Arabic Phonology (A Generative Analysis)

Nurjannah
Faculty of Letters, Universitas Muslim Indonesia

Article Info	ABSTRACT
Keywords: Phonology, Arabic-Generative Analysis	The aim of the research is to determine and analyze the form of transcription of Arabic phenotes, description and naming of Arabic language segments, description of Arabic language segments according to different characteristics and Arabic phonological processes. Data was taken using Arabic phonology with a review of generative analysis as a theoretical framework. Generative analysis is used to process the birth structure which can produce phonetic images. From the analysis results obtained it is concluded that 1) if the smoothed and loudened sounds meet then one of them is reversed. Example (if al) of the word (fa'ala). Apart from that, the sound of the letter j (waw) is sharpened, while the letter (ta') is softened j, 2) the transfer of air flow from the mouth to the nose or vice versa. The nature of sound is divided into two, namely the first exhalation of air through the mouth when speaking and is generally found in Arabic such as dal and la'. Both of them come out through the nose like the letters ? min and nun. The letters m ba turn into ? (mim) or the sound that passes from the mouth (ba') changes to the nasal sound (miim) as the combination of nin and lam in the example, 3) Shifting sound makhraj. There are various forms of assimilation from the original makhraj to other makhraj, many of which are found replacing the letter ^ with characteristics typical of modern Arabic dialects, such as when Egyptians pronounce (4->j±kU) changed to (4j). and 4) Change in the nature of the sound from loud to soft. This assimilation is often found in idgham which consists of idgham mutamasilain, Idgham mutajanisasin, and Tdgham mutaqaribain
	Corresponding Author: Nurjannah Faculty of Letters, Universitas Muslim Indonesia nurjannah_abna@umi.ac.id

INTRODUCTION

Arabic language learning is a process of interaction between students and teachers in the process of Language is a communication system that uses arbitrary vocal symbols (speech sounds) which are reinforced by real body movements [1] . Language is a symbol because the series of sounds produced by the human speech apparatus are given to something that can be absorbed by the five senses [2] .

Language includes two areas, namely vowel sounds produced by the human speech apparatus and meaning, namely the relationship between a series of vowel sounds and the items or things they represent. Sound is a vibration that stimulates the hearing apparatus, while meaning is the content contained in the sound stream that causes a reaction or response from other people.

Each letter has a different shape, depending on the position of the letter, whether at the beginning or in the middle or at the end of a word. Some consonant sounds have no equivalent in Western languages. For example, Arabic letters have three punctuation marks for short vowels, namely (a) dhammah, (b) fathah, and (c) kasrah [3] . There are also sound signs for long vowels, namely n, a, 1 which are written together with the word so that they are an integral part of a word.

Language researchers who want to obtain good results need to know the science of sound and its use. Without knowledge of sound science (phonology), it will be difficult to achieve perfection and satisfaction , including the sound science (phonology) of the Arabic language. In analyzing Arabic phonology, several considerations regarding generative theory. Firstly, generative theory, especially in the field of phonology, has not been applied in Arabic language research, even though it has been widely used in research on other languages [4] . Second, with a generative approach, it is hoped that specific things from the phonology of the Arabic language will be found. Third, the generative approach, especially generative phonology, is economical and simple.

One example of the words (قَلْبٌ) and (كَلْبٌ) : Heart (قَلْبٌ) and Dog ((كَلْبٌ). These words have phonological differences and cause differences in meaning between the two words [ق] and [ك] which are functionally or phonologically different , because it differentiates the words. So for Arabic / ق/ and / ك/. The meaning contained in a series of sounds is arbitrary, meaning that there is no requirement that a particular series of sounds must contain a certain meaning on the conventions of the language community in question.

Various studies have been carried out on the science of sound (phonology) of language but none has discussed the phonology of Arabic [5] . Questions, what is the form of phonetic transcription of Arabic? How is the description and naming of Arabic language segments? How are Arabic segments described according to their different characteristics? and what is the phonological process of Arabic? Thus, the research tries to describe Arabic phonology with a review of generative analysis as a theoretical framework or basis for analyzing Arabic phonology. Generative analysis is used to process birth structures that can produce phonetic images.

