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Phonetics
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Project 2
Narrow transcription and commentary of an African speaker's production of citation forms in Akwapen

Introduction

In the process of conducting this project, an African male speaker's production of twenty one citation forms in "Akan" was taped. As reported by the subject, "Akan" is the name of the people of Ghana. The generic term for "Akan" is "Twi", which is the dialect spoken in the eastern, central, and western Ghana.

Historical Background

According to the subject, "Twi" belongs to the Niger-Kordofanian language family and has approximately 6.5 million speakers. Interestingly, the subject also informed that "Twi" has four variants, namely "Fante," "Asante," "Akwapen," and "Akyen". The data collected for transcription and analysis is representative of "Akwapen".

In the late nineteenth century, a prominent German Linguist "J. G. Chrysteller" presented, for the first time in the linguistic history of Ghana, written forms of "Twi". Later the Missionaries documented the Bible in "Akwapen". The Bible was then translated and a dictionary of the four variants was compiled.

The subject commented on "Akwapen" and said that it is a tonal language. That is to say, native Ghanaian speakers vary their tone to bring about variation in meaning. For example,

[od a] "fire"
[od a] "he left"

Citation Forms

A list of eleven kinship terms and ten natural elements was prepared for this project. The subject pronounced them in "Akwapen" in citation forms. This was done to ensure accuracy and to preclude any possible changes in stress patterns. The following is the subject's productions of twenty one "Akwapen" words:

	Akwapen	English
Kinship Terms		
1.	['☜■✌ ☸	"mother"
2.	[🕯☜♎☪✌ ☸	"father"
3.	☯■ ◆♋🕯♌⚐❒♓❍✌☸	"brother"
4.	☯■ ◆✌🕯♌✋⚐ ☸	"sister"
5.	☯🕯☒☐↗✌☸	"mother's brother"
6.	☯♦☜🕯⬥✌ ☸	"aunt"
7.	☯🕯☜♎☪✌🕯&✞❍✌ ☸	"father's younger brother"
8.	☯🕯☜♎☪✌🕯◘♏✋☠☸	"father's older brother"
9.	☯🕯☜■♋🕯&✞❍♋ ☸	"mother's younger sister"
10.	☯🕯☜■✌🕯◘♏✋☠☸	"mother's older sister"
11.	☯☐⬥↗✌🕯♦☜ ☸	"nephew"
Natural Elements		
12.	☯■♦🕯♐◆ ☸	"water"
13.	☯🕯☐♎☪✌ ☸	"fire"
14.	☯✞❍🕯↗❒✌❍♋ ☸	"wind"
15.	☯🕯☐♌☐ ☸	"stone"
16.	☯🕯◘ ☐☸	"sea"
17.	☯⚐♦✞🕯♌⚐■◆✋■♑☸	"river"
18.	☯🕯☐♦✞◆☐ ☸	"rain"
19.	☯🕯♎◆✋♐♋☸	"tree"
20.	☯🕯♌✋◘☐☸	"mountain"
21.	☯🕯♦✌❒✋ ☸	"grass"

Commentary

Upon analysis of the subject's production of the citation forms, an interesting phonological feature of Akwapen was revealed. Advancement of the tongue root (ATR) is a significant feature of Akwapen, which has a principle of vowel harmony that restricts the mixture of advanced and nonadvanced vowels within a word. However, unlike other languages which do not contrast between plus and minus [ATR] vowels, Akwapen freely combines with both [+ATR] and [-ATR] inside root morphemes (Kenstowicz, 1994).

Advancement of the Tongue Root

In the production of [+ATR] vowels, "the root of the tongue is drawn forward and the larynx is lowered, so that the part of the vocal tract in the pharynx is considerably enlarged...there are vowels in which there is no advancement of the tongue root or lowering of the larynx." (Ladefoged, 1993).

