

Assimilation in Classical Arabic

A phonological study

By

Abdulrahman Ibrahim Alfozan

A thesis submitted to the Faculty of Arts of the
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ARABIC SOUNDS

1. CONSONANTS

Arabic symbol	Translite- ration	Phonetic Transcription	Phonetic Values
ا	ʾ	ʾ	voiceless glottal stop
هـ	h	h	voiceless glottal fricative
ح	ḥ	ḥ	voiceless pharyngeal fricative
ع	ʿ	ʿ	voiced pharyngeal fricative
خ	kh	x	voiceless uvular fricative
غ	gh	ɣ	voiced uvular fricative
ق	q	q	voiced uvular stop
ك	k	k	voiceless velar stop
ج	j	j	voiced palatal stop
ي	y	y	voiced alveo-palatal semi-vowel
ش	sh	ʃ	voiceless alveo-palatal fricative
د	d	d	voiced alveolar stop
ت	t	t	voiceless alveolar stop
ط	ṭ	ṭ	voiced emphatic alveolar stop
ل	l	l	voiced alveolar lateral
ر	r	r	voiced alveolar trill
ض	ḍ	ḍ	voiced emphatic alveolar fricative
ن	n	n	voiced alveolar nasal
ص	ṣ	ṣ	voiceless emphatic alveolar fricative
ز	z	z	voiced alveolar fricative
س	s	s	voiceless alveolar fricative
ظ	ẓ	ẓ	voiced emphatic interdental fricative
ذ	th	ð	voiced interdental fricative
ث	th	θ	voiceless interdental fricative
ف	f	f	voiceless labiodental fricative
ب	b	b	voiced bilabial stop
م	m	m	voiced bilabial nasal
و	w	w	voiced bilabial semi- vowel
		ʒ	ʒ approximated to z

II

2. Vowels

— فتحة		a
— كسرة	Short vowels	i
— ضمة		u
ألف ا		ā
ياء ي	Long vowels	ī
واو و		ū
آلف آ		ā̃
يآ ي	Over-length vowels	ī̃
وآ و		ū̃
ألف الإمالة الخفيفة	Alif al-imālah al-khafīfah	ē
ألف الإمالة الثقيلة	Alif al-imālah ath-thaqīlah	ē̃
فتحة الإمالة الخفيفة	Fatḥat al-imālah al-khafīfah	e
فتحة الإمالة الثقيلة	Fatḥat al-imālah ath-thaqīlah	ẽ
ألف التّفخيم	Alif at- tafkhīm	ɔ̄
فتحة التّفخيم	Fatḥat at- tafkhīm	ɔ̄̃
الكسرة المشمّة ضمة	Kasrah approx. to ḍammah	ɪ̄
الضمة المشمّة كسرة	Ḍammah approx. to kasrah	ʊ̄

III

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Contents

Introduction	1
1. Arabic Sounds:	3
1.1. Consonants:	4
1.1.1. Place of articulation	4
1.1.2. Manner of articulation	6
1.2. Non-cardinal sounds:	11
1.2.1. Accepted sounds:	13
1.2.1.1. Consonants	13
1.2.1.2. Vowels	18
1.2.2. Rejected sounds	19
1.3. Vowels	26
1.4. Semi-vowels	37
1.5. Distinctive features	38
2. Types of Assimilation:	48
2.1. Introduction	48
2.2. Direction of assimilation:	72
2.2.1. Progressive:	73
2.2.1.1. <i>Ifta'ala</i> forms:	74
2.2.1.1.1. $t \rightarrow \text{ṭ}$	75
2.2.1.1.2. $t \rightarrow d$	78
2.2.2. Regressive :	80
2.2.2.1. The definite article / <i>al -</i> /	83
2.2.2.2. <i>Ifta'ala</i> forms: (w,y) $\rightarrow t$	91
2.2.2.3. Nasal assimilation	94
2.2.3. Coalescent	108
2.3. Complete vs. partial assimilations:	110
2.4. Distant assimilation	113
2.5. Historical assimilation	123
3 . Sounds in Combination:	130
3.1. Consonants:	133
3.1.1. <i>Ta'rif al-ḥurūf</i>	133
3.1.2. <i>Idghām al-ḥurūf</i>	154

31..2.1. <i>Ḥalqī</i> sounds	155
3.1.2.2. <i>Aqṣā al-fam</i> .sounds	160
3.1.2.3. <i>Wast al-fam</i> .sounds	162
3.1.2.4. <i>Shafawī</i> sounds	181
3.1.2.5. General Remarks	182
3.2. Vowels:	195
3.2.1. Introduction	195
3.2.2. <i>Imālah</i>	213
3.2.3. Vowel harmony	236
3.2.4. Lengthening & shortening	248
3.2.5. <i>Alif at-tafkhīm</i> / 5 /	259
Conclusion:	263
Bibliography.....	268

Abstract

This thesis deals with the phenomenon of assimilation, a natural phonological process, in classical Arabic. It consists of three chapters:

The first chapter of the thesis deals with the Arabic sounds in isolation: their points of articulation and manners of articulation with reference to the views of both Arab linguists and scholars of *Tajwīd*. Secondary sounds, both accepted and rejected, are mentioned too. A brief discussion is devoted to the distinctive features, with particular reference to those that seem to have been described inaccurately by some early or modern linguists.

The second chapter deals with the definition and different types of assimilation. The term *idghām*, which has been rendered as "assimilation" is, in fact, narrower in application than the English term; other topics and sub-topics in Arabic grammar that subsume aspects of assimilation are also discussed. The direction of assimilation, whether the influence comes regressively or progressively or in both directions is dealt with, with detailed examples, mostly from the *Qurʾān*. A brief discussion of both complete and partial assimilation is given followed by a discussion of distant assimilation, with particular attention being given to the so called "*al-Idghām al-Kabīr*". The last sub-chapter here deals with the history of sound changes in Arabic.

The third chapter is the main part of the thesis. It deals with Arabic sounds in combination. Consonants are discussed first,

VII

from two points of view: the occurrence or non-occurrence of certain consonants with each other within the same roots, and the influence of certain sounds upon others when these occur adjacently.

Vowels are then discussed in detail, particularly with respect to the best-known phenomena associated with them: *imālah*, vowel harmony, lengthening and shortening, and *tafkhim*. Under *imālah*, we consider whether the *alif al-imālah* is an independent phoneme, a dialectal variant, or an allophone of the actual / ā /. When this *alif* is likely to occur and when it is likely to be inhibited is also seen. In the section on vowel harmony the question as to whether there is systematic harmony is confronted. In the section on lengthening and shortening, the circumstances in which these two phenomena occur are discussed, with particular attention to the overlengthened vowels. Finally, *alif at-tafkhīm* is investigated, to see whether this vowel / 5 / is an independent phoneme, a dialectal variant, or an allophone of the actual / ā / .

Introduction

Arabic phonetics and phonology have been studied extensively by both early and modern linguists. The phenomenon of "assimilation" is included in their general work; however, deeper study of this phenomenon is needed. In this work, we attempt to fill this gap to some extent; however, a comprehensive further investigation is still needed, especially where the behavior of certain sounds is not satisfactorily explained. Largely because of the very great number of contradictory examples reported.

The study of phonetics among the Arabs dates back, together with their other linguistic studies, such as grammar, lexicography, and rhetoric, to the first century of the *Hijrah* (A.H.). It took as its base the *Qur'ān*, and the principal reason for its development was the desire to preserve the text of the *Qur'ān* from corruption. It manifested itself at that time chiefly in the science of *tajwīd* (correct recitation of the *Qur'ān*).

al-Khalil was the first of those whom we know to have discussed the sounds of Arabic, although he did not devote any separate section of this work to the topic. Sībawayh has one chapter on sounds, *al-idghām*, in which he looks into the matter in more depth than his master, al-Khalil, many of whose ideas he also presents.

Ibn Jinnī (-392 A.H.) was the first to devote a whole work to phonetics, *Sirr Ṣināʿat al-ʿIrāb*¹. It remains one of the best-known Arabic works on the subject.

A large proportion of the examples employed are taken from the *Qurʾān*. This is because linguistic, and particularly phonetic, phenomena are better documented in connection with *Qurʾān* recitation than with any other form of utterance.

Before we start the discussion of the phenomenon of the assimilation in classical Arabic, it will be helpful to consider the pronunciation of Arabic sounds in isolation.²

From this we shall be better able to understand the phenomenon of assimilation in Arabic and why it occurs with some sounds but not with others.³

1- Ibn Jinnī says in this book (1 / 59): " I know no one of our companions (he probably meant the linguists belonging to the *Baṣrah* school) who did in this field as I do and gave it full discussion as I do". He is right in this claim, because even after him nobody gave phonetics as much attention as he did.

2- The different dialects spoken in the Arab world nowadays are outside the scope of this thesis, since we are dealing with classical Arabic.

3- Sibawayh, the father of Arabic grammar, described Arabic sounds before he dealt with *idghām* incorporation or gemination which is considered as part of assimilation. The other kinds of assimilation are found listed under different headings in Arabic grammar such as *ibdāl* (substitution). After he has described Arabic sounds in terms of their point of articulation, Sibawayh says: " I have described the (sounds associated with) the letters of the alphabet in this way simply in order that you may know in which *idghām* is appropriate and permissible and in which it is inappropriate and impermissible." (*al- Kitāb*, 2 / 406-407) Most of the grammarians followed him in this way.

Chapter One

Chapter one

Arabic sounds

Arabic has twenty-eight cardinal consonants and six cardinal vowels three of which are short and three are long. The total number of Arabic sounds is thirty-four.¹

There are only thirty-two signs in the Arabic writing system because / w / and / y / have the same symbol as / ū / and / ī / respectively. Moreover, the short vowels, namely / a, i, and u / were not written in Arabic orthography up to the second century A.H. (after the prophet Muḥammad's migration to the city of Madīnah). indeed, they are still absent in most Arabic hand-written and printed material.

Moreover, the Arabs do not use letters to indicate short vowels except in one word, namely / ʔulī / (" they", the third person feminine plural pronoun), where they use / ū / instead of / u /.²

On the other hand, the long vowel / ā / was not shown in the Arabic script for a long time. It is still not written in many cases in the Qurʾānic script, nor in some other Arabic words such as / hāǧā / (this) / Allāh / (God) and / ar-Raḥmān / (the merciful).

¹ In Arabic, there are six accepted non-cardinal sounds, and eight rejected non-cardinal sounds as have been described by Arabic grammarians and phoneticians such as Sibawayh, Ibn Jinni, and others. They are either stylistic, dialectal, contextual or free variants. There will be a detailed discussion of these in the ensuing chapter.

² J. Cantineau (1966), 173.

Furthermore, the Arabs sometimes employ short vowels instead of long ones, as in the use of / i / for / ī / e. g. / tu^cṭi / (you give), / al-ghawani / (alḡawāni) (the beautiful girls), / yā^cibādi / (Oh my servants). They are instead of / tu^cṭī /, / al-ghawānī / and / yā^cibādī / respectively; / u / for / ū / e. g.: / an-nujum / (stars), / al-ḡuluq / (throats) instead of / an-nujūm /, and / al-ḡulūq / respectively.³

This fact about the way of writing short vowels does not affect our discussion since we are dealing with the sounds and pronunciation and not with orthography.

We shall discuss consonants, vowels, and semi-vowels separately; however, neither the early Arabic linguists nor the scholars of *tajwīd* always separate the three types of sounds in their discussion.

The Arabs have described Arabic sounds regarding both *makhraj* (point) and *ṣifah* (manner) of articulation in a way that is similar to that of the modern linguists.

1.1 Consonants:

1.1.1. Points of articulation:

The ordering of Arabic sounds from the throat forwards to the lips made by various Arabic scholars :

al-Khalīl Ibn Aḥmad (- 175 A.H.) :

ʿ, ḥ, h, x, ʁ – q, k – j, š, ḍ – ṣ, s, z – ṭ, d, t – ḏ, ḏ, ʿ – r, l, n – f, b,
m – w / ū, a, y / ī, ʔ.^{4. 5}

³ Ibn Jinnī , *al-khaṣāʾiṣ* , 3 / 133-134.

Sībawayh (-180 A.H.) :

ʾ, ā, h - ʿ, ḥ - ṣ, ṣ - q - k - j, š, y - ɖ - l - n - r - ɗ, d, t - z, s, ʃ - ʒ,
 ʒ, ʔ - f - b, m, w / ū.⁶

al-Mubarrid (- 285 A.H.) :

ʾ - h, ā - ḥ, ʿ - ṣ, ṣ - q - k - š - j - ɖ - l - n - ɗ, t, d - s, ʃ, z - ʒ, ʔ,
 ʒ, f - w, b, m.⁷

Abū ʿAlī al-Qālī (- 356 A.H.) :

h, ḥ, ʿ, x, ṣ - q, k - ɖ, j, š - l, r, n - ɗ, d, t - ʃ, z, s - ʒ, ʒ, ʔ - f, b,
 m - w, ā, y.⁸

Ibn Jinnī (- 392 A.H.) :

ʾ, ā, h - ʿ, ḥ - ṣ, ṣ - q - k - j, š, y - ɖ - l - n - r - ɗ, d, t - ʃ - z -
 s - ʒ, ʒ, ʔ - f - b, m, w.⁹

Ibn Sinān al-Khafājī (- 466 A.H.)

