Phonology Analysis of Acehnese

Yunita Nugraheni[1]
Hetty Catur Ellyawati

ABSTRAK

*Bahasa Aceh, sebagai bahasa lokal Provinsi Nanggroe Darussalam (NAD), memiliki dua bentuk pengejaan dan kaya akan diftong. Di dalam penelitian ini, fitur-fitur fonetik dari bahasa Aceh seperti fonem, pasangan minimal, pasangan meragukan, dan prosedur yang diterapkan dalam mengidentifikasi fonem dianalisis. Metode wawancara, yang melibatkan penutur asli, dan metode studi pustaka diterapkan dalam pengumpulan data. Sedangkan analisis data, khususnya analisis fonem, dilakukan dengan melalui beberapa prosedur, antara lain prosedur pendahuluan (*preliminary procedure*), prosedur pemisahan (*separating procedure*), dan prosedur penggabungan (*separating prosedure*). Hasil penelitian menunjukkan bahwa terdapat 16 fonem konsonan dan 8 fonem vokal di dalam bahasa Aceh. Terdapat sebuah fonem khusus untuk /t/ di dalam bahasa Aceh, yaitu /ţ/.*

Kata kunci: bahasa Aceh, diftong, fonetik, fonem

INTRODUCTION

Background

Nanggroe Aceh Darussalam (NAD) is one of the provinces of Indonesia located in west Sumatera. It is 60.000 km^2 in large and has 4.200.000 population. NAD has, besides Indonesian, many local languages, but the two most common local languages, they are Acehnese and Gayo. Other examples of languages in NAD are as follows: a) Alas in the area of Kutacane. It is related to the Gayo language; b) Jame is spoken in the southwestern coastal parts of NAD and in Pulau Banyak. It is a mix of several languages, for example Minangkabau of West Sumatera, Batak languages ang Nias; c) In Simeulue are the three different local languages; Defayan, Sigulai, and Lekon and; d) Haloban is language spoken by only 1.000 persons in Pulau Banyak.

Acehnese is more difficult to learn, but everyone you meet will love to help you along. Acehnese was written with the Arabic alphabet until the first half of the 20^{th} century, nowaday, Acehnese is written in Ejaan Yang Disempurnakan (EYD).

There are at least two different forms of spelling Acehnese which can make it confusing at times. It is also rich in diphthongs. A rough shortcut to pronunciation is to pronounce the words as a Frenchman would do.

[1] Pengajar S1 Sastra Inggris di Universitas Muhammadiyah Semarang

Acehnese has five vowels and each vowel has several variations. They are:

A : a, ä, à

E : e → [ə] is pronounced as 'dekat' in Indonesian
è → [ɛ] is pronounced as 'besok' in Indonesian
é → [e] is pronounced as 'kue' in Indonesian
eu → [ə] is pronounced as 'dekat' in Indonesian

I : i, ɨ, ie

O : ȯ → [ ]
ô → [o]
ö → [Λ]

U : u, ue, ú

The Gayo language has five major dialects that differ rather much between themselves. It is pronounced basically in the same way as Indonesia. The Gayo language closely related to the Karo language in Berastagi and Kabanjahe in south of the Aceh border.

This paper only analyzed the Acehnese involves the phonetic features, those are phoneme, minimal pairs, suspicious pairs, and the procedures which is taken to identify the phoneme.

Aim of the Research

The aim of this analysis is to describe Acehnese include its pronunciation, the phoneme, the system of vowels and consonants, the minimal pairs and to analyze the Acehnese by using three procedures namely, the preliminary procedure, the separating procedure, and the uniting procedure.

Data Source

The data source is taken from a native speaker of Acehnese, her name is Dra. Cut Aja Puan Allisafny, 52 years old. Although she has been living in Semarang for years, she still can speak Acehnese well, since Acehnese is her mother tongue.

Method of the Research

There are two kinds of data used in this analysis, namely; primary and secondary data. The primary data of this research are some words in Acehnese obtained by interviewing the Acehnese's native speaker, while the secondary data are

taken from the Acehnese' dictionary. The writers used the secondary data to support their primary data.

For collecting the data, this research used interview method and library research method. In interview method the writers interviewed the respondent to get the data; while in library research method, the writers explored a lot of books and brows through the internet to support the data of analysis.

To analyze the data, especially analyzing the phoneme, the writers used some procedures, they are preliminary procedure, separating procedure and uniting procedure.

ANALYSIS

Theory of Phonetics

The study of the sound system or the sound pattern is called phonology. There are two branches of phonology, they are phonetics and phonemics. Phonetics is the study of the forms of sound while phonemics is the study of the function of sound.