METHODS

This research is a qualitative descriptive study which aims to describe phenomena naturally without experimental intervention. The research variable is Arabic Phonology with generative analysis, carried out in three stages: preparation, data collection, and data processing. Data collection methods were carried out through literature, observation, interviews, and recording and recording speech. Oral corpus fishing techniques include translation, questions, stories, and analysis. The validity of the data was checked through diligent observation and triangulation. Data analysis includes determining meaning, transcription, segmentation, classification, comparison and structural generalization. This research aims to make the corpus easier to understand and to make structural generalizations.

RESULTS AND DISCUSSION

Forms of Arabic Phonetic Transcription

English	Arabic	English	Arabic
Prevent	حجر	Msmukul	ضرب
Create	جعل	Demand	طلب
Equip	جهز	Class	فصل
Slamming	جحل	Utania	فضل
Defend	جحس	Touch	مسّ
Expand	جخر	Tastes sweet	مزّ
Mountain	جبل	Kill	قتل
Rope/Link	حبل	Dog	كلب
Steal	سرق	Hold on	كتل
Work sir	سخر	When	متى
Easy	سهل	Wed (God)	ربّ
Journey	سفر	Reply	أجر
Shut up	سكت	Morals .Telek	ترش
Limping	سكم	Father	أب
Fall	سقط	Agreement	عقد
Seven	سبع	Consequence	عقب
Pick	شرق	Shave	حلق
Stupid	جهل	Deaf	طرش
Tree	شجر	Eat Quickly	كوّن
Month	شهر	Plunder	سلب
Intercession	شفع	Preceded	سلف
Be patient	صبر	Malia	كرم
From hellfire	من النار	Fountain pen	قلم
Bribe	زقم	Daii water	من ماء
Among you	من بعضكم	From all of you	منكم
From enjoyment	من نعمة	Daii We	منا
From animals	من د بة	Destroy	هلك
Decide	هجر	Pick	و كف
Actions	فعل	Have eaten	أكل
Has cut	قت	Have lied	قد
Walk Fast	زت	Has taken	شار
Heart	قلب	Has died	مات
There have been	كان	Stop	و قت
Has been rocking	ماد	Has Peed	بال
Has stood	قام	Kill very	ذ ف
Stunned	بثت	Be pure	بحت
From your God	من ربكم	From something	من يشاء
A little	نزر	Have seen	نظر
Feeding Dates	تمر	Mendiarni	عرش
Soften	درق	Become Thin	ضمر
Show	دل	Susat	ضل

Reject	ثلب	Advise	أرش
Perish	ثبر	Hit me	طرق
Preceding	سلف	Bring	جلب
Skinning	قرم	Book	دبر
Withhold	ظلف	Jump	زرق
Hate	صلف	Pen Cattle	زرب
Spend	صرف	Advance	زلف
Lower	حدر	Craving	هدر
Anesthetizing	خدر	Forbidden	حرم
Penetrating	خرم	Present	حضر
Tie	عقل	Of what	مما
Wound Bandage	ضمد	Behind	وراء
Leave	ترك	Drum	طبل
Strengthen	حتر	Mendianii	تلد
Whiteboard	سبورة	Door	باب
Appear	ظهر	Plunder	سلب
Animal Nest Hole	جحر	Install	زخر
Mother	أم	Make a sound	صلق

Data Transcription

1. [hajara]
2. [hajala]
3. [jaaza]
4. [jahala]
5. [jahaza]
6. [jaara]
7. [jabala]
8. [habala]
9. [Saraqa]
10. [Sanya]
11. [SaXala]
12. [Safara]
13. [Sakata]
14. [Sakama]
15. [Saqafa]
16. [Sahara]
17. [saraqa]
18. [haXala]
19. [sajara]
20. [samara]
21. [safag]
22. [Be patient]
23. [minanna:r]

60. [daraba]
61. [talaba]
62. [fasiu]
63. Fadlu
64. [mass]
65. Mazza
66. Qatala
67. Heart
68. [catala]
69. [eye]
70. [rabbU]
71. [jrU]
72. [tarasa]
73. [abUB]
74. [Caqada]
75. [aqaba]
76. [halaqa]
77. [tarasa]
78. [kawawana]
79. [salaba]
80. [salaf]
81. [karama]
82. [qalama]

24. [zaqama]
25. [minbad'i]
26. [min enjoy]
27. [min dabba ti
28. [Xajara]
29. [fafala]
30. [qatta]
31. [zappa]
32. [qalbU"]
33. [ka:na]
34. [ma:da]
35. [qa:ma]
36. [kid]
37. [min Rabbikum]
38. [nazura]
39. [Tamara]
40. [daraqa]
41. [dalla]
42. [Galaba]
43. [Gabara]
44. [salaf]
45. [qarama]
46. [zalafa]
47. [salaf]
48. [nervous]
49. [hadara]
50. [yadara]
51. [yarama]
52. [qala]
53. [damada]
54. [taraka]
55. [hatara]
56. [sabburatu]
57. [zakara]
58. [Jahara]
59. [UmmU]