ʾ, ā, h - ʿ, ḥ - ṣ, ṣ - q - k - j, š, y - ɖ - l - n - r - ɗ, t, d - ʃ, z, s -
 ʒ, ʔ, ʒ - f - b, m, w.¹⁰

az-Zamakhsharī (- 538 A.H.)

ʾ, h, ā - ʿ, ḥ - ṣ, ṣ - q - k - j, š, y - ɖ - l - n - r - ɗ, d, t - ʃ, z, s -

⁴ He lists the sound / ʾ / at the end with the vowels, although he believes that it is articulated in the deepest part of the pharynx, (*al-ʿAyn*, 1 / 52). However, he also says that / ʿ /, after which he named his lexicographical work, is the deepest sound.

⁵ *al-ʿAyn*, 1 / 57-58.

⁶ *al-Kitāb*, 2 / 405.

⁷ *al-Muqtaḍab*, 1 / 192-193.

⁸ *al-Bārī*, 16.

⁹ *Sirr ʃināʿat al-irāb*, 1 / 46-48.

¹⁰ *Sirr al-faṣāḥa*, 29-30.

ḡ, ḡ, ʕ _ f _ b, m, w.¹¹

Ibn Yaʿīsh (- 643 A.H.)

ʔ, h, ā _ ʕ, ḥ _ ḡ, x _ q, k _ j, š, y _ ɖ _ l _ n _ r _ ɗ, d, t _ ʂ, z _ ʤ,

ḡ, ʕ _ f _ b, m, w.¹²

Ibn al- Jazarī (- 833 A. H.)

ā, ū, ī _ ʔ, h _ ʕ, ḥ _ ḡ, x _ q _ k _ j, š, y _ ɖ _ l _ n _ r _ ɗ, d, t _ ʂ,

s, z _ ʤ, ḡ, ʕ _ f _ w, b, m _ .¹³ *

1. 1. 2. Manner of articulation:

1. Sibawayh :¹⁴

Stops : ʔ, q, k, j, ɗ, t, d, b.

Fricatives : h, ḥ, ḡ, x, š, ʂ, ɖ, z, s, ʤ, ʕ, ḡ, f.

Resonants¹⁵ : ʕ (l, n, r, w, y, m).¹⁶

Voiced : ʔ, ā, ʕ, ḡ, q, j, y, ɖ, l, n, r, ɗ, d, z, ʤ, ḡ, b, m, l.

Voiceless : h, ḥ, x, k, š, s, t, ʂ, ʕ, f.

2. Ibn Jinnī¹⁷

Stops : ʔ, q, k, j, ɗ, d, t, b.

¹¹ *Sharḥ al- mufaṣṣal*, 10 / 128.

¹² *Sharḥ al-mufaṣṣal*, 10 / 123-125.

¹³ *an-Nashr fi al -qiraʾat al-ʿashr*, 1 / 199-200.

* Sounds that are grouped between dashes (_ _) have the same place of articulation but they are not necessarily in order.

¹⁴ *al- Kitāb*, 2 / 405-406.

¹⁵ Resonants are classified by the Arabs as between stops *Shadidah* and fricatives *Rikhwah*.

¹⁶ Sibawayh did not specify the sounds in brackets as resonants. However, this is to be understood from the fact that they are listed neither under stops nor under fricatives.

¹⁷ *Sirr ṣinaʿat al-irāb*, 1 / 60-61.

Fricatives : h, ḥ, ḡ, x, š, ṣ, ḍ, z, s, ẓ, ẓ̄, ʿ, f.

Resonants : ā, ʿ, y, l, n, r, m, w.

Voiced : ʔ, ā, ʿ, ḡ, q, j, y, ḍ, l, n, r, ṭ, d, z, ẓ, ẓ̄, b, m, w.

Voiceless : h, ḥ, x, k, š, ṣ, t, s, ʿ, f.

3. Ibn Sinān al-Khafājī ¹⁸

Stops : ʔ, q, k, j, ṭ, d, t, b.

Fricatives : h, ḥ, ḡ, x, š, ḍ, ṣ, s, z, ẓ, ẓ̄, ʿ, f.

Resonants : ʿ, ā, y, l, n, r, m, w.

Voiced : ʔ, ā, ʿ, ḡ, q, j, y, ḍ, l, n, r, ṭ, d, z, ẓ, ẓ̄, b, m, w.

Voiceless : h, ḥ, x, k, t, š, ṣ, s, ʿ, f.

4. az-Zamakhsharī ¹⁹

Stops : ʔ, q, k, j, ṭ, d, t, b.

Fricatives : h, ḥ, ḡ, x, š, ḍ, ṣ, s, z, ẓ, ẓ̄, ʿ, f.

Resonants : ʿ, ā, y, l, n, r, m, w.

Voiced : ʔ, ā, ʿ, ḡ, q, j, y, ḍ, l, n, r, ṭ, d, z, ẓ, ẓ̄, b, m, w.

Voiceless : h, ḥ, x, k, t, š, ṣ, s, ʿ, f.

5. Ibn Yaʿīsh ²⁰

Stops : ʔ, q, k, j, ṭ, t, d, b.

Fricative : h, ḥ, ḡ, x, š, s, ṣ, z, ḍ, ẓ, ẓ̄, ʿ, f.

Resonants : ʿ, ā, n, r, l, y, m, w.

Voiced : ʔ, ā, ʿ, ḡ, q, j, y, ḍ, l, n, r, ṭ, d, z, ẓ, ẓ̄, b, m, w.

Voiceless : h, ḥ, x, k, t, š, s, ṣ, ʿ, f.

6. Ibn al-Jazarī ²¹

¹⁸ *Sirr al-faṣāḥah*, 29-30.

¹⁹ *Sharḥ al-mufaṣṣal*, 10 / 128.

²⁰ *Sharḥ al-mufaṣṣal*, 10 / 129.

Stops	: ʔ, q, k, ʈ, t, d, j, b.
Fricatives	: h, ɸ, ʁ, x, š, ʃ, s, z, ɖ, ʒ, ʤ, ʥ, ʕ, f.
Resonants	: ʕ, l, r, n, m, (w, y) .
Voiced	: ʔ, ā, ʕ, ʁ, q, j, y, ɖ, l, n, r, ʈ, d, z, ʒ, ʤ, ʥ, b, m, w.
Voiceless	: h, ɸ, x, k, t, š, ʃ, s, ʕ, f.

As regards the preceding matrices, it is to be noticed that:

a. The linguists whose schemes are presented here cover a substantial period of time:

1. Second century A.H. : al-Khalīl and Sībawayh
2. Third century A.H. : al- Mubarrid
3. Fourth century A.H. : al-Qālī and Ibn Jinnī
4. Fifth century A.H. : Ibn Sinān al-Khafājī
5. Sixth century A.H. : az-Zamakhshari
6. Seventh century A.H. : Ibn Yaʕīsh
7. Ninth century A.H. : Ibn al-Jazarī

b. They specialized in different aspects of the subjects : ²²

1. Lexicography : al-Khalīl and al-Qālī
2. Grammar : Sībawayh and al-Mubarrid
3. Phonetics : Ibn Jinnī
4. Rhetoric : Ibn Sinān al-Khafājī
5. *Qirāʾāt* : Ibn al-Jazarī
6. *Tafsīr* : az-Zamakhshari

²¹ *an-Nashr*, 1 / 202-203.

²² Sometimes it is difficult to limit the ancient scholars' fields of interest. It is normal to find somebody who could be described as either a grammarian, phonetician or lexicographer, such as al-Khalil. For that reason, we shall focus only on the scholar's major field of interest.

There is shown unanimous agreement as to the classification of the sounds although not as to their order:

- a. Stops : ʔ, q, k, j, t̤, t, d, and b.
- b. Fricatives : h, ḥ, ʁ, x, š, ṣ̌, s, z, d̤, ǧ, ǧ̣, ʕ, and f.
- c. Resonants²³ : nasals (n, m) liquids (l, r), and semi-vowels (y, w).²⁴
- d. Voiced : ā, ʕ, ʁ, q, j, y, d̤, l, r, n, t̤, d, z, ǧ, ǧ̣, b, m, a, w.²⁵
- e. Voiceless : h, ḥ, x, k, t̤, š, s, ṣ̌, ʕ, and f.

In describing sounds according to their point of articulation, they all proceed from those pronounced furthest back in the throat to those pronounced nearest to the lips. There are some differences between them as to which sounds are articulated precisely where, especially the back sounds. Thus they just almost entirely repeat one another's ideas, except in some clear cases, such as the consideration of / ʕ / as neither stop nor fricative. In the case of contemporaries giving different descriptions of the same sound, we are obliged to assume that these, if accurate, must apply to different regions.

²³ All of them consider / ʕ / as a resonant and not as a fricative. This appears strange; they seem simply to be repeating one another.

²⁴ Almost all the mentioned scholars list the long vowel / ā / as a resonant (neither stop nor fricative), which is correct, but it should be discussed with the other long vowels / ū and i / separately. The only scholar who does mention all the three vowels here is Ibn al-Jazari.

²⁵ They do not mention the other two vowels, namely / ū and i /, as voiced because they did not have separate symbols for them. As mentioned before, they class them together with the semi-vowels / w and y /, and so they find it enough to indicate them together as voiced.

(chart of Arabic consonants)

place of articulation ↓ manner of articulation →												
	bilabial	labiodental	interdental		alveolar		alveopalatal	palatal	velar	uvular	pharyngeal	glottal
stops	vl.				ت t				ك k			ء ʔ
	vd	ب b			د d	ط ṭ		ج j		ق q		
fricatives	vl	ف f	ث θ		س s	ص ṣ	ش š			خ x	ح ḥ	ه h
	vd		ذ ḏ	ظ ṭh	ز z	ض ḏ				غ ġ	ع ʕ	
sonorants:	nasals	م m			ن n							
	lateral				ل l							
	trill				ر r							
	glides	و w					ي y					

where : n.e. = non-emphatic
em. = emphatic

Generally speaking, modern studies in Arabic phonetics show that Ibn Jinni's description of Arabic sounds is almost identical to that of Sībawayh's except that the former states that / q / is articulated farther back than / k / and that / y / is articulated further back than / ɖ /. Clearly both had a competent understanding of articulatory phonetics and were able to give an adequate description of Arabic consonants.

The most probable reason for the comparatively early date of such experts among Arabic grammarians²⁶ is that linguistic studies originated in attempts to preserve an unaltered text and an authentic oral presentation of the Qurʾān.²⁷

Now we come to the question of the method they used to discover where a sound is articulated. The answer is to be found in Ibn al-Jazarī's statement: " The method of determining the point of articulation of a sound is to produce it after *hamzat l-waṣl* with *sukūn* or *tashdīd*. This is the clearest way in which the characteristics of a sound may be appreciated ".²⁸

However, the use of any sound before the one in question is rejected by modern Arabic linguists, on the grounds that it will inevitably modify the point of articulation.²⁹

1.2. Non-cardinal sounds:

In addition to the thirty-four Arabic cardinal sounds, Arabic phoneticians list six more accepted non-cardinal sounds, and eight rejected non-cardinal sounds³⁰. They are *furūc*

²⁶ The Arabs studied linguistics for more than a thousand years before Westerners did. G. Bergsträsser says: " No nations preceded Westerners in this field (Linguistics) except two nations, namely the Indians and the Arabs." (*at-Taṭawwur an-naḥwi lil-lughah al-ʿarabiyyah*, 5).

²⁷ Firth says " Phonetics grew to serve two holy languages: they are Sanscrit and Arabic." A. ʿUmar, *al-Baḥth al-lughawi ʿind al-ʿarab*, 79.

²⁸ *an-Nashr*, 1 / 199. In fact, Abū Shāmah gives a similar statement concerning this method before Ibn al-Jazarī, but without mentioning *tashdīd*. (see *Ibrāz al-maʿāni min ḥirz al-amāni*, 745).

²⁹ I. Anis, *al-Aṣwāt al-lughawiyyah*, 20.

(branches) of the original sounds. They may be considered as dialectal variations or allophones of other sounds as an outcome of assimilation in certain phonetic environments.

The accepted non-cardinal sounds are accepted because they are adopted in the reading of the holy *Qurʾān* and in elevated speech.

The rejected non-cardinal sounds³¹ were used by some foreigners who accepted Islam and learned Arabic. They were also used by some Arabs who lived with these foreigners and spoke their languages³².

The non-cardinal sounds, both accepted and rejected, have no special symbols in the Arabic writing system³³. This fact leads Arabs not to consider their point of articulation or, in some cases their manner of articulation. In fact, the only one the point of articulation of which is described is: *an-nūn al-khafīfah* (the light / n /), as being the nasal cavity.³⁴

³⁰ See *al-Kitāb*, 2 / 404, *Sirr ṣināʿat al-irāb*, 1 / 46, *an-Nashr*, 1 / 201-202, and *Sharḥ al-mufaṣṣal*, 10 / 125-128...etc.

³¹ We shall see in our examples of assimilation how the Arabs dealt with these non-approved sounds practically, whether they accepted them all or just some of them.

³² *Sharḥ al-mufaṣṣal*, 10 / 128.

