form, long and short, with mid tone, 5 tokens for each vowel. To assure that the data are good representatives of modern Thai, S's citation vowels are compared with the citation vowels obtained from other five educated male speakers, (whose data were partly collected in co-operation with Siriphan Sriwanyong at Mahidol University). The result shows S's vowels very comparable to those of the average five males (fig. 2, tbls. 1 & 2). Especially, the mid central vowel /ə/, S's is very close to that of the average five males. Only his high and low central vowels /i/ and /a/ differ somewhat from other males in the F1 values.

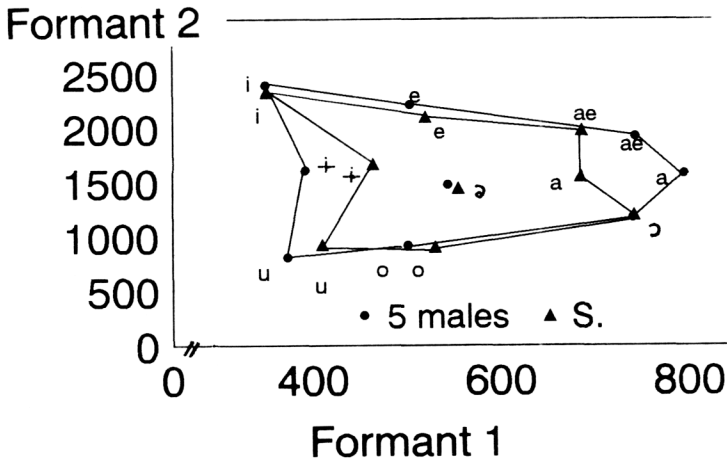


Figure 2. Citation vowels: S's vs. average five males

2.1 The position of /ə/ in the acoustic vowel space

Charting S's citation vowels in an acoustic quadrilateral with the central line drawn (fig. 3a), /ə/ is found to fall right behind the central line in the mid-height region whereas /i/ and /a/ fall close on the line. However, if the quadrilateral is divided up into three regions for front, central, and back vowels (fig. 3b), /ə/ falls within the mid central region. Thus, it seems the phonetic description of /ə/ can be either mid central or mid back unrounded vowel, depending on how the vowel quadrilateral is divided up in the acoustic space.

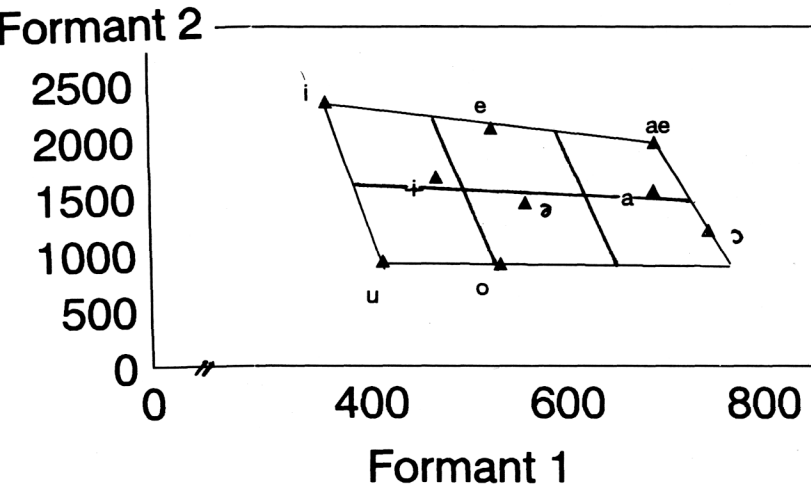


Figure 3a. S's vowels with /ə/ right behind the central line in the mid region.

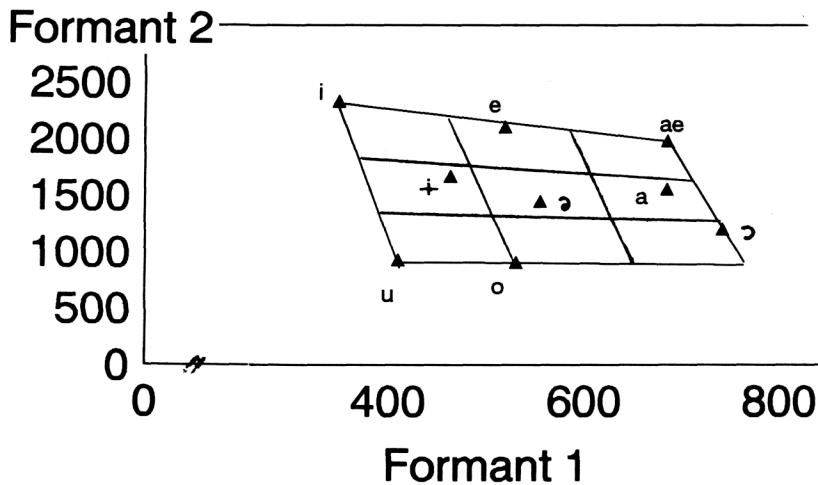


Figure 3b. S's vowels with /ə/ in the mid central region.