83. [min ma:
84. [minkum]
85. [minna]
86. [Xalaka]
87. [endowment]
88. [time]
89. [qadda]
90. [sa:ra]
91. [eye]
92. [waqafa]
93. [ba:la]
94. [aqafa]
95. [bahata]
96. [mayyasa:u]
97. [uazara]
98. [Crasa]
99. [damara]
100. [dalla]
101. [Vrasa]
102. [taraqa]
103. Qalaba]
104. [dabara]
105. [zaraqa]
106. [zaraba]
107. [zalafa]
108. [Xadara]
109. [harama]
110. [hadara]
111. [mimma:]
112. [wara:]
113. [tabala]
114. [talada]
115. [ba:bUn]
116. [salaba]
117. [zayara]
118. [salaqa]

Distinguishing Characteristics of Arabic

Discusses the distinguishing characteristics of Arabic, starting with phoneme identification to facilitate further explanation.

a) Phoneme Identification

A sound's status as a phoneme can be identified by comparing a sound with other sounds in a certain sound ' environment '. This comparison or opposition involves pairs of

words. with minimal differences, known as minimal pairs. For example, the sound pair butik and batik can be used to identify the status of the sounds [u] and [a] as the phonemes /u/ and /a/a and the pair butik from pistik describes the contrast of the phonemes /b/ and /p/.

Boutique   boutique

Pistil batik

The pair dabak and babat have two contrasting phoneme pairs, namely the phoneme pair /d/ and /b/ and the phoneme pair /k/ and til

Dabak

Tripe

Sounds that have only one contrasting data pair are called contrasts in the same/identical environment (KLS) and sounds that have contrasting data pairs in more than one segment are called contrasts in similar/analogical environments (KLM). However, it needs to be emphasized that all contrast in the same/identical environment (KLS) past! contrast in a similar/analogical environment (KLM), but not everything that contrasts in a similar/analogical environment (KLM) contrasts in the same/identical environment.

Even though in linguistic analysis phonologists do not pay attention to differences in meaning, in comparing the opposition or contrast of phonemes, they are forced to involve differences in meaning, so that contrasting phonemes can be differentiated into two different phonemes, not into variations in the sound of the phoneme. The occurrence of contrast in a language shows the existence of opposition between distinctive units in a language sound. The sounds of language tend to be influenced by the surrounding sounds and some sound units have insignificant variations according to other sounds that precede or follow them or according to their position in the word and so on.

The methodological presentation of the analysis or discovery of phonemic units in KLM is carried out by following the following preliminary procedures:

1. Recording or recording data
2. Accurate and refine data
3. Create a phonetic chart
4. Note suspicious sound pairs
5. Pay attention to unsuspicious sounds.

Recording or recording language data should be done carefully by using phonetic symbols to describe how the sound is produced by the speech apparatus. A researcher should record language data based on the respondent's or native speaker's own speech carefully. The next step is to register the language data into a phonetic chart. The language data that has been recorded or recorded from all the different segments is listed in a phonetic chart. In the chart, the s'rribol segments are arranged based on the order of place of articulation as in phonetic charts usually made in phonetics. Only the name of the segment, including the place of articulation or method of articulation, is not included.

After registering them in the phonetic chart, the researcher then noted the suspicious sound pairs. Suspicious segments are segments that are phonetically similar and can be allophones of one phoneme. As a basic guideline for researchers in determining segments that should be suspected are segments that can be one allophone of one phoneme and these segments are very similar phonetically. If the researcher finds two segments that are

similar, then the phonetic status of the sound is suspected until it can be ascertained whether the sound is an allophone of one phoneme or not. Therefore, from the list of phonetically similar Sound pairs that may cause difficulties in analyzing such sounds are categorized as suspicious pairs.

After registering suspicious language data,. So next the researchers listed suspicious sounds. This list is separate from the list of suspicious pairs, namely segments that are not phonetically similar and do not constitute an allophone of a phoneme. From this description, the preliminary procedure will give rise to two forms of separation, namely analogical or contrasting separation in a similar environment (KLM) and identical or contrasting separation in the same environment (KLS).