³³ This is true in the early stages; however, later, symbols indicating the sound of *imālah*, are found in certain manuscripts and printed books. These symbols are: *kasrah* before below the *alif*: a small *muʿayyan* (rhombus) written sometimes in red color, below the *alif*; the word *mil*, in red, written above the *alif* (for more details, see A. Shalabi, *Fi ad-dirāsāt al-qurʾāniyyah wal-lughawiyyah: al-imālah fi al-qirāʾāt wal-lahajāt al-ʿArabiyyah*, 369- 382). Nowadays, the *muṣḥafs* used in North Africa have a dot below the *alif* in places where *imālah* is read by Warsh ʿan Nāfiʿ.

1.2.1. The accepted derived sounds:

The accepted derived sounds are six ³⁵, four consonants and two vowels, as listed below:

1.2.1.1. Consonants:

1. *an-nūn al-khafifah* (the light / n /), *an-nūn al-khafiyyah* (the unclear / n /), or *an-nūn as-sākinah* (vowelless / n /), pronounced in certain phonetic environments, i. e. when followed by the fifteen sounds which are called the letters of *ikhfāʾ* (hiding) ³⁶ : ṣ, ʿ, ʔ, k, j, š, q, s, d, ṭ, z, f, t, ḍ, and ʒ, ³⁷. These sounds may be in the same word as the *nūn* or may begin the following word, if the *nūn* is the ultimate sound of the previous word. Here are some examples:

ʾanṣar (nose),

ʾinḵuntum (If you (masc. plu.) are).

This *nūn* is recommended in the reading of the *Qurʾān*. However, Ibn al-Jazarī does not mention it as one of the secondary sounds of Arabic.

2. the *hamzah bayna bayna* as Sibawayh calls it ³⁸, or *al-hamzah al-khafīfah* (the light *hamzah*) as Ibn Jinnī calls it ³⁹, or *al-musahhalah* (the easy *hamza*) ⁴⁰ as Ibn al-Jazarī

³⁴ See for example *al-Kitāb*, 2 / 405, *al-Muqtaḍab*, 1 / 193.

³⁵ Ibn al-Jazarī (*an-Nashr* 1 / 202) adds the emphatic / ʾ / .

³⁶ *Sharḥ al-mufaṣṣal*, 1 / 126.

³⁷ There will be further discussion of this point in the following chapter on assimilation.

³⁸ *al-Kitāb*, 2 / 163.

calls it, or half-way articulated ⁴¹ as K. Semaan calls it. Here is an example: the glottal stop is pronounced as halfway between *muḥaqqaqah* (the true glottal stop) and the long vowel corresponding to the short vowel following the *hamzah* / ʾ /. If the *hamzah* is followed by / a /, it will be pronounced as between / ʾ / and / ā /, Similarly, if it is followed by / i / or / u /, it will be pronounced between / ʾ / and / ī / or / ū / respectively ⁴². Hence it can occur in intervocalic positions (v ʾ v) or between vowel and consonant but it can not occur in an initial position ⁴³. Examples of this *hamzah* are:

saʾala (he asked),

suʾila (he was asked),

mustahziʾūn (Jesting).

3. *shīn* / š / approximated to *jīm* / j / ⁴⁴.

The Arabic / š / is a voiceless alveo-palatal fricative while / j / is a voiced palatal stop. D. Bolinger describes the English / j / as a voiced stop ⁴⁵ just as it is in Arabic. The

³⁹ *Sirr šināʿat al-irāb*, 1 / 46.

⁴⁰ *an-Nashr*, 1 / 201.

⁴¹ Semaan Khalil. "Sibawayh: Islam's contribution to the History of Linguistic Science", *al-Lisān al-ʿArabi*, 13 April, 30 (1974).

⁴² *al-Kitāb*, 2 / 163-164.

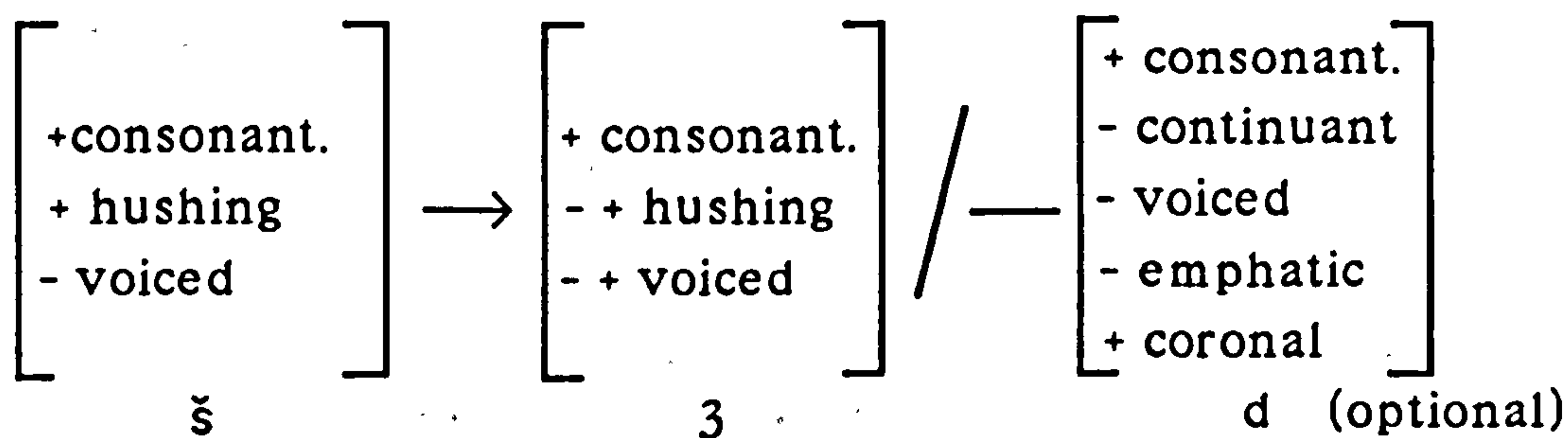
⁴³ The other kinds of *hamzah* will be seen later.

⁴⁴ Makki Ibn Abi Ṭālib does not mention this sound among the accepted sounds in *ar-Riʾayah li-tajwid al-qirāʾah wa taḥqiq lafḏ at-tilāwah*, 107 - 112.

English / ʒ / as in pleasure is formed like / ʃ / except that the air pressure is weaker and the vocal cords are made to vibrate so that voice is produced during the articulation of the sound⁴⁶.

The English sound / ʒ / is closer to / ʃ / than the other English sound / j /. A.C. Gimson says: "The oppositions between / ʃ / and / ʒ / are rare."⁴⁷

We can conclude that the Arabic / ʃ / which is approximated to / j / is similar to the English / ʒ /. The sound / ʃ / moves back towards the sound / j /. The word ʔašdaq (having a large mouth) will be pronounced as [ʔaʒdaq]. To state a form for this movement, we may say⁴⁸:



4. ʃād / ʒ / approximated to zay / z /:

This is called aṣ- ʃād al-mushammah⁴⁹; it has some

⁴⁵ *Aspects of Language*, 79.

⁴⁶ *An Outline of English Phonetics*, 192.

⁴⁷ *An Introduction to the Pronunciation of English*, 190.

⁴⁸ Bakalla chooses the phonetic symbol [ʒ] in his M.Phil. Thesis, University of London., p. 205, while he chooses [ċ] in his article "Some Remarks on Sibawayh's Contribution to Phonetics", *Al-Lisān Al-Arabi*, 18, 1, p. 28.

features of / z /, and is pronounced as between pure *ṣād* / ṣ / and *zay* / z /.

/ ṣ / is a voiceless emphatic⁵⁰ alveolar fricative, while

/ z / is a voiced non-emphatic alveolar fricative.

The approximation of / ṣ / to / z / is described thus by Ibn Jinni "The voicelessness of the *ṣād* approximated to *zay* decreases and it acquires some voicedness by becoming close to / z /"⁵¹. This occurs under the influence of another sound in one particular environment, namely before the sound / d /, which is voiced. The form for this movement may be designated

⁴⁹ "*Ishmām* (approximation), to the *qurrā*, indicates one of these four things:

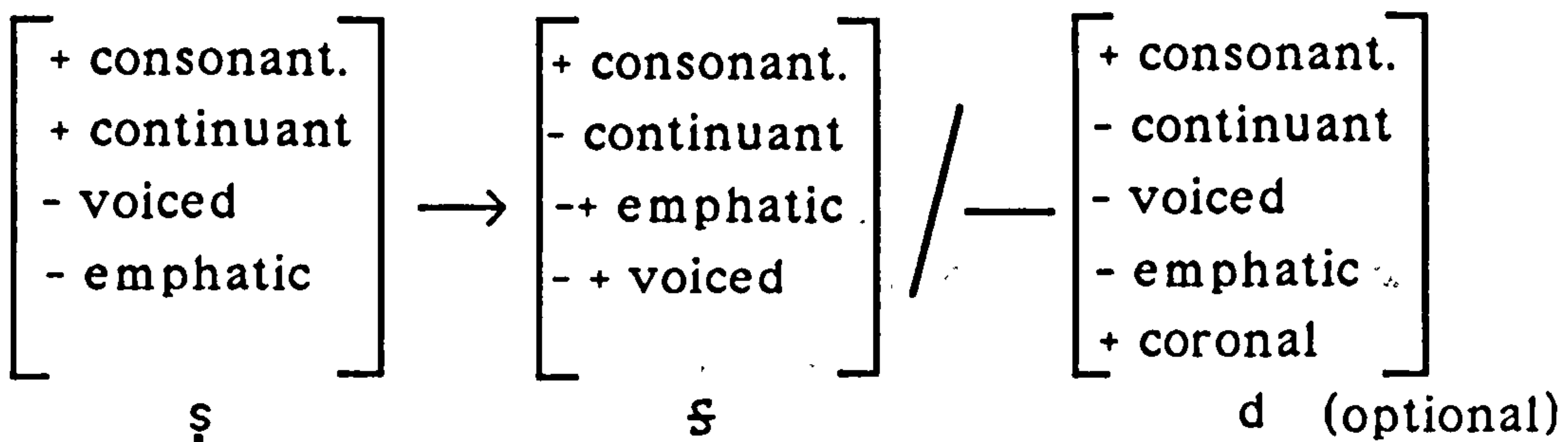
- 1 - Approximating a consonant to another consonant as in *aṣ-ṣirāṭ* (the path), *aṣḍaq* (more truthful), and *muṣayṭir* (ruler);
- 2 - Approximating a vowel to another vowel as in *qīl* (to be said) and *riḍ* (to become less (water));
- 3- Partially suppressing a short vowel so that it lies halfway between *iskān* and *tahrik*, as in some readings of the verse *ta'mannā 'alā Yūsuf* (you trust us with Joseph) [for *ta'manuna*] ...;
- 4 - rounding of the lips after a *sukūn*, which is discussed in the chapter on pause " (*Ibrāz al-Ma'āni*, 71-72) [the mouthing of a vowel in a pause].

Another term close to *ishmām* is *rawm*, which is also the partial pronouncing of the *ḥarakah*. The difference between the two terms is that the former cannot be heard but only be seen, while the latter is heard also. In fact, the *Kufan* school call *ishmām* *rawm* and *rawm* *ishmām*. (for more details see *an-Nashr*, 2 / 121).

⁵⁰ Speech sounds produced by using constrictions between the velum and tongue or tongue and pharyngeal walls are traditionally known by phoneticians as emphatic sounds " (see Latif Hasan Ali and R. G. Daliloff, "A Contrastive Cineflouographic Investigation of the Articulation of Emphatic-Nonemphatic Cognate Consonants", *Studia Linguistica*, 26 (1972), p. 81.

⁵¹ *Sirr ṣinā'at al- i'rāb*, 1 / 50-51.

as:



where [Ş] is pronounced between pure şād / ş / and zay / z / Thus yaşdur (step out), would be pronounced as [yaŞdur]. This condition (being before / d /) is emphasized by Ibn Jinnī in his statement : " / ş / is changed to / z / or / Ş / before / d / and if it becomes before other than / d /, the changing of it is impermissible "52. However, the reading of the word aş-şirāṭ 53 (the path) by Abū ʿAmr as / ş / and / Ş /, as ʿUryān reports, 54 where no / d / is involved, does not necessarily invalidate this rule, since "aş-şirāṭ is said to be an alternative form of as-sirāṭ with / s /, even though this word is written in the Qurʾānic manuscript with / ş /"55. Some Arabs, Ibn Jinnī claims56, "pronounce it as a pure / z /; they say: yazdur (step out) and qazd (intention)"57 (for yaşdur and qaşd

52 *ibid.* 1 / 51.

53 *Qurʾān*, 1 / 6.

54 al-Fārisi, *al-Ḥujjah lil-Qurrāʾ as-Sabʿah*, 1 / 49. The other readings of this word by the scholars are: Ibn Kathir read it with / ş / and / s /, Abū ʿAmr, as al-Aşmaʿi reports, read it with / z /, Ḥamzah and Yaʿqūb read it / ş /, and the rest of the readers read it with pure / ş /.

55 Ibn Mujaḥid, *Kitāb as-sabʿah fi al-qirāʾāt*, p 107.

56 *Sirr şinʿat al-irāb*, 1 / 50-51.

respectively)⁵⁸.