A close examination of the difference between [+ATR] and [-ATR] vowels showed another interesting feature of Akwapen. When a prefix is attached to the morpheme, the result is a representation with a floating harmonic autosegment. The leftmost [+ATR] autosegment in the root induces [+ATR] harmony in the prefixal vowel. It is obvious that only languages which allow more than a single [ATR] autosegment per morpheme will have this feature. According to Kenstowicz (1994), this analysis strongly supports the autosegmental treatment of vowel harmony. This feature was found to be consistent in Akwapen, especially when a prefix was attached to root morphemes, these roots induced [+ATR] in prefixes. For example, words 2, 7, 8, 9, 10, 11, 13, 14, 15, and 18 contain both [+ATR] and [-ATR] vowels.

Secondary Articulation

The analysis also revealed secondary articulation, which is "an articulation with a lesser degree of closure occurring at the same time as another (primary) articulation (Ladefoged, 1993). Words 3 and 4 contain the palatalized type of secondary articulation. Interestingly, the nasal [n] didn't sound very alveolar. As a matter of fact, the primary articulation seemed to have become more palatal. That is, the point of articulation moved toward the palatal region in this particular case. It could be the case that every time the nasal [n] occurs in word initial position, the point of articulation shifts toward the palatal region. However, it is difficult to generalize this rule since there is a paucity of observed data; secondary articulation was found in only two words.

Partial Glottal Release

Another consistent feature was found during the analysis. Barring a few exceptions, when a low, central vowel [a] occurred in word-final position, it was followed by a partial glottal release. A close scrutiny of the morphemes imparted that this feature was consistent with the [+ATR] prefixal vowels. In other words, a root morpheme containing a [+ATR] prefixal vowel and a low, central vowel in the final

position, was followed by a partial glottal release. Words 1, 2, 7, 11, 13, 14, 15, and 18, exhibit this feature. This release didn't occur when the word did not contain a [+ATR] first syllable but had the same low, central vowel in its final position. The rule could be describes as,

[+ATR] followed by low, central vowel [✌] _____ partial glottal release

However, it should be noted that the findings of this analysis are based on only twenty one words. A larger data collection may contradict this rule.

Rounded Mid-back Vowels

Compared to English, the Akwapen mid-back vowel [o] was more rounded. This phonetic feature was consistent and was not affected by word position. Both [+ATR] and [-ATR] mid-back vowel [o] had the additional roundness feature in comparison to their English equivalent. In other words, roundness of the vowel [o] occurred in both onset and coda. Words 6, 11, 13, 15, 18, and 20 for example.

Alveolar Trill

Voiced alveolar trills were found in the subject's production of certain citation forms. As described in Ladefoged (1993), in the production of a trill, "the tip of the tongue is set in motion by the current of air." (Ladefoged, 1993). Words 14 and 21 contain voiced alveolar trill. In addition, one example of a voiced alveolar approximant was found in word 3. Based on the data, it can be said that Akwapen has both voiced alveolar trill and voiced alveolar approximant. However, it is difficult to say whether or not it has voiced taps and flaps because of a limited sample.

Conclusion

To sum up, the analysis revealed many interesting features. Advancement of the tongue root, secondary articulation, partial glottal release in word-final position, more rounded mid-back vowel, voiced alveolar trills, and voiced alveolar approximant were found. The most striking feature of the Akwapen language is advancement of the tongue root, which should be considered a phonetic quality that can be defined in physiological terms (Ladefoged, 1993). This phonetic quality of Akwapen strongly supports the autosegmental treatment of vowel harmony.

It should be noted that the sample collected for this project is extremely limited. Nevertheless, it still revealed many interesting features. A narrow transcription of data collected in a reasonably natural speech situation may present more qualities, both phonetic and phonological.

WORKS CITED

Kenstowicz, M. 1994. *Phonology in Generative Grammar.* Cambridge: Blackwell Publishers.

Ladefoged, P. 1994. *A Course in Phonetics.* Orlando: Harcourt Brace Jovanovich College Publishers.