Analyzing similar phonemic segments based on contrast analysis in similar or analogical environments (KLM) is carried out using three frameworks of phonemic analytical procedures as a continuation of the preliminary procedures above, namely:
1. Procedure for separating phonemic segments and symbolizing phonemic autographs
2. The procedure for unifying minor variations of special sound units in a particular language and how to write these sound variants with one symbol
3. Interpretation procedure group, whether a segment is a vowel and a consonant, and whether a particular series of sounds is a consonant cluster or is a phonetically complex consonant unit or is a vocal cluster or is a phonetically complex vocal unit.

Suspicious segment pairs are listed because these segment pairs are phonetically similar [6] . If there are many suspicious pairs, then the first thing to do is a segment that has suprasegmental characteristics (an element that includes more than one segment in a speech continuum that is contrasted phonemically) that is very similar in its environment. In addition, it is also necessary to list segments pairs that are not hypothetically similar and do not occur in suspicious pairs.

Phonetic properties are differentiated between the segments of each suspicious pair, then selecting the most suspicious one. Sim differences are mentioned in the closest Forietis environment, both those that precede and those that follow the segment. The most logical hypothesis is chosen so that the environment that causes differences between segments can be identified. It is said to be logical if one segment is only found in one environment and not in another environment. The hypothesis must be rejected if the data contradicts the cliterirtiha hypothesis after the position of the data is checked carefully.

In the following, the author will identify phonemes based on this research data and will solve them through procedures as described previously, starting from preliminary procedures to separation procedures into contrasts in different environments.
1. Consonant Segment Phonetic Chart

b		Q		t	k	q	?
		D		d			
				j			
	f	0	sz		y	s	h
m		N			n		

		l				
		R				
w				y		

2. Vowel Segment Phonetic Chart

i		t		u U
		d		
		a A:		

3. Suspicious sound

a.	[t]	And	[d]
b.	[t]	And	[t]
c.	[f]	And	[d]
d.	[d]	And	[t]
e.	[d]	And	[d]
f.	[k]	And	[q]
g-	[?]	And	[C]
h.	[e]	And	[ ]
i.	[s]	And	[z]
j-	[s]	And	[2]
k.	[2]	And	[2]
1.	[s]	And	[s]
m.	[2]	And	[s]
n.	[ ]	And	[s]
o.	[T]	And	[h]
P-	[7]	And	[X]
q-	[h] and		[A]
r.	[m]	And	[n]
s.	[m]	And	[g]
t.	[n]	And	[n]
u.	[1]	And	[r]
v.	[a]	And	[a:]
w.	[a]	And	[U]

4. Unsuspicious Sounds
   1) [J]
   2) [w]
   3) [Y]
   4) [i]
   5) [s]

5. Same Sound Environment (KLS)

1) [. t] and [d]   [ma:ta] /1/and/d/twophonemes
[ma:da]

2) [t] and [s]   [tarisa] /1 / and /1 / are two phonemes
[tarisa]

3) [t] and [4]   [tamara] /1 / and / d / are two phonemes
[damara]

4) [dj and [\ ]   [daniqn] / d / and / \ l are two lonemes
[tai'aqa]

5) [dj and [d]   [dalla] /d / and / d / are two phonemes
[dalla]

6) [k] from [4 J   [karasa] / k / and / q / two phonemes
[qarasa]

7) [?] and [£]   [ara sa] ni and / £ / two phonemes
[ara sa]

8) [0] and [ ]   [abara] / 9/ and // two phonehi
[abara]

9) [s] and [z]   [salafa] / s/ and / z / are two phonemes
[zalafa]

10) [s] and [z]   [salafa] /s/ and /z/ are two phonemes
[zalafa]

11) [z] and [z]   [zalafa] / z / and / z / are two phonemes
[zalafa]

12) [s] and [s]   [salafa] /s/ and /s/ are two phonemes
[salaf]

13) [salafa] [z] and [s]   [zalafa] / z / and / s / two phonemes
[salaf]

14) [z and [l]   [zalafa] /z / and / s / are two phonemes
[salaf]

15) [y] and [h]   [yarama] / y / and / h / are two phonemes
[haram]

16) [y] and [1]   [yadara] / y / and /1 / are two phonemes
[Xadara]

17) [h] and [X]   [hadara] / h / and / A, / are two phonemes
[adara]