1.2.1.2. Vowels:

1. *alif al-imālah* (the *alif* of inclination). The long vowel / ā / which is pronounced between actual / ā / and / ī / in certain circumstances. There are two degrees of this movement: *imālah shadīdah* (heavy *imālah*) and *imālah khafīfah*⁵⁹ (light *imālah*). *imālah shadīdah* may be symbolized as / ē /⁶⁰, while *imālah khafīfah* may be symbolized as [ē̃]. The word / ʿālim / (scholar) may be pronounced as [ʿēlim] or [ʿē̃lim]⁶¹. This vowel is a central front vowel.
2. *alif at-tafkhīm* (the velarized *alif*), is an open back vowel with some rounding of the lips. It is a vowel that has moved up from / ā / toward / ū /, and an appropriate symbol is [ɤ̃]. This is the reason behind writing *alif* in *Qurʾānic* script as wāw in some cases, as in [ʃaɤ̃h] (prayer), [zaɤ̃h] (charity) and [ɥayɤ̃h] (life). There will be more discussion of this sound / ɤ̃ / in (3. 2. 5 below).

⁵⁷ *ibid*, 1 / 50.

⁵⁸ There will be more discussion of this point in chapter 2.

⁵⁹ Sibawayh mentions only *al-imālah ash-shadīdah*, *al-Kitāb*, 2 / 404, whereas most of the other linguists mention both.

⁶⁰ See Abū Bakr al-Khalifah (1951). *The Text of the Qurʾān with Reference to the Phonetic Aspects of Tajwid*, *Ph. D. thesis*, 44; see also M. Bakalla "Some Remarks on Sibawayh's Contribution to Phonetics", *al-Lisān al-ʿArabi*, 18, 1, 28.

⁶¹ More detail will be given in both sections on vowels and *imālah*.

1.2.2. Rejected derived sounds⁶²:

Arabic phoneticians have listed eight more derived consonants which are non-approved⁶³; they are not discussed in detail in classical Arabic. Ibn Jinnī says: "The eight that follow them are disapproved of; an explanation of their characteristics would be lengthy, and so we have omitted them"⁶⁴. These eight sounds are:

(1) *kāf* / k / which is pronounced as between / j / and / k /.⁶⁵

(2) *jīm* / j / approximated to *kāf* / k /.⁶⁶

⁶² These are non-preferred consonants and not used a great deal by pure Arabs (*al-Kitāb*, 2 / 404).

⁶³ Ibn Sinā (*Risālah fi makhārij al-ḥurūf*, 21-23) lists seven more consonants heard in his time (-1333 A.H.):

1. / š / approximated to / ʃ /.
2. / s / approximated to / z /.
3. / š / approximated to / z /.
4. / r / approximated to / ʀ /.
5. / r / approximated to / l /.
6. / r / approximated to / ɾ /.
7. Emphatic / ʀ /.

⁶⁴ *Sirr ʃināʿat al-irāb*, 1 / 51.

⁶⁵ Ibn Fāris lists this sound among *al-lughāt al-maḏmūmah* (censured dialects), and he associate it with the Yamani dialect. (*al-Muzhir*, 1 / 222-223).

⁶⁶ Ibn Fāris calls it *al-ḥarf al-laḏī bayn al-qāf wal-kāf fi lughat Tamim* (the sound between / q / and / k / in *Tamim* dialect). (ibid).

		Palatal	Velar	Uvular
Stops	vl.		k	
	vd.	j	(g)	q

It seems likely that the sound meant by both *kāf* / k / which is pronounced between *jīm* / j / and *kāf* / k /, and *jīm* / j / which is approximated to *kāf* / k / is the sound / g /⁶⁷; the voiced counterpart of the English / k /.

As far as / k / is concerned, Ibn Al-Jazarī says: " The plosiveness and voicelessness of *kāf* should be regarded and it should not be pronounced as *al-kāf aṣ-ṣammā* (hard / solid / k /), a sound found in some languages. This / k / is not accepted in Arabic"⁶⁸. Similarly, if / q / loses its characteristic of *istiʿlā* (elevation), it becomes *kāf ṣammā* as a result, according to Ibn al-Jazarī. So both / k / and / q / come to be *kāf ṣammā*, which supports our claim that *kāf ṣammā* may be / g /.

⁶⁷ See for example El-Saaran, *Ph. D.*, 94, and Bakalla, *M. Phil.*, 209, and "Some Remarks on Sibawayh's Contribution to Phonetics", *al-Lisān al-ʿArabi*, 18,1, 28

⁶⁸ *an-Nashr*, 1 / 221.

(3) *jīm* / j / approximated to *šin* / š /:

We have seen (in 1.2.1.1 #3) that the sound / š / which is approximated to / j /, namely [3], is approved but the sound / j / which is approximated to / š /, however, is disapproved of. It is difficult to see in what respects then two sounds would differ, and why one should be approved and the other disapproved of. In these examples:

/ ʔašdaq / → [ʔa3daq]]	š → 3 / — d
/ ʔajdar / → [ʔa3dar]		j → 3 / — [d]
/ ʔijtamaʕū / → [ʔi3tamaʕū]		j → 3 / — [t]

/ j / is closer to / d / than / š / is in that it has two features in common; plosiveness and voicedness, while / š / has neither. However in the third example, where / t / is the dominating sound, / j / and / š / each share with / t / one main feature; plosive and voiceless respectively; therefore, Ibn al-Jazarī warned that in this case (j+vl) the voicedness and plosiveness of / j / should be emphasized and not weakened, so as to tend towards / š /.⁶⁹ The main reason for accepting the approximation of / š / to / j / and rejecting that of / j / to / š / is that / j / is a voiced plosive, and is one of the / *qalqalah* /⁷⁰ sounds, which are required to be pronounced carefully so that they do not acquire other features from neighboring sounds. Ibn al-Jazarī says: " The sound / j / must be articulated from its original place of articulation (the palate).

⁶⁹ *an-Nashr*, 1 / 218.

⁷⁰ *Qalqalah* sounds are sounds having both voiced and plosive features in Arabic.

It must not move forward so that it tends towards / š /, as is the case with many people in *Shām* and *Miṣr* "(ninth century A.D.). He specifies the circumstances in which care must be taken, particularly where it is pronounced geminated or before voiceless sounds.⁷¹

(4) *aḍ-ḍād ad-ḍaʿīfah* (weak / ḍ /:)

The standard / ḍ / is articulated *min bayn awwal ḥāffat al-lisān wa mā yalīhi min al-aḍrās*⁷² (between the extreme tip of the tongue and the nearest molars to the tongue). It is a voiced emphatic apico-alveolar fricative sound.

As far as the weak *ḍād* / ḍ / is concerned, Ibn Yaʿīsh explains it as occurring in the speech of those foreigners who find it difficult to pronounce true / ḍ /; they may pronounce it as *ṭāʾ* / ṭ /, in attempting to articulate it *mim mā bayna al-lisān wa ʿaṭrāf aṭ-ṭanāyā* (between the tongue and the edges of the front incisors),⁷³ rather than in its true place of articulation. They in fact pronounce it between / ḍ / and / ẓ /⁷⁴. Ibn al-Jazarī claims that none of the Arabic sounds is as difficult as / ḍ /⁷⁵.

This sound / ḍ / is pronounced in various ways by

⁷¹ *an-Nashr*, 1 / 218.

⁷² *al-Kitāb*, 2 / 405.

⁷³ In this description, it is articulated in the same place as Ø, ḏ, and ẓ.

⁷⁴ *Sharḥ al-mufaṣṣal*, 10 / 127-8.

⁷⁵ *an-Nashr*, 1 / 219. However, I. Anis, a modern Arabic linguist, claims that *hamzah* is the most difficult sound in Arabic. (see *al-Aṣwāt al-lughawiyyah*, 90.

foreigners; some pronounce it as / ṭ /, some approximate it to / ḡ /, some to / ḫ /, some approximate it to / z /, and some pronounce it as emphatic / ṭ̣ /. None of these is accepted.⁷⁶

(5). ṣād / ṣ / approximated to sīn / s /:

The sounds / ṣ / and / s / only differ in the feature of *iṭbāq* (emphasis). Sībawayh says: " If there were no *iṭbāq*, the sound / ṭ / would become / d /, / ṣ / would become / s /, / ḡ / would become / ḫ /, and / ḍ / would disappear from speech, since there is nothing to take its place.⁷⁷

This shift of the sound / ṣ / toward / s / is against the usual nature of assimilation in which the stronger sound affects the weaker sound.

Ibn al-Jazari warns *Qurʾānic* readers to be careful not to pronounce / ṣ / as / s / when it is *Sākinah* (vowelless) before / t /, / ṭ /, or / d /, as in these examples / wa law ḥaraṣtum / (even if you desire), / ʾa ṣṭafā / (did he choose ?), and / ʾaṣḍaq / (more truthful).⁷⁸

(6) ṭāʾ / ṭ / approximated to tāʾ / t /:

When / ṭ / loses its voicedness, it becomes close to / t /, but when it loses its emphaticness, it comes close to / d /. This ṭāʾ / ṭ / approximated to tāʾ / t / was heard a great deal

⁷⁶ *an-Nashr*, 1 / 219.

⁷⁷ *al-Kitāb*, 2 / 206.

⁷⁸ *an-Nashr*, 1 / 219.

from foreigners in Iraq,⁷⁹ during and even before Ibn Yaʿīsh's time (seventh century A.H.). They would say: *tālib* instead of *ṭālib* (student). Ibrahīm Anīs says: " It is used now in most Arab countries, but nobody recognizes it so as to reject it."⁸⁰ (this century).

(7) *ḡāʾ* / *ḡ* / approximated to *əā* / *ə* /:

When / *ḡ* / loses its voicedness, it becomes / *ə* /. Foreigners tend to say: / *əalama* / for the word / *ḡalama* / (treat unjustly)⁸¹.

(8) *bāʾ* / *b* / approximated to *fāʾ* / *f* /:

		Bilabial	Labiodental
Stops	vl.	(p)	
	vd.	b	
Fricatives	vl.		f
	vd.	(v)	

(sounds between parentheses are not Arabic)

According to Ibn Yaʿīsh, this sound is frequently used in Persian⁸². They say: / *fūr* / instead of / *būr* /; presumably

⁷⁹ *Sharḥ al-mufaṣṣal*, 10 / 128.

⁸⁰ *al-Aṣwāt al-lughawiyyah*, 52.

⁸¹ *Sharḥ al-mufaṣṣal*, 10 / 128.

the pronunciation / vūr / is indicated.

/ b / differs from / f / in three main features: voicedness, plosiveness, and the place of articulation. So which feature of / b / must change in order for it to move towards / f / ? If it changes its voicedness, the result is similar to the English / p / ⁸³, and if it moves backwards in place of articulation, or if the blockage of the airstream is not complete, the resultant sound is / v /.

Some linguists consider this approximated / b / to be similar to the English / v /, among them El-Saaran ⁸⁴, while others believe it to be similar to the English / p /, among them Bakalla.⁸⁵

Bilabial plosive sounds are likely to move backwards and have some friction. Latin / p / becomes / f / in English, as in these examples:

<u>Latin</u>	<u>English</u>
pes	foot
piscis	fish
pater	father. ⁸⁶

⁸² *ibid.*

⁸³ It is interesting to quote here M. Brame who says that "of course this is the case historically, that is phonetic / f / did derive from Semitic / p /". (*Arabic Phonology*. Ph.D. Thesis, 1969, Massachusetts Institute of Technology, 18.)

⁸⁴ *A Critical Study of the Phonetic Observations of the Arabic Grammarians*, Ph.D. Thesis London University, 100-101.

⁸⁵ "Some Remarks on Sibawayhi's Contribution to Phonetics" *al-Lisān al-ʿArabi*, 18, 1, 28.

⁸⁶ Bloomfield, *Language*, 347.

In fact, there is not much detailed description given concerning these rejected derived consonants. We therefore do not know for certain the exact nature of the sounds.

