

## PATTERNS OF ASSIMILATION OF IGBO VOWELS : AN ACOUSTIC ACCOUNT

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Igbo, a new Benue Congo language has a vowel harmony system which, like that of Akan, is based on the pharynx size or tongue root position. In this study we examine Igbo vowel harmony with particular reference to assimilatory patterns of vowels in different harmony sets. This is to gain some insight into the factors involved in Igbo vowel assimilation, and to establish to what extent reports on Akan vowel assimilation are validated in Igbo.

Tokens of the eight phonemic vowels of Standard Igbo are recorded from three native speakers of Igbo. The vowels are acoustically investigated (using the LPC analysis of CSL) in individual lexical items and within carefully designed carrier phrases. The F1 and F2 values of the vowels are obtained as these formant values are generally useful in establishing the salient characteristics of vowels. Vowels from the harmony sets are juxtaposed in the carrier phrases to ascertain the extent of assimilation.

Results of the investigation show that the F1 values, to a large extent, are enough to characterize these vowels. The (-Expanded) vowels have higher F1 values than their (+Expanded) counterpart. Where there is an overlap in F1 values for some vowels the F1 bandwidth values serve to distinguish between the vowels. The overlap often reported in Akan for /i/ and /e/ on the one hand and /ɨ/ and /o/ on the other is not validated in Igbo. While the F1 values for these pairs of vowels are quite similar for one of our speakers, there is an appreciable difference between the F1 values of these vowels for the other two speakers. There is however an overlap for /e/ and /o/ for one of the speakers.

Assimilations are generally regressive across word boundaries. It is, however, necessary to point out that the general perceptual impression that one of the vowels completely assimilates to the other, is not borne out by our investigation. Most of our F1 and F2 values for the vowels in individual lexical items are altered in assimilations. This then suggests that assimilation involving these vowels is partial rather than complete. The emerging 'allophones' are acoustically similar to the (+Expanded) vowel involved in the assimilation, that is when vowels from different harmony sets are involved.

We conclude that while assimilation of Igbo vowels involves some phonological considerations, phonetic factors appear to be permanent in deciding the final form of the vowels.