18) [m] and [n]   [minna:] /m / and / n / are two phonemes
[mimma:]

19) [1] and [r]   [qalama] lll and / r / two phonemes
[karama]

20) [a] and [a:]   [eyes'] / a / and / a:/ are two phonemes
[eye]

21) [u] and [U]   [sabburatU11] /u / and / U/ are two phonemes
[bUB]

6. Lingkurigadl sounds similar

1) [t] and [d]   [hatara] /1 / and / d / are two phonemes
[yadara]

2) [t] and [ ]   [tataka] /1 / and /1 / are two phonemes
[taraqa]

3) [t] and [d]   [talada] /1/ and /d/ are two phonemes
[damada]

4) [d] and [\ ]   [dabara] / d / and /1 / are two phonemes
[ifabala]

5) [d] and [d]   [hadara]/ d / and / d / are two phonemes
[yadara]

6) [k] and [q]   [zaqama] /' k / and / q / are two phonemes
[sakama]

7) [?] and [£]   [sakala] /?/ and /£/ are two phonemes
[aqala]

8) [9] and [ ]   [Gabara] / 9 / and//two phonemes
[abala]

9) [s] and [z]   [jalaza] /s/ and /z/ are two" phonemes
[service]

10) [s] and [z]   [salaba] / s / and / z / are two phonemes
[zalafa]

11) [z] and [z]   [zayara] / z / and / z / are two phonemes
[zalara]

12) [s] and [s]   [salafa] /s/ and /s/ are two phonemes
[nervous]

13) [z] and [s]   [zalafa] / z / and / s / are two phonemes
[salaqa]

14) [z] and [s]   [zalafa] /z / and/ s / are two phonemes
[neurala]

15) [y] and [h]   [yahala] / y / and / h / are two phonemes
[yajara]

16) [y] and [A,]   [sayara] / y / and / a, / are two phonemes
[Sanya]

17) [h] and [X]   [yaliaza] /h/ and /X/ are two phonemes
[yahasa]

18) [m] and [n]   [qa:ma]/m / and / n / include phonemes
[kd:na]

19) [1] . and [r]   [qalama] /1 / dah / r / two phonemes
[kardma]

7. Complementary Distribution

1. [m] and [n]

-	-[b], [m]	at another place
n	-	IIII IIII I
m	III	-

n - - - - - - - ➤ n : at another place
- - - - - ➤ m : -[b], and [m]
Transcription Phonemics :
- / minba?di /
- / minma : /
- /min ma:?/

2. [n] and [n]

	-[k]	at another place
n	-	IIII IIII I
n	1	-

n   - - - - - ➤   n : at another place
                    n : [k]
Transcription Phonemic
- / minkum /

Foem List

[b, t, t, d, d, k, ?, £, q, j, f, 9, s, z, y, s, §, h, A., m, n, g, 1, r, w, y, a, a: u, U]

The distinguishing characteristics only use one feature for two different names, for example tense and slack are called (1 tense and (- tense). So, what is different is the value (Botha, 1971) in lagousi. The alphabetic symbols used to represent sound segments are only special conventions and abbreviations of a set of characteristics. There are five distinguishing characteristics, namely:

Characteristics of the main class which include syllabic, sonorant and consonality. Characteristics of the main class include syllabic, sonorant, consonantal. [Syllabic] characteristics describe the role played by a segment in its syllable structure. In general, vowels are [+syllabic], while consonants are [-syllabic]. This characteristic is also needed to distinguish nasal and liquid syllabic sounds ([+syllabic]_ from their non-syllabic counterparts Characteristic [sonorant] refers to the resonant quality of a sound. Vowels are always [+sonorant] as are nasals, liquids and semivowels. Obstruent sounds - inhibited consonants, fricatives, affricatives and laryngeal glides of course [sonorants]

The [+consonantal] characteristic refers to a narrowing obstruction in the oral cavity—either total obstruction or shear. The stop, fricative, affricative, nasal,m and liquid sounds are [+consonantal]; while vocals and semi-vocals, without this level of constriction, are [-consonantal]/Laryngeal glide sounds are also classified as [-consonantal], because these sounds do not have constriction in the oral cavity.

1) The characteristics of the way of articulation include malar (continuous), delayed release (non-immediate release), rough (strident) nasal and literal. Characteristics of the manner of articulation include continuation, delayed release, striden, lateral nasal.