1. 3. VOWELS:

" Vowels are speech sounds made by shaping the oral cavity while allowing free passage of air from the lungs. The primary criteria for the classification of vowels are: (1) the distance between the top of the tongue and the roof of the mouth and (2) the retraction or extension of the tongue."⁸⁷ "... their outlets are wide for the air of the sound; and none of the (other) letters has wider outlets than theirs..."⁸⁸

Arabic has six primary vowel phonemes,⁸⁹ namely a, i, u, ā, ī, and ū. In spite of the fact that short vowels - as we have previously stated- do not always appear in writing, and in spite of the fact that they were studied by the earlier Arabic linguists only in relation with consonants, they are not totally ignored as an independent class of sounds, as one modern linguist thinks.⁹⁰

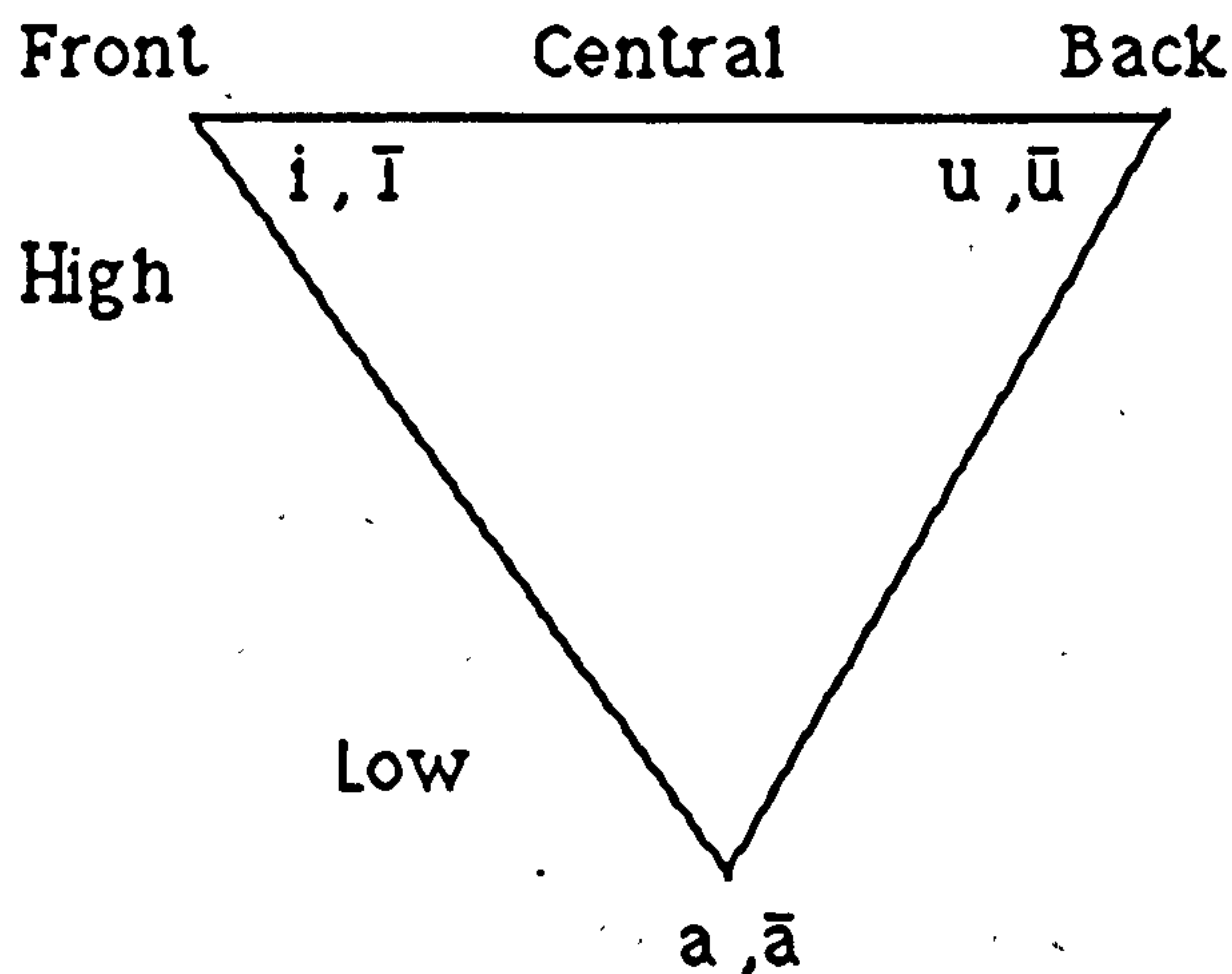
⁸⁷ C. Sloat and others, *Introduction to Phonology*, 10.

⁸⁸ Sibawayh's statement as translated by an-Naṣṣir in his Ph.D. Thesis *Sibawayhi The Phonologist....* University of York (1985), p. 62.

⁸⁹ They are not as N. Yushmanov (*The Structure Of Arabic Language*, 12) claims : "Arabic has three vowel phonemes. A.I.U. They may be short (a,i,u) or long (ā,ī,ū)". It is understood from his statement that three of the vowels are allophones of the others. This is not; since both may occur in the same environment.

⁹⁰ AL-Wohaibi, *Qur'ānic Variants*. Ph.D. Thesis. Indiana University

(diagram of Arabic cardinal vowels)



The question to be raised here is, how far did the early Arabic linguists recognize the short vowel in their analysis of the phonetics and phonology of Arabic? In answering this question, the following points may be considered:

(1) The early Arabic linguists do not always organize their work systematically. They mingle different things together, and introduce the same points in more than one place. It is therefore normal to find a phenomenon which is discussed in great detail, although no separate chapter is devoted to it. The vowel is one of these, especially the short vowel.

(2) Although Arabic linguists differentiate between long and short vowels by considering the former as *ḥurūf* (letters) and the latter as *ḥarakāt* (movements), they do in fact believe that long and short vowels are the same except in duration. Ibn Jinni comments "Know that the *ḥarakāt* (short vowels) are parts of *ḥurūf al-madd wal-līn* (long vowels and

glides), namely ā, ū, ī, y, and w. The early grammarians name *fathāh* / a / the small *alif* / ā /, *kasrah* / i / small *yāʾ* / ī / y and *ḍammah* / u /, the small *wāw* (ū / w ⁹¹. He continues: "Do you not know that long vowels may be found longer in some phonetic environment such as before the glottal stop / ʾ / and geminated consonants ... So the short vowel may be made longer and become a long vowel with *ʾishbāʿ*.⁹²

(3) Arabic linguists see other similarities between the *ḥarakāt* and the *ḥurūf* in terms of their function:

a. Sībawayh explains why the sound / ṣ / remains and is not approximated to / d / in such words as / *ṣadaqa* / (he told the truth), by becoming / z / or / ṣ /. He states that / ṣ / and / d / are not contiguously pronounced; the short vowel / a / separates them⁹³.

b. Abū ʿAlī al-Fārisī (-377 A.H.) considers the short vowel to be as adequate a barrier as the long vowel, for example:

ā : / *ṣādiq* / (truthful), and

a : / *ṣadaqa* / (he told the truth).

Both / a / and / ā / prevent the assimilation of / ṣ / and / d /.⁹⁴

c. Ibn Jinnī says: " When a consonant is followed by a short vowel, the vowel separates it from the following

⁹¹ *al-Khaṣāʾiṣ*, 2 / 327, and *Sirr ṣināʿat al-irāb*, 1 / 17.

⁹² *Sirr ṣināʿat al-irāb*, 1 / 19-20.

⁹³ *al-Kitāb*, 2 / 426.

⁹⁴ *al-Ḥujjah lil-qurrāʾ as-sabʿah*, 1 / 54.

consonant. The difference between two consonants and the barrier of the short vowel come to act - in preventing assimilation (*badal*) - as a barrier *ḥarf* (consonant or long vowel) between the two similar consonants".⁹⁵ A short vowel acts as a barrier between two similar consonants.⁹⁶

- (4) Finally, because they believe that a long vowel and its corresponding short vowel are the same (as stated before in 2 above) except in duration, they appear to find it unnecessary to discuss the short vowels separately.

With regard to the vowel in general, "it seems obvious that Sībawayh (and other Arabic linguists) are aware of the distinction between phonetics and phonology. To describe the phonetic properties of the vowel, Sībawayh called them letters of *madd* and *līn* (softness and prolongation), and he called them *ḥillah* (letters) to describe the way they behave within the structure of Arabic."⁹⁷

Another question to be raised here is how much the early Arabs know of the nature of the vowel in their language, and how accurate their description of the vowel is.

It is not easy to answer such questions. Again some points may be detailed here (a full analysis of vowels is beyond the

⁹⁵ *al-Munşif*, 2 / 335.

⁹⁶ *al-Khaṣā'is* 2 / 320.

⁹⁷ *an-Naṣṣir, Sībawayh the Phonologist...63.*

scope of this thesis):

- 1- Most Arabic linguists discuss vowels in conjunction with consonants, in respect of the place of articulation, including Sībawayh, al-Mubarrid, Ibn Jinnī, az-Zamakhsharī, and Ibn Yaʿīsh. In fact Ibn al-Jazarī seems to be the most accurate, since he groups the vowels and he differentiates, with respect to the place of articulation in particular, between the two vowels / ū and ī / and the two semi-vowels / w and y /, which are represented similarly in Arabic script.
- 2- All the linguists of whom I have made mention so far consider vowels as voiced phonemes.
- 3- All of them describe vowels as neither stops nor fricatives, but resonants.
- 4- In the matter of ease of utterance of vowels, Sībawayh says: "*alif* / ā / is *khafīfah* (light, i.e. lax), because neither the tongue nor the lips move. It is as easy to produce as the breath. It is therefore not as *thaqīlah* (heavy, i.e. tense) as *wāw* / ū / or *yāʾ* / ī /".⁹⁸ To sum up:

/ ā /	=	+ lax	- tense
/ ū, ī /	=	- lax	+ tense

- (5) With relation to jaw opening, the Arabs divide vowels into two groups: first, the open vowel which is produced with wide jaw opening, where the distance between the tongue and the roof of the mouth is great. This is the case with the long vowel

⁹⁸ *al-Kitāb*, 2 / 357, see also *Sirr ṣināʿat al-iʿrāb* and *Diwān al-adab* 1 / 87.

/ ā /⁹⁹, and what they consider to be its short counterpart / a /. Second, the close vowel which is produced with narrow jaw opening. This is the case with both / ī / and / ū /¹⁰⁰ and their counterparts / i / and / u /. They realize, more specifically, that the sound / ī / is more open than / ū / and less than / ā /, but that it is more close to / ū / than to / ā /.

This division helps them in their discussion of the interchange between vowels, with / ī / and / ū / interchanging with one another more than they do with the / ā / because of this closer relationship. More details and examples will be provided later in this thesis.

(6) In the case of the shape of the lips, the only primary rounded vowel is / ū / and its counterpart / u /. Other vowels are unrounded.

⁹⁹ *al-Kitāb*, 2 / 406.

¹⁰⁰ *Ibid.*

Main features of primary Arabic vowels

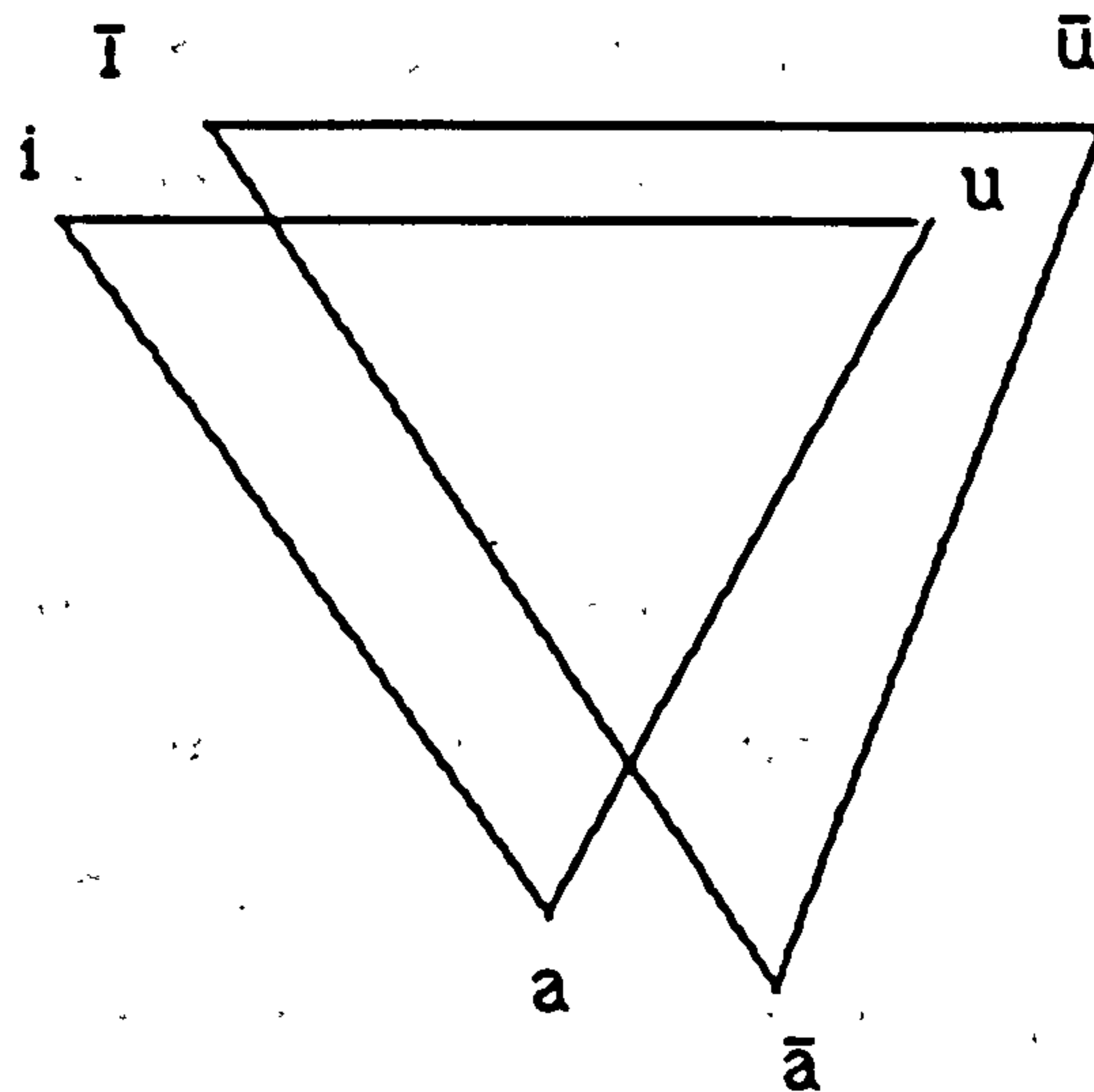
Vowels → Features ↓	a	ā	i	ī	u	ū
Back	-	-	-	-	+	+
Front	-	-	+	+	-	-
High	-	-	+	+	+	+
Low	+	+	-	-	-	-
Lax	+	+	-	-	-	-
Tense	-	-	-	-	+	+
Round	-	-	-	-	+	+
Close	-	-	+	+	+	+
Open	+	+	-	-	-	-
Long	-	+	-	+	-	+

(7) When the Arabs speak about the quantity and duration of vowels, they consider a short vowel as a part of its corresponding long one. The only difference between them is its duration.¹⁰¹ Modern linguists agree with this conclusion.¹⁰² Others claim that

¹⁰¹ See for ex. *Sirr šināʿat al-irāb*, 1 / 19.