There are three aspects in phonetics, they are articulatory phonetics, auditory phonetics and the last is acoustics phonetics. Articulatory phonetics is the study of organ of speech such as tongue, pharynx, and larynx. Auditory phonetics is the study of the sound we received through ears.

1. Vowels

A vowel is a type of sound for which there is no closure of the throat or mouth at any point where vocalization occurs. Shortly, vowel sound produced when there are no obstructions from the air passage. The vowel classification is based on the movement of the tongue. Based on the high of tongue raised, vowels are divided into three classifications; they are high vowels, middle vowels and low vowels. According to part of the tongue raised, vowels are divided into front vowels, central vowels and back vowels. Based on the position of the lips, vowels are divided as rounded and unrounded. For further information, see the following table of vowel chart;

		Front	Central	Back
High	Tense	i (beat)		u (boot)
	Lax	ɪ (bit)		ʊ (book)
Mid	Tense	e (bait)	ʌ (but)	o (boat)
	Lax	ɛ (bet)	ə (about)	ɔ (paw)*
Low		æ (bat)		ɑ (pot)

*(not in all dialects)

2. Consonants

A consonant is a speech sound that is articulated with complete or partial closure of the upper vocal tract, the upper vocal tract being defined as that part of the vocal tract that lies above the larynx. Simply, consonant is sound for which there are one or more points where air is stopped. The classification of consonants is based on three things, namely, place on articulation, point of articulation and nature of vocal cords. The place of articulation refers to the place of the sound produced or where the sound produced. The manner of articulation refers to way the sound produced or how the sound produced. The last classification, the nature of vocal cords, is determined whether the sound produced is voiced or voiceless. Based on the place of articulation or point of articulation, consonants are divided into bilabial, labiodentals, dental, alveolar, palato or post alveolar, palatal, velar and glottal. According to the manner of articulation, consonants are divided in to plosive, affricative, fricative, lateral, nasal and semi vowel. According to the nature of vocal cords or voicing state, consonants are divided in to voiceless and voiced. For further information see the following table;

MANNER		Place of Articulation						
		Labial	Labiodental	Interdental	Alveolar	Alveo-palatal	Velar	Glottal
Stop	*voiceless*	p pill			t till		k kill	ʔ uh-oh
	voiced	b bill			d dill		g gill	
Flap/Tap	*voiceless*				ɾ butter			
Fricative	*voiceless*		f fine	θ thin	s ship	š / ʃ pressure		h hill
	voiced		v vine	ð then	z zip	ž / ʒ pleasure		
Affricate	*voiceless*					č / tʃ choke		
	voiced					ǰ / dʒ joke		
Nasal	*voiced*	m simmer			n sinner		ŋ singer	
Approximant	*voiced*	w wore			r roar	y your		
Lateral	*voiced*				l lore			

Theory of Phonemics

A phoneme is the smallest unit of speech that distinguishes meaning, phonemes are not the physical segments themselves, but abstractions of them. Here is the phoneme identification or premises:

1. sounds tend to be modified by their environment

2. sound systems have a tendency toward phonetics symmetry

3. sounds tend to fluctuate

4. Characteristic sequence of sound exerts structural pressure on the phonemic interpretation of suspicious segments or suspicious sequences of segments.

Analytical Procedures

This chapter discusses on the phonemics units. The first procedure is called by preliminary procedure. This procedure consists of several steps of phonemics analysis, namely; recording the data, making a phonetics chart (consonant chart and vowel chart), listing suspicious pairs of sounds, listing non suspicious sounds. Analytical procedure is the second procedure in analysing phonemes. It is divided into three parts, they are; the phonemic separation of similar segments upon finding them in contrast in identical environment, the phonemic separation of similar

segments upon finding them in contrast in analogous environment, the phonemic uniting of similar segments upon finding them in mutually exclusive environment. The following will be the discussion of each procedure.

PRELIMINARY PROCEDURES

Recording the data

The researchers got the data by interviewing the Acehnese's native speaker. Her name is Mrs. Cut Aja Puan Ellisafny. The Acehnese data are the following:

Table 1. Phonetics Data of Acehnese

No	English	Phonetics transcription
1	Chicken	[manɔʔ]
2	Rooster	[agam]
3	Hen	[inoŋ]
4	Toothbrush	[soǯo]
5	Eye	[maṭa]
6	Die	[maṭɛ]
7	Arrogant	[mboŋ]
8	Fierce	[mənṭa]
9	Foam	[munṭa]
10	Beach	[pasə]
11	Pus	[pasi]
12	Schedule	[ǯudə]
13	Difficult	[payah]
14	Set feet on	[payɛh]
15	Umbrella	[payoŋ]
16	Neck	[ṭakuə]
17	Cook	[ṭagun]
18	Fish preserved in salt wet/ 'peda' fish	[pədaʔ]
19	Smarting	[pədɛh]
20	Eat	[paǯɔh]
21	When	[paǯan]