Among the obstruent sounds are fricative consonants, namely sounds with a continuous shift ([-continuant]), and affricative consonants harnbat d? This characteristic also distinguishes [continuous] from h [+continuous]. Although both inhibitory and affricative consonants begin with a total inhibition, the way they release the inhibition is different. Africative consonants have a delayed release ([+delayed release]), while inhibitory consonants are released immediately ([-delayed release]). Continuation consonants need to be differentiated further. In particular, we must distinguish between the bilabial consonant © and the labiodental consonant / dental consonant 0 and the alveolar consonant s, the palatal consonant and the palato-alveolar consonant s, as well as the velar consonant x and the uvular consonant x. For affricative consonants. Delayed fricative release is almost always striden. In some languages with a contrast between the affricative consonant striden and the affricative rionstriden, sir! [striden] is also useful for distinguishing between these two types of afrikatfi. Therefore, the characteristics [consonantal], [continuous], [delayed release], and [striden] define various types of obstruent sounds (An empty place in the matrix means that a particular feature plays no role in segment classification. Nasal and lateral characteristics differentiate various Sonorant consonants are contrasted with liquid consonants such as [-nasal] and [-nasal]. This characteristic also differentiates the nasal vowel [+nasal] from the oral vowel [-nasal].] is quite clear. What is less clear is that [delayed release] and striden [-continuous] harmoniously form a natural class for inhibitory and affricative consonants as opposed to fricative consonants.

2) Characteristics of the place of articulation which include the anterior and cororial
Chomsky and Halle (tt) classified four main areas for articulation of consonants-labium, dentum, palato-alveolum, and velum based on whether the narrowing is in the leading area of the oral cavity (anterior consonants) or more drawn back (nonanterior consonants), and whether The articulator is in the form of a tongue leaf (coronal consonant) or another articulator (non-coronal consonant).
Dental and velar consonants are opposites, as are labial and palato-alveolar consonants. All other pairs have the same characteristic specification, although labial and palatoalveolar consonants do not appear to form a natural class and it is not certain whether dental and velar consonants should also do so. specifically as a fair class. Moreover, phonetically the cirri (anterior) is not quite derived from "The front of the oral cavity" is a rather vague and arbitrary designation. On the other hand, the labial consonant and velar consonant[-coronal] can be combined into one group.

3) The characteristics of the back of the tongue include high, low, back, and characteristics of the shape of the lips which include round and non-round.
In vocal classification, we use the height parameter. medium, low, front, back, round, and not round. The parameters related to back-position and blurring are of course binary. Therefore, at most only two levels (+ value and - value) can be distinguished for a characteristic. To distinguish three levels, such as medium high and low, two characteristics need to be combined, namely marine! those two characteristics. If we take the two very different vowel height levels, high and low, and arrange them as

independent characteristics, we can interpret the original three parameters in a binary framework.

The stem of the tongue and lips are involved in secondary consonant modification, namely palatalization and labialization; placement of similar patterns y- or w- on the primary articulation. The characteristics [tall], [back], and [round] further illustrate these secondary modifications. Final. the tongue shaft is the articulator for f-anterior consonants, - coronal], namely palatal, velar and uvular consonants. For palatal consonants, the tongue stem is raised ([+high]) to the palatal area ([-back]), for velar consonants, the tongue stem is raised ([+high]) to the velar area ([+back]), while for uvular consonants , the tongue bar is not raised ([-high]), but is still pulled in ([back]). Chomsky and Halle (tt) noticed that when labial and dental consonants are palatalized, they retain their original area of articulation and acquire secondary patalization. On the other hand, if a velar consonant is palatalized, it experiences a shift in the area of articulation and becomes a palatal consonant. These changes are neatly covered in this trait system.

4) Additional characteristics include tense, voiced, aspirational and inhibited [7]

[+tense]	= tense [-tense]= slack
[+voiced]]	= voiced [-voiced]= voiceless
[+aspiration]	= aspiration [-aspiration]= not aspiration
[+glottalization]	= diglottalization [-glottalization]= not glottalization

The [tense] characteristic is found in vowels and consonants. This characteristic can also be used for nonlateral liquid consonants, to differentiate between trilled consonants ([+tense] and flap r (-tense]). The [voiced] characteristic is found in all types of segments, although sonorants are less likely to have differences in pronunciation. After analysis with a structural approach, then the data will be analyzed using a generative approach.