¹⁰² M. al-Mubārak, *Fiqh al-lughah wa khaṣāʾis al-ʿarabiyyah*, 45.

the differences are in terms of quality as well as in quantity. since the position of the tongue is not the same,¹⁰³ as represented in the following chart by Al-Anī¹⁰⁴:



Al-Anī came to this conclusion by using x-rays (in spectrographic displays)¹⁰⁵; another linguist has come to the same conclusion by using minimal pairs with the long vowel and its corresponding short vowel : " In the minimal pairs / *kataba* / and / *kātaba* /, the pairs of vowels / *a* / and / *ā* / are different in quality as well as in quantity. The short vowel is slightly more fronted and less open than long vowel. "¹⁰⁶

The ration of time that a short vowel takes is only half of that of a long vowel, this is to say 1:2. This ratio may become as

¹⁰³ A. ʿUmar, *Dirāsat aṣ-ṣawt al-lughawi*, 282-283.

¹⁰⁴ *Arabic Phonology*, 25.

¹⁰⁵ This was with an Iraqi subject.

¹⁰⁶ an-Naṣṣir, *Sibawayhi the Phonologist*...59.

high as 1: 6 in, for example, the reciting of the *Qurʾān*, where a long vowel becomes extra long. The difference between these extra long vowels (ā̃, ĩ̃, ũ̃) and the normal long vowels is not phonemic. It is optional in normal speech and reading, but recommended in the reciting of the *Qurʾān*. The two vowels are regarded as allophones of the same phoneme, as in the following examples.¹⁰⁷

- ā̃ → ā̃̃ 1. Before *hamzah* in medial and in junctural positions;
 2. Before geminated consonant in medial position,
 3. In a pre-pausal position,
 4. In *fawātiḥ as-suwar* (the beginnings of *sūrahs*) .
 ā → ā̃ *wa jāʾa* (and he came),
 dābbah (animal),
 ar-Raḥmān ≠ (the merciful),
 Qāf (the letter / q /).
 ī → ĩ̃ *wa jĩʾa* (and (they) were brought),
 ar-Raḥĩm ≠ (the compassionate),
 Ḥa Mĩm (the letters ḥ and / m).
 ū → ũ̃ *sũʾ* (evil),
 ʾatuḥājjũnnĩ ((come) you to dispute with me, ...?),
 turḥamũn ≠ (you may obtain mercy),
 Nũn (the letter / n /).¹⁰⁸

¹⁰⁷ Abū Bakr, *The Text of the Qurʾān*...172-173.

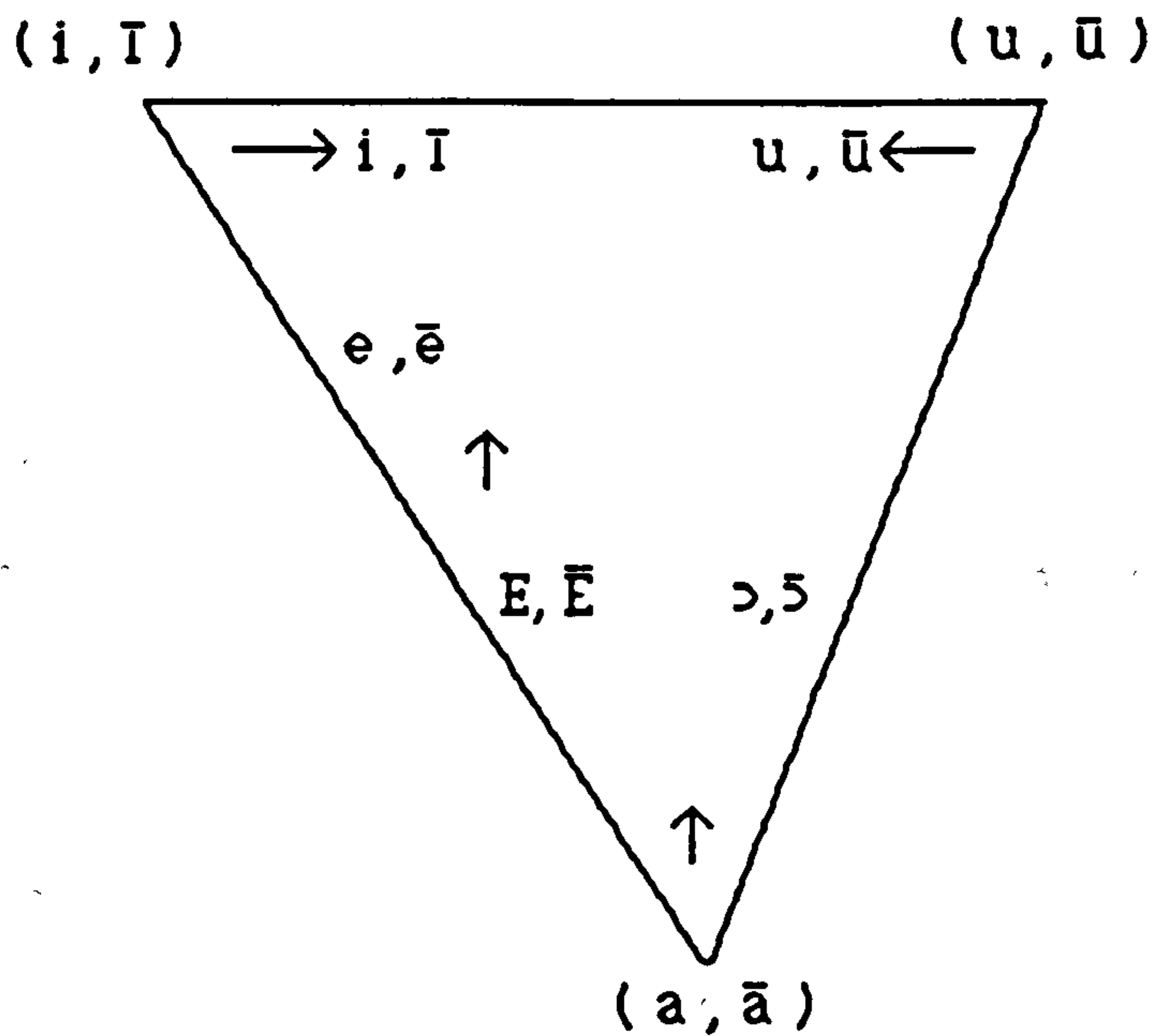
¹⁰⁸ More detailed description will be given later, in the sub-chapter of vowel lengthening and shortening, pp. 24ḡ-25ḡ.

The over-long vowel is not the only allophone of the vowels in Arabic. Most of the vowels may have allophonic variants which occur in different environments. We have seen (in 1.2.1.2. above) some of the allophonic variation of vowels. In brief, the secondary vowels,¹⁰⁹ which can be regarded as allophonic or dialectal variations, are:

1. a → E / *raḥmah* / → [*raḥmEh*] (mercy) (light *imālah*),
 e / *raḥmah* / → [*raḥmeh*] (strong *imālah*),
 ɔ / *raḥmah* / → [*raḥmɔh*] (*tafkhīm*),
 a / *raḥmah* / [*raḥmah*] (standard).
2. ā → ē / *ʿālim* / → [*ʿēlim*] (scholar) (light *imālah*),
 ē / *ʿālim* / → [*ʿēlim*] (strong *imālah*),
 ã / *sāʾa* / → [*sãʾa*] (be bad) (over-lengthening),
 ā / *qāla* / (he said) (standard).
3. i → ɨ / *ṣiyām* / → [*ṣɨyam*] (fasting) (i approximated to u),
 i / *labisa* / (he wore) (standard).
4. ī → ɨ̄ / *qīla* / → [*qɨ̄la*] (it is said) (i approximated to u),
 ĩ / *siʾa* / → [*sĩʾa*] (... he was grieved...) (over-lengthening),
 ī / *fīl* / (elephant) (standard).
5. ū → ʊ̣ / *maǰʿūr* / → [*maǰʿʊ̣r*] (frightened) (ū approximated to ɨ),
 ũ / *sūʾ* / → [*sũʾ*] (badness) (over-lengthening),
 ū / *sūr* / (fence) (standard).

¹⁰⁹ *al-Khaṣāʾiṣ*, 3 / 121, and *Sirr ṣināʿat al-irāb*, 1 / 50-51.

(diagram of allophonic variation in Arabic vowels)



To compare Arabic and English, the long vowel in Arabic is a pure vowel, while it is diphthongized in English.¹¹⁰

Generally speaking, secondary vowels in Arabic are non-functional sounds; in the following example, the two words of the pairs are morphologically identical:

<i>cālim</i>	<i>cēlim</i>
<i>ṣalāt</i>	<i>ṣal5t</i>
<i>qīla</i>	<i>qīla</i>
<i>maḣcūr</i>	<i>maḣcūr</i>
<i>sī'a</i>	<i>sī'a</i>
<i>sū'</i>	<i>sū'</i>

¹¹⁰ Gairdner, *Phonetics of Arabic*, 35.

1. 4. Semi-vowels:

A semi-vowel is "a speech sound which can have certain features of a vowel and consonant; such sounds have open approximation of the articulators and very little friction noise."¹¹¹ They are sometimes called glides. Arabic, like many other languages, has two semi-vowels only: / y / and / w /. They both involve tongue raising as a main feature. The movement is upwards, and for / y / is forwards, but for / w / is backwards.

As we have seen earlier, the two semi-vowels in Arabic have no special symbols in the writing system; they have the same as those of the corresponding long vowels. Even though the two letters function as long vowels and as semi-vowels / similar semi-consonants / glides, it is not difficult to differentiate between them. A long vowel in Arabic cannot be followed by a short one; if so the long vowel will become a semi-vowel. *alif* / ā / is the only pure long vowel in Arabic that has no corresponding semi-vowel.

1. a. cvc as in *māl* (wealth),

cv as in *mā* (what),

b. *vc ¹¹²

* cvv

2. a. y+ v as in *yabisa* (dried),

c+y as in *ḡaby* (gazelle),

v+ y + c as in *bayt* (house),

¹¹¹ R. Hartmann, *Dictionary of Language and Linguistics*, 205-206.

¹¹² This sign (*) will be used in this work to denote that the respective sound, word, or combination does not occur in Classical Arabic or any language in question.

- v + y + v as in *bayān* (announcement),
 b. w + v as in *wāʿada* (promised),
 c + w as in *jarw* (puppy),
 v + w + c as in *nawm* (sleeping),
 v + w + v as in *mawādd* (material).¹¹³

Being semi-consonants, / w / and / y / do not interchange as frequently as their correlate long vowels / ū /, and / ī /. Sibawayh and other grammarians emphasize this.

Diphthongs in Arabic are a combination of a vowel and a glide / semi-vowel.

1.5. Distinctive features:

A sound should be distinguished from other sounds by at least one feature, in order to be regarded as an independent phoneme. Such features are also important in that they are held to account for the occurrence of assimilation between some sounds and not others.

There are many distinguishing features to be discussed in relation to the place of articulation, manner of articulation, tongue position, lip shape, and prosodic features. However, we will discuss only some of the most important features; the others will be presented in chart form.

¹¹³ More details will be seen later.

1.5.1. Voiced versus voiceless:

Sounds produced with the vibration of the vocal cords are called voiced, those that are not called voiceless.

The term voiced is the most common equivalent of the Arabic *majhūr*. as the term voiceless is of the Arabic *mahmūs*. Other terms used to render these two Arabic words are as follows:¹¹⁴

<u><i>majhūr</i></u>	vs.	<u><i>mahmūs</i></u>
fortis	vs.	lenis
non-breathed	vs.	breathed
pressed	vs.	non-pressed
sonore	vs.	sourd
sonorous	vs.	muffled.

The earlier Arabic grammarians and phoneticians agree that the voiceless sounds are: h, ḥ, x, š, ṣ, s, t, ʿ, and f. They all have all been described by modern linguists as voiceless in today's *fuṣṣḥā* "standard language" (M.S.A.).

The voiced consonants, according to the almost unanimous opinion of the early Arabic grammarians, are : ʔ, ʕ, x, q, j, y, ɖ, l, r, n, ɗ, d, z, ʒ, ʁ, b, m, and w. These are all undoubtedly voiced in modern Arabic, with three exceptions: the glottal stop / ʔ /, / q /, and / ɗ /.¹¹⁵

¹¹⁴ Blanc. "The Sonorous vs. Muffled Distinction in Old Arabic Phonology" *Readings in Arabic Linguistics* (1973), p. 128, and Bakalla *M.Phil. Thesis* (1970), p. 286.