22	Urinate	[pɪpɛh]
23	Rest	[pɪɔh]
24	Damage	[pəpak]
25	Broken	[puţɔh]
26	Near	[ɾab]
27	Yeast	[rugɔ]
28	Tame	[ragɔ]
29	Washing face	[ɾahop]
30	Record	[rakam]
31	Friend	[rakan]
32	Wasteful	[rampɔh]
33	Harbour	[Bandar]
34	Sob	[sok-sok]
35	Put into	[sɔʔ]
36	Shop (n)	[kədɛ]
37	Amazed	[ţahɛ]
38	Shop (v)	[bəlanǯe]
39	Alo	
40	Rope	[ţalɔ]
41	Loose	[ţalo]
42	Hit	[pɔh]
43	Many	[lə]
44	Past	[lɛ]
45	By	[lɛ]
46	Place something	[boh]
47	Put something outside	[ţoh]
48	Boxing	[soh]
49	Fruit	[bɔh]
50	Which	[ţɔh]
51	Empty, blank	[sɔh]

Making a Phonetics Chart

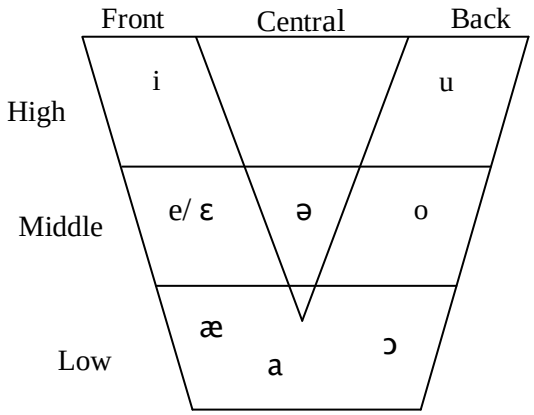
After assuming the accuracy of the data studied, the researchers made a phonetics chart, both consonant and vowel chart, of all the kinds of segments in the language studied.

Table 2. Consonant chart

	Bilabial	Labio dental	Dental	Alveolar	Post alveolar	Palatal	Velar	Glottal
Plosive	p,b			ţ,d			k,g	?
Affricate					ǯ			
Fricative				s				h
Lateral				l,r				
Nasal	m			n			ŋ	
Semi vowel						y		

There are 16 consonants.

Figure 1. Vowel chart



There are 8 vowels.

Listing suspicious pairs of sounds

In this step, the researchers listed all pairs of segments which are suspicious because they are phonetically similar and might be proved to be sub members of a single phoneme. The following are the suspicious pairs of segments found in the data of language studied (Acehnese);

1. [p,b] 6. [m,n] 11. [o,ɔ]

2. [ʈ,d]	7. [n,ɳ]	12. [u,o]
3. [k,g]	8. [k,ʔ]	13. [a,ɛ]
4. [l,r]	9. [i, ə]	14. [ɛ,ə]
5. [g,ʔ]	10. [a,ɔ]	15. [h,ʔ]

Listing Non Suspicious Sounds

The researchers listed all the segments which do not occur in the suspicious pairs and which are presumably phonemically distinct. The non suspicious sound are;

[ǰ, h, y,s]

SEPARATING PROCEDURES

Identical

The phonemic separation of similar segments upon finding them in contrast in identical environment.

1. For [p] and [b]

The phonetic difference between them; [p] is voiceless; [b] is voiced.
The most similar environment in which they occur;

[pɔh] 'hit'
[bɔh] 'fruit'
} [p] and [b] contrast in identical environment and are separate phonemes

2. For [m] and [n]

The phonetic difference between them; [m] is bilabial; [n] is alveolar.
The most similar environment in which they occur;

[rakam] 'record'
[rakan] 'friend'
} [m] and [n] contrast in identical environment and are separate phonemes

3. For [o] and [ɔ]

The phonetic difference between them; [o] is middle; [ɔ] is low.
The most similar environment in which they occur;

[sok] 'sob'
[sɔk] 'put into'
} [o] and [ɔ] contrast in identical environment and are separate phoneme

[ţalo] 'loose'
[ţalɔ] 'rope'
} [o] and [ɔ] contrast in identical environment and are separate phoneme