Arabic Phonological Processes

a) Assimilation

Assimilation is the process of changing sounds which results in the sound being similar or the same as sounds in the environment. The assimilation process can occur in four ways, namely

1) Consonants are assimilated to vowel features,
2) Vowels are assimilated with the characteristics of consonants,
3) consonants are assimilated to the characteristics of consonants, and
4) the vowel is assimilated to the characteristics of the vowel.

A number of facts still show that segments are changed or assimilated by the second and third processes which can be demonstrated with the examples below:

minimum: ? - minma :?	من ماء
Neem dikum – minba dikum	من بعضكم
Tninkum - minkum	منكم
minka-mirjka	منك
Minni dies - minni^dead	من نعمة
minanna:ri - minanna:r	من النار

mindabbatirj - mindabbati   من دربة

Min /n/   ----►m
                        ----►n
                        ----►y
                        ----►l
                        ----►r

k	k		k
+ anterior	+ anterior		+ consonotal
+ coronal	+ coronal	-----------	+ anterior
+ nasal n	+ nasal m		- sonorant
			- coronal
			+ make a sound b

k	k		K
+ anterior	+ high		- sonorant
+ coronal	+ back	-----------	+ high
+ nasal n	+ nasal n		- anterior
			- coronal
			+ make a sound k

k	k		K
+ anterior	consonant		- consonant
+ coronal	+ sonorant	-----------	+ sonorant
+ nasal n	+ anterior y		- anterior
			- Malar y

k	k		K
+ anterior	+ Sonoran		+ sonorant
+ coronal	+ Anterior	-----------	+ anterior
+ nasal n	+ Coronal		+ coronal
	+ Make sound		+ make a sound
	+ Laterals l		+ lateral l

k	k		K
+ anterior	+ Sonoran		+ sonorant
+ coronal	+ Anterior	-----------	+ anterior
+ nasal n	+ Coronal		+ coronal
	+ Make sound		+sound
	- Malar r		- Malar r

The assimilation process in Arabic has several levels:

1.) Filter and smooth

When smoothed and loudened sounds meet, one of them is reversed. Example (if al) of the word (fa'ala). Additionally, letters j (waw) sound is sharpened, while the letter (ta') is softened j

2.) Transfer of air flow from mouth to nose or vice versa

The nature of sound is divided into two, namely the first exhalation of air through the mouth when speaking and is generally found in Arabic such as dal and la'. Both of them come out through the nose like the letters ? min and nun. The letters m ba turn into ? (mim) Jor the sound that passes from the mouth (ba') changes to the nasal sound (miim) as the combination of nin and lam in the example

3.) Sound makhraj transfer

A form of assimilation that is seen from the original makhraj to another makhraj, there are many replacements for the letter ^ with characteristics typical of modern Arabic dialects such as the Egyptian pronouncing (4->j±kU) replaced with (4j)

4.) Changes in the nature of sounds from loud to soft sounds. This assimilation is often found in idgham

Idgham is divided into 3, namely (1) mutamasilain idgham, namely the sound of the first letter is inserted or merged into the sound of the second letter which is accompanied by a ttasydid sound and is not buzzed. Example: read and recited (2) Idgham mutajanisasin., namely two letters of the same type as the first letter inserted into the second letter accompanied by tasydid. (3) Tdgham mutaqaribain, namely two different letters, tap! adjacent to the makhraj, the first letter is inserted into the second letter accompanied by tasydid [8] .

Syllabus Structure Process

The word structure process includes consonant release, vowel release, consonant insertion, vowel insertion and consonant blending. One of example that is vocal release :

qalamU - qalama	قلم – قلما
us:bU ™ - us:ba	كتاب – كتابا
Muslim U- muslima	مسلم – مسلما
registerU - registera	دفتر – دفترا
chapter U- ba:ba	باب – بابا

Vocal Release

1. // -------------------   /---➤---------------#
2. // -------------------   /---➤---------------#

Phonological Rules

In the process of forming words, often combinations of adjacent and adjacent mortems will sometimes cause changes. The phonological rules that are created can mark a phonological process that occurs from the expression of an appropriate error or situation. In this connection, there are four rules that need to be developed, namely (1) rules that change self, (2) rules for removal and insertion, (3) rules for changing order and merging, and (4) rules for using variables.