¹¹⁵ Ibrahim Anis *al-Aṣwāt al-lughawiyyah*, 21, Bakalla, *M.Phil. Thesis*, pp. 295 -296, and Abū Bakr al-Khalifah, *Ph. D. Thesis*, p. 216.

These three sounds must either have changed over the years or have been originally wrongly described by either early or modern linguists.

(Distinctive Features of Arabic Sounds (1))

Sounds → Features ↓	b	m	f	ð	ð̣	ə	r	l	n	z	s	ʂ	ʃ	ḍ	ṭ	t	d
consonantal	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
vocalic	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
continuant	-	+	+	+	+	+	+	+	+	+	+	+	+	+	-	-	-
voiced	+	+	-	+	+	-	+	+	+	+	-	-	-	+	+	-	+
sonorant	-	+	-	-	-	-	+	+	+	-	-	-	-	-	-	-	-
nasal	-	+	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
lateral	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
emphatic	-	-	-	-	+	-	+	+	-	-	-	+	-	+	+	-	-
qalqalah	+	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	+
sibilant	-	-	-	-	-	-	-	-	-	+	+	+	+	-	-	-	-
hushing	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
anterior	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
coronal	-	-	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+
tense	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
high *	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
low	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
back	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
round	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
long	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* The feature "high" is limited here to vowels. Consonants described as high / *mustaʿlī* / are listed under "emphatic".

(Distinctive Features of Arabic Sounds (2))

Sounds → Features ↓	j	k	q	ɣ	x	ʕ	ħ	h	ʾ	w	y	ā	ī	ū	a	i	u
consonantal	+	+	+	+	+	+	+	+	+	-	-	-	-	-	-	-	-
vocalic	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+	+	+
continuant	-	-	-	+	+	+	+	+	-	+	+	+	+	+	+	+	+
voiced	+	-	+	+	-	+	-	-	-	+	+	+	+	+	+	+	+
sonorant	-	-	-	-	-	-	-	-	-	+	+	+	+	+	+	+	+
nasal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
lateral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
emphatic	-	-	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-
qalqalah	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
sibilant	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
hushing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
anterior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
coronal	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
tense	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+
high	-	-	-	-	-	-	-	-	-	-	-	-	+	+	-	+	+
low	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-	-
back	+	+	+	+	+	+	+	+	+	+	-	-	-	+	-	-	+
round	-	-	-	-	-	-	-	-	-	+	-	-	-	+	-	-	+
long	-	-	-	-	-	-	-	-	-	-	-	+	+	+	-	-	-

The features "tense", "high", "low", "back", "round", and "long" are relevant mainly to the production of vowels.

A consideration of certain aspects of these three sounds may help to resolve this.

1. / ʾ /:

- a. The written symbol for this sound is in most cases dependent on another symbol, i.e. one associated with a long vowel:
on /*alif* /, e. g. "أكل" (to eat),
under /*alif* /, e. g. "إبراهيم" (Ibrahim),
on /*wāw* /, e. g. "مؤمن" (a believer),
on /*yā* /, e. g. "قرأ" (it was read),
independent, e. g. "عبء" (load).
- b. This sound, as we have seen, has allophones in which it becomes *musahhalah* (pronounced easily) and *bayna bayna* (in between the actual glottal stop and the vowel that precedes it). In this respect / ʾ / gains some voicedness from the vowels. The Arabs describe it in a way similar to the vowels. In point of fact, they describe the features of some of its allophones and they generalize them.
- c. Because of its frequent connection with *alif*¹¹⁶ / *ā* /, the Arabs may have described it as if they had been describing *alif* / *ā* / in the matter of voicedness.
- d. The vibration which immediately follows the release of sound gave the Arabic grammarians the impression that this sound is voiced.¹¹⁷
- e. On the other hand, the glottal stop / ʾ / has been described

¹¹⁶ Cantineau, *Durūs fi ʿilm aṣwāt al-ʿarabiyyah*, 35.

¹¹⁷ Abū Bakr al-Khalifāh, *Ph. D. Thesis*, 227.

as neutral in respect of voicedness; it is neither voiced nor voiceless.¹¹⁸

2. / q /:

The sound / q / is described as a voiced uvular stop by the early grammarians; however, in contemporary standard Arabic it is realized as voiceless. I believe that it was a voiced sound, for these reasons:

- a. The unanimous opinion among both early linguists and *tajwīd* scholars is that this sound is voiced.
- b. The linguists list it among the *qalqalah* sounds.
- c. A modern linguist believes that Classical Arabic had a voiced as well as a voiceless / qāf / in Sībawayh's time.¹¹⁹ The symbol given to this sound / q / is for the voiceless sound that occurs in most modern Arabic. The Classical voiced Arabic / qāf / should have a voiced symbol [G].
- d. In the Sūdān, *Qur'ānic* readers pronounce it voiced.¹²⁰
- e. This sound is voiced in some modern Arab dialects such as those of the northern Arabian Peninsula and eastern Tunisia. This fact makes modern linguists believe that it was

¹¹⁸ See *An Outline of English Phonetics*, 150, Bakalla, *M.Phil. Thesis*, p. 297, I. Anis, *al-Aṣwāt al-lughawiyyah*, 90, and *Fi al-lahajāt al-ʿarabiyyah*, 77.

¹¹⁹ "The Sonorous vs. Muffled Distinction in Old Arabic Phonology", *Readings in Arabic Linguistics*, (1973), 134.

¹²⁰ Ph.D. Thesis, p. 224. Abū Bakr graduated from the *Khalwaṣ* school of *Qirāʾāt* in Sūdān. He was advised by his teachers (1943) not to pronounce the sound / q / as a voiceless stop (ibid).

originally a voiced sound in Classical Arabic.¹²¹

3. / ṭ /:

Again this sound is described by al-Khalīl and his successors as voiced, while it is found in modern Arabic as voiceless. Sībawayh states that "This sound without *iṭbāq* would be / d / ¹²², which is voiced " ¹²³. In the science of *Qirāʾāt*, it is listed among the *qalqalah* sounds which are voiced. Moreover, it is found voiced in some dialects of Yemen ¹²⁴ and Tchad. ¹²⁵

There is also another variant of the sound / ṭ / namely the / ṭ / approximated to / t /, which was disapproved of in Classical Arabic. ¹²⁶ This secondary sound may have driven out the original one, which has gradually been disappearing from most forms of Arabic.

In fact, modern *qurrāʾ*, unlike the modern linguisticians, regard these three sounds / ʾ /, / q /, / ṭ / as voiced consonants, as they are described in classical Arabic.¹²⁷

¹²¹ Cantineau, *Durūs fi ʿilm aṣwāt al-ʿarabiyyah*, 110.

¹²² Using for Arabic *ṭā* the phonetic symbol / ṭ / is not accurate for a voiced Classical Arabic [ṭ]; however, it indicates the modern voiceless sound, the counterpart of / t /. Classical / ṭā / is a counterpart of / d / and a better symbol for it would be / ḍ /. As for the sound [ṭ], / ḍ / would replace / ṭ /.

¹²³ *al-Kitāb*, 2 / 406.

¹²⁴ This is stated by Glaser and restated later by Rossi (see: Cantineau. *Durūs fi aṣwāt al-ʿarabiyyah*, 50).

¹²⁵ Mentioned by Kampffmayer in his article on the Arab dialects of vadai (east of Lake Tchad); see Cantineau (*ibid*), 51.

¹²⁶ See 1.2.2. no. 6, above.

1.5.2. Continuants vs. non-continuants:

Arabic phoneticians have divided Arabic sounds into three groups in relation to continuity: the first group is *shadīdah* (stops or plosives) which are produced by a complete oral closure and velar closure.¹²⁸ Arabic has eight stop consonants, they are: ʔ, q, k, j, d, t, ṭ, and b. The second is *Rikhwah* (fricatives). Arabic fricative sounds are :h, ḥ, ʿ, x, ʁ, š, ṣ, s, ḍ, z, ẓ, ẓ̤, ʔ, and f. It is surprising to find unanimous exclusion of the sound / ʿ / from fricative sounds by the early Arabs. I assume that the reason behind this exclusion is al-Khalīl's consideration of / ʿ / as the farthest sound in the *ḥalq*¹²⁹ (pharynx), which he considered to be close to the point of articulation of the vowels. Thus al-Khalīl's followers all regarded / ʿ / as neither stop nor fricative¹³⁰. Ibrāhīm Anīs gives another possible explanation: " The reason might be the weakness of its *ḥafīf* (rustling) in comparison with / ʁ /; this weakness brings it close to / m /, / n /, and / l / which are close to vowel sounds¹³¹. The third group is resonants or sonorants, sounds in between stops and fricatives. This group

¹²⁷ See for example: ʿAbd ul- Fattāḥ al- Marṣafī, *Hidāyat al-qāri ʾilā tajwid kalām al- Bārī*, 97.

¹²⁸ C. Hockett. *A Course in Modern Linguistics*, 70.

¹²⁹ *al-ʿAyn*, 1 / 47.

¹³⁰ Ibn al-Jazari lists / ʿ / among sounds that are neither stop nor fricative (*an -Nashr*, 1 / 202), but when he discusses it elsewhere, he regards it as a stop. He says: "If / ʿ / is vowelless (*sākinah*) and followed by a vowelless sound, its voicedness and plosiveness should be maintained" (*an -Nashr*, 1 / 220)

¹³¹ I. Anīs, *al-Aṣwāt al-lughawiyyah*, 88.

includes the Arabic sounds:

nasals : m and n,

liquids : l and r,

glides : w and y,

vowels : a, ā, i, ī, u and ū,

and as we have seen the Arabs add the sound / ʿ /
wrongly.

Both the early *qurrā'* and the modern *qurrā'* describe this sound as *bayna ash-shadīdah wa ar-Rikhwah* (neither stop nor fricative, i.e. sonorant). ¹³²

¹³² See for example: Abdul- Fattāḥ al- Marṣafī, *Hidāyat al-qārī ilā tajwid kalām al- bārī*, 97.

Chapter Two

Chapter Two

Types of Assimilation

2.1. Definitions:

Before giving the definition of the phenomenon of assimilation, some examples will be provided as illustrations:

1. / * *idta^cā* / \longrightarrow [*idda^cā*] (he claimed)

$t \longrightarrow d / d \text{ ---}$

where : $C_1 C_2 \rightarrow C_1 C_1$ (C = consonant)¹

2. / * *ʔal ʃābir* / \longrightarrow [*ʔaʃ ʃābir*] (patient)

$l \longrightarrow ʃ / \text{ --- } ʃ$

where : $C_1 C_2 \rightarrow C_2 C_2$

3. / * *waʃtabir* / \longrightarrow [*waʃtabir*] (and be patient)

$t \longrightarrow ʈ / ʃ \text{ ---}$

where : $C_1 C_2 \rightarrow C_1 C_3$

4. / *ʔan būrika* / \longrightarrow [*ʔam būrika*] (that blessed are)

$n \rightarrow m / \text{ --- } b$

where : $C_1 C_2 \rightarrow C_3 C_2$

5. / *ʔin kuntum* / \rightarrow [*ʔin k̃untum*] (if you are)

$n \longrightarrow \eta / \text{ --- } k$

$k \longrightarrow k̃ / n \text{ ---}$

where : $C_1 C_2 \rightarrow C_3 C_4$

(The mark [̃] indicates nasality of sounds, and the symbol [η] indicates a velar nasal.).

¹ The use of C here is purely arbitrary, since assimilation is not limited to consonants but also extends to include vowels and semi-vowels. It would perhaps be more accurate to use S = "sound".

6. / iʃtalamɑ / → [iʃtalamɑ] (to do injustice)

t → ʈ / — ʈ

ʃ → ʃ / — ʃ

where : C₁ C₂ → C₃ C₃.

It is perhaps appropriate to give other linguists' definitions before I give my own.

1. Ida C. Ward : "Assimilation may be defined as the process of replacing a sound by another sound under the influence of a third sound which is near to it in a word or a sentence ".²

This definition is not complete enough to cover all possible kinds of assimilation. Three of our preceding examples (1, 2, and 5) are outside of the phenomenon of assimilation according to this definition, since the influence is that of one sound upon the other and not that of a third.

2. R. Hartmann: " The process of result of two sounds becoming identical or similar, due to the influence of one upon the other".³

The environment here excludes two of the preceding examples (3 and 4), since the effect there is caused by a third sound.

3. D. Abercrombie: "changes in pronunciation which take place under certain circumstances at the ends and the beginnings of words".⁴

² *The Phonetics of English* (1945), 185-186. The same kind of definition is given by Daniel Jones. *An Outline of English Phonetics* (1956) 217-218.

³ *A Dictionary of Language and Linguistics*, 21.

⁴ *Elements of General Phonetics* (1967), 133.

This definition excludes the middle of the word as an environment where assimilation might take place, as in our examples (1 and 3) above.

Arabic is not the only language that has assimilation in the middle of words; many other languages have, including English. The English word / congress / is pronounced as [congress].