[boh] 'place something'
[bɔh] 'fruit'
} [o] and [ɔ] contrast in identical environment and are separate phoneme

[toh] 'put something outside'
[tɔh] 'which'
} [o] and [ɔ] contrast in identical environment and are separate phoneme

[soh] 'boxing'
[sɔh] 'empty'
} [o] and [ɔ] contrast in identical environment and are separate phoneme

4. For [ɛ] and [ə]

The phonetic difference between them; [ɛ] is front; [ə] is central.
The most similar environment in which they occur;

[lɛ] 'by'
[lə] 'many'
} [ɛ] and [ə] contrast in identical environment and are separate phoneme

5. For [i] and [ə]

The phonetic difference between them; [i] is front; [ə] is central.
The most similar environment in which they occur;

[pasi] 'pus'
[pasə] 'beach'
} [i] and [ə] contrast in identical environment and are separate phoneme

6. For [a] and [ɛ]

The phonetic difference between them; [a] is front; [ɛ] is central.
The most similar environment in which they occur;

[payah] 'difficult'
[payɛh] 'set feet on'
} [a] and [ɛ] contrast in identical environment and are separate phoneme

Analogous

The phonemic separation of similar segments upon finding them in contrast in analogous environment.

1. For [k] and [ʔ]

The phonetic difference between them; [k] is velar; [ʔ] is glottal.
The most similar environment in which they occur;

[pəpak] 'damage' } [k] and [ʔ] contrast in analogous environment
[pəda?] 'peda fish' } and are separate phonemes

2. For [h] and [ʔ]

The phonetic similarity between them; [h] is glottal; [ʔ] is glotal.
The most similar environment in which they occur;

[pəda?] 'peda fish' } [h] and [ʔ] contrast in analogous environment
[pədɛh] 'smarting' } and are separate phonemes

5. For [o] and [ɔ]

The phonetic difference between them; [o] is midle and back; [ɔ] is back and low.
The most similar environment in which they occur;

[boh] 'place something' } [o] and [ɔ] contrast in analogous
[pɔh] 'hit' environtment } and are separate phoneme

UNITING PROCEDURE

1. For [a] and [ɔ]

Table 3. Test: Occurrence in Word Final Position before /h/

	In the final position	Elsewhere
/a/	1 (once)	2 (twice)
/ɔ/	8 (eight times)	Never

Phonetics conclusion:

[a-ɔ] are sub member of a single phoneme, since they are phonetically similar and mutually exclusive in their distribution.

Conclusion

From the analysis above we can conclude that there are 16 phonemes of consonant and 8 phonemes of vowels in Acehnese. That there is a specific phoneme for /t/ in Acehnese, it is /ţ/.

The suspicious pairs of Acehnese are:

1. [p] and [b] - [pɔh] 'hit'
   [bɔh] 'fruit'

2. [m] and [n] - [rakam] 'record'
   [rakan] 'friend'

3. [o] and [ɔ] - [sok] 'sob'

[sɔk] ‘put into’

4. [ɛ] and [ə] - [lɛ] ‘by’
[lə] ‘many’

5. [i] and [ə] - [pasi] ‘pus’
[pasə] ‘beach’

6. [a] and [ɐ] - [payah] ‘difficult’
[payɐh] ‘set feet on’

7. [k] and [ʔ] - [pəpak] ‘damage’
[pədaʔ] ‘peda fish’

8. [h] and [ʔ] - [pədaʔ] ‘peda fish’
[pədɐh] ‘Smarting’

9. [k] and [g] – never occurrence of /g/ in the final position after /a/

10. [a] and [ɔ] - the occurrence of / ɔ / in the final position before /h/
The non suspicious of Acehnese are:
[ǯ, h, y,s]

References

Aboebakar, dkk. 1984. *Kamus Aceh Indonesia 2*. Jakarta: Pusat Pembinaan dan Pengembangan Bahasa

Carr, Phillip. 1993. *Phonology*. London: The Macmillan Press Ltd

Kridalaksana, Harimurti. 2008. *Kamus Linguistik*. Jakarta: Gramedia Pustaka Utama

Muslich, Masnur. 2008. *Fonologi Bahasa Indonesia: Tinjauan Deskriptif Sistem Bunyi Bahasa Indonesia*. Jakarta: Bumi Aksara

Pike, K.L. 1978. *Phonemics: A Technique for Reducing Languages to Writing*. Canada: The University of Michigan Press

Ramelan, 1977. *English Phonetics*. Semarang: Unnes Press.

Roach, Peter. 1990. English Phonetics and Phonology. A Practical Course. Cambridge: Cambridge University Press

Acehnese language and Dictionary