Based on Arabic phonology, the structural processes that occur are:

[ba:la] 'has urinated   become[yabu:lu] ' is urinating
[ba:ra] 'has failed   to become[yabu:ru| ' is failing
[sa:la] 'has risen   to[yasu:lu] ' is rising
[sa:ra] 'has taken   to be[yasu:lu] ' is taking
[qa] 'has hollowed out   becomes[yaqu] is hollowing out
[qa a] 'has made the pen   become[yaqu u] ' is making the pen become
[yaqu:mu]' is standing   becomes   [yaku:mu] ' is being

The phonological rules are:
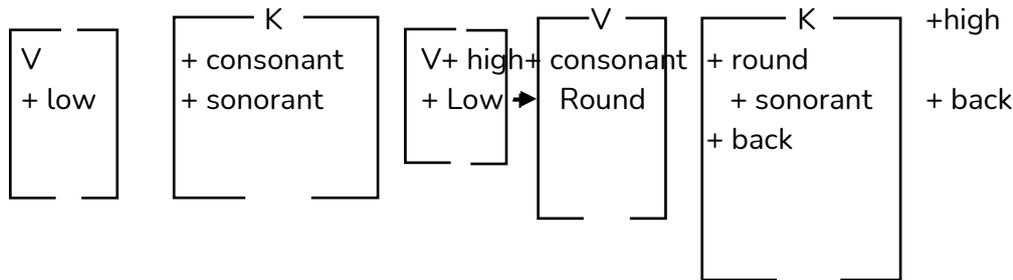
Structural process other is :

 [ba:ta] ' has overnight becomes [yabu:tu] moderate overnight
 [ba:ra]   becomes [yabi:du] medium damaged

Rule phonological is :
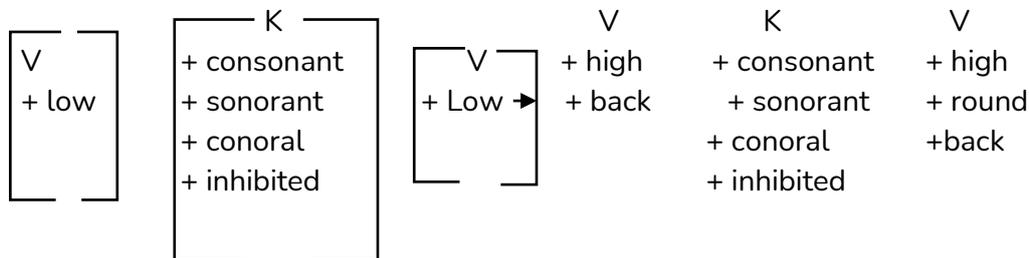
Structural process other is :
[an] add [yakurlu] to   [anyaku]
[an] plus [ya riba] becomes [anya<<riba]

Phonological aids is :
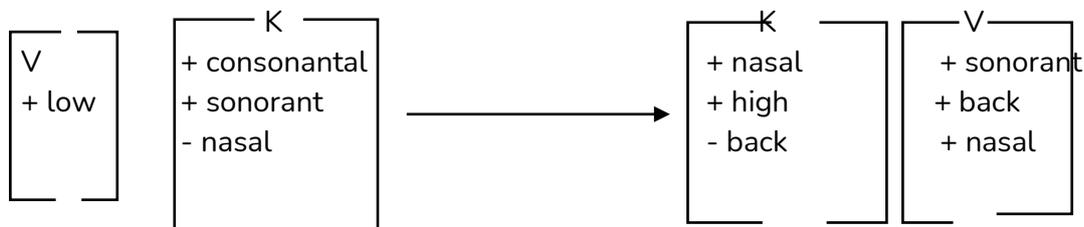
CONCLUSIONS

Phonology is a branch of linguistics that includes phonetics and phonemics. Phonetics is a science that examines the characteristics of the production of language sounds. Phonemics is the study of the structural rules of sound segments in relation to sound units in language, procedures for finding the phonemes of a language. The production of human speech or speech can be produced by involving at least four things, namely: (a) Speech organs, (b) Air flow mechanism (MAU), (c) The role of the glottis, and (d) The role of the velum. There are several steps that must be taken in analyzing data on the phonological process, namely: 1) Identify segments by describing consonants, 2) Classify segments by naming consonants and naming vowels, 3) Identify phonemes by grouping sounds in the same environment (KLS) , grouping sounds in the same environment (KLS) and grouping sounds in similar environments (KLM), or with complementary distribution (DK), and 4) Registering the segments that have become a phoneme. According to generative phonology, there are still smallest elements in identifying phonemes other than inhibitory, bilabial, alveolar, fricative, and so on, namely: consonantal, sonorant, syllabic, malar and so on.

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