4. Roger Lass: "In assimilation, one segment becomes more like (or identical to) another (or two become more like each other)"⁵.

This definition does not give the reason for assimilation.⁶

These definitions are merely examples of those given by different linguists. I am not ruling out the possibility that there are more accurate definitions unknown to me.

By combining more than one of the above definitions, we can produce a more accurate definition: assimilation is the process in which sounds become identical or more alike under the influence of a third sound or that of one upon the other. It may occur at the beginning, in the middle, or at the ends of words.

Assimilation is the most common cause of sound change. It plays a great part in phonology and phonetics. Thus it occurs frequently, both as a wide general heading and as one of a number of sub-headings of some other wide general heading. Examples of the sub-headings found under it are:

⁵ *Phonology...* (1984), 171.

⁶ A definition similar to this is given by C. M. Wise. *Applied Phonetics* (1975), 153.

- a. nasalization,
- b. palatalization,⁷
- c. assibilation,⁸
- d. vowel harmony.

Examples of headings under which it may occur are :

- a. sounds in context,
- b. sound change,
- c. morphophonemic change,
- d. sound shift,
- e. phonetic laws,
- f. sounds in connected speech,
- g. phonological processes.

similitude:

Some linguists differentiate between similitude and assimilation. similitude has been defined as "the pronunciation of one segment being influenced by the pronunciation of an adjacent segment"⁹. Daniel Jones says that " The difference between similitude and assimilation must be clearly observed.

⁷ " This process superimposes a palatal articulation on non-palatal consonants which are followed by a front vowel or glide. Palatalization produces sounds such as the [pʏ], [mʏ], [kʏ], and [fʏ] in the words pure, mule, cute, and few from the palatal consonants [p], [m], [k], and [f] ' (See C. Sloat, *Introduction to Phonology*, 113.

⁸ " The process by which a stop consonant becomes a sibilant (groove fricative, groove spirant whistling) consonant owing to assimilation" (see R. Hartmann and others, *Dictionary of Language and Linguistics*, 21, 208.

⁹ Hartmann, *Dictionary of Languages and Linguistics*, 209.

Similitude is the use of a certain variety of sound at the present time. An assimilation is the process of replacing one sound by another under particular conditions. " 10

From these definitions of assimilation and similitude, it is to be noted that the main difference between the two processes is that, in similitude, a sound is compared with itself in different positions, while, in assimilation, a sound is compared with neighboring sounds.

An example of similitude is the voiceless velar stop sound / k / which is articulated forward after front vowels as in the word / kill /, and backward after back vowels as in the word / call /. A simple form for this is as below:

$$\begin{array}{l} k \longrightarrow \text{front} / \text{ ______ } v \\ \qquad \qquad \qquad + \text{ front} \\ k \longrightarrow \text{back} / \text{ ______ } v \\ \qquad \qquad \qquad + \text{ back} \end{array}$$

Similitude, however, may perhaps still be considered as a branch of assimilation.

A question to be raised here is that of what the reason behind the assimilation of sounds is.

Languages behave differently in relation to assimilation. An accurate rule that applies in one language can not necessarily be applied to other languages; even within one language dialects may not behave similarly. In all languages, the phenomenon of assimilation is found. Considering this point, al-Khalīl Ibn Aḥmad observes that languages are not the same in the way in which

10 *The Pronunciation of English*, 128.

they combine sounds and form words; that in Arabic certain combinations may occur that may not occur in other languages, and that Arabic avoids certain word-formations that may occur in other languages. Of this last phenomenon, he gives as examples the beginnings of a word with a consonant not followed by a vowel and the consecutive occurrence within a word of two such consonants.¹¹

An example of these differences is that "an Arabic speaking person would find it difficult to utter the word 'monroe' without assimilating the sound / n / to that of / r /, producing [* mor-ro] instead of [monroe]. The same applies to an / n / that is next to / b / or / p / as in 'unborn' and 'unpredictable'. Indeed we know that English shares assimilation of this kind with Arabic in certain words, such as 'impossible' and 'improper' ".¹²

Differences also occur between even the languages of one family, such as Arabic and Hebrew. An example of assimilation in Hebrew, quoted from Gleason is: "/ *mibbayit* / (from a house) from the base forms / *min* / (from) and / *bayit* / (house)".¹³

Arabic has the same morphemes that Hebrew has cited above. / *min* / (from), and / *bayt* / (a house), even though, when the two words occur contiguously, a partial assimilation occurs here and not complete assimilation as happens in Hebrew. The combined words would be pronounced as [*mim bayt*]. The / n / does not become / b / but rather becomes another

¹¹ A 'umar. *al-Baḥṭh al-lughawi 'ind al-'arab*, 83.

¹² al-Wohaibi. *Qur'anic Variants*, pp. 137-138.

¹³ Gleason. *Descriptive Linguistics*, 84.

bilabial sound / m /. This can be reformulated as:

n + b → m + b : in Arabic

b + b : in Hebrew

Concerning assimilation, a question to be raised is under what conditions it occurs. Again, languages are not the same so far as these conditions are concerned. However, the prime cause of the phenomenon of assimilation is phonological conditioning.

These changes of sounds are caused mainly by the speaker's speed of utterance; the rapid movement of the speech organs from one position to another causes both of the two sounds to change either into a third or into two other sounds very similar to one another. The English phrase "this young man", spoken rapidly, would be pronounced as [ʃiʃ ʃaŋ mæn].

When the assimilation of sounds is caused by "careless" speech it is called "negligent assimilation".¹⁴ An example in Arabic is the phrase: *sawfa afʿal* (I will do). This is pronounced as *saw afʿal* or *saf afʿal*¹⁵. Rapid speech which usually causes the assimilation of sounds to each other or the deletion of sounds, is found mostly among Bedouin.¹⁶

In general, the following law may be cited for changes in sounds : "when two sounds undergo assimilation, the stronger (s) one dominates the weaker (w) one".¹⁷ This holds good for most cases. A similar statement is made by Ibn Jinnī.¹⁸

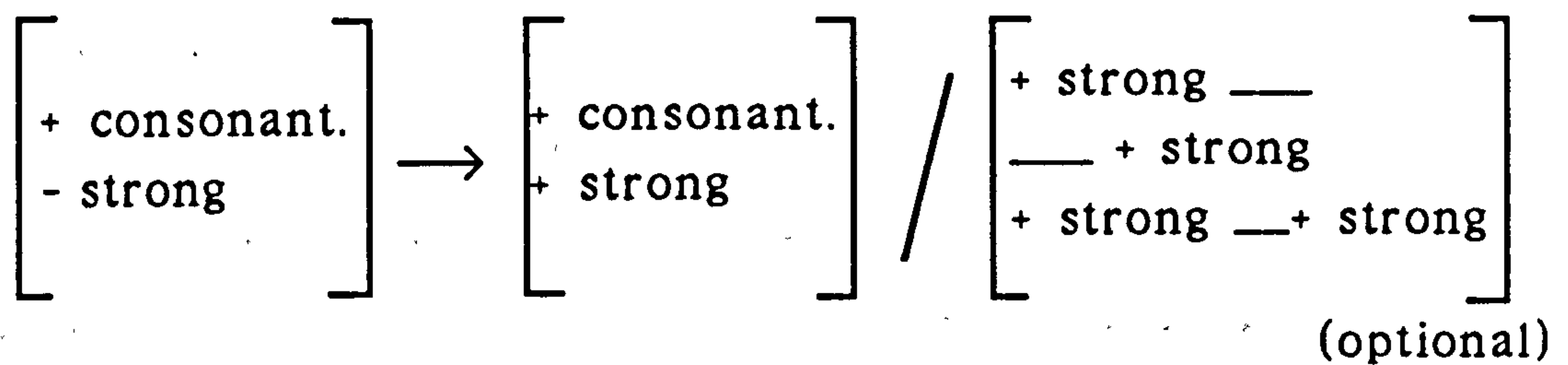
¹⁴ D. Jones. *The Pronunciation of English*, 127-128.

¹⁵ *al-Khaṣāʾiṣ*, 2 / 440.

¹⁶ I. Anis, *Fī al-lahajāt al-ʿarabiyyah*, 71.

¹⁷ J. Foley, *Function of Theoretical phonology*, 133.

¹⁸ *al-Munṣif*, 2 / 328.



Examples are:

voiceless \longrightarrow voiced / voiced —

/ ʔiztaḥama / \longrightarrow [ʔizdaḥama] (to be crowded.).

non-emphatic \longrightarrow emphatic / emphatic —

/ ʔiṣṭabara / \longrightarrow [ʔiṣṭabara] (to be patient.).

It is not only phonetic and phonological rules that determine sound changes; morphological and syntactical conditions may also be involved in both the causing and inhibiting of assimilation. Examples are:

<u>Root</u>	<u>verb</u>	<u>nomen agentis</u>
1. <i>dwm</i>	<i>dāwim</i> (continue)	<i>dāʔim</i> (continuing)
2. <i>ḥwl</i>	<i>ḥāwil</i> (try)	<i>ḥāʔil</i> (obstacle / obstructing)
3. <i>nwl</i>	<i>nāwil</i> (hand)	<i>nāʔil</i> (giving)

In columns two and three, the semi-vowel as central radical has the same environment phonologically, although it changes to the glottal stop / ʔ / in column three for purely morphological reasons; the alternative in the central radical avoids ambiguity.

"Assimilations are not compulsory in many languages, including English. A speaker may, if he chooses, avoid making

them ".¹⁹ They are not " mostly obligatory " in English as A. al-Fāris thinks ²⁰.

On the other hand, in Arabic, this point has to be considered from two separate viewpoints, first that of the Arabic language in general, and second that of the recitation of the *Qurʾān*.

As for the first, some types of assimilation are obligatory. The speaker has to assimilate sounds in certain environments, as for example the / l / of the definite article (*al-*), when followed by *al-ḥurūf aš-šamsiyyah* (the sun letters):

al-badr (the moon),

* *al-ṣadr* (the chest),

aṣ-ṣadr,

al-ghār (the cave),

* *al-nār* (the fire),

an-nār.

Another case of compulsory assimilation in Arabic is that of the / t / that is infixed after the first radical in the / *iftala* / form and its derivatives. This / t / is replaced by the emphatic sounds / ṭ / in certain environments; after *iṭbāq* sounds [ṣ, ḍ, ṭ, ẓ]:

* / *iṣṭabara* / → [*iṣṭabara*] (to become patient),

* / *iḍtaraba* / → [*iḍtaraba*] (to be shaken or disturbed),

* / *iẓtalama* / → [*iẓtalama*] (to act unjustly),

* / *iṭṭalaca* / → [*iṭṭalaca*] (to become clear).

is replaced by / d / after / d /, / ḏ /, and / z /:

¹⁹ Abercromlie, *Elements of General Phonetics*, 135.

²⁰ "Assimilation in Arabic and English. *MKAU* 18 (1976), p. 26. He says: "Assimilation in English is mostly phonemic and obligatory".

* / *idta^{ca}* / → [*idda^{ca}*] (to claim),

* / *iḥtakara* / → [*iḥdakara*] (to remember),

* / *iztāna* / → [*izdāna*] (to become beautiful),

Other cases of obligatory assimilation are, for example:

* / *raḍiwa* / → [*raḍiya*] (to be satisfied),

* / *ṣiwām* / → [*ṣiyām*] (fasting),

* / *siwāt* / → [*siyāt*] (whips),

* / *maywit* / → [*mayyit*] (dead),

* / *marḍiw* / → [*marḍiyy*] (satisfied),

* / *muyqin* / → [*mūqin*] (convinced),

* / *iwtaṣala* / → [*ittaṣala*] (to be connected).

In fact most contiguous assimilations in Arabic are either obligatory or recommended; most non-contiguous assimilations are optional.

As for the second viewpoint, that of the recitation of the *Qurʾān*, we find that Muslims in general and *qurrāʾ* in particular take special care in this; in the recitation of the *Qurʾān* assimilations are obligatory which are optional in ordinary speech. *Qurrāʾ* followed the instruction of Ibn Masʿūd, *jawwidū al-Qurʾān wa zayyinūhu bi ʾaḥsani al-ʾaṣwāt* (make excellent your reciting of the *Qurʾān* and adorn it with the best voice).

We may see from Ibn Mujāhid, a famous scholar in the science of *tajwid*, to what extent such assimilation is taken in recitation of the *Qurʾān*. "The following are some verses in which assimilation is obligatory:

/ *qad tabayyana* / should be read as [*qat tabayyana*] (has become clear), / *wa laqad taraknā* / should be read as [*wa laqat taraknā*] (and we have left), / *wa qālat ṭāʾifatun* / should be read as [*wa qālat ṭāʾifatun*] (a section of the people said), and / *hammat ṭāʾifatāni* / should be read as [*hammat ṭāʾifatāni*] (two parties meditated); in all assimilation should take place... it is foreign to the speech of the Arabs and very weak without assimilation ".²¹

Now we turn to Arabic to see what sub-headings may be listed under this general heading of assimilation and also under general headings assimilation may occur:

1. *Idghām*:

The term *idghām*, in its general sense, covers most of the assimilation processes. However, it is not an equivalent term exactly to the English "assimilation". The closest Arabic term to this is *taqārub al-aṣwāt*.

The term *idghām*, as used by the *Kūfan* school of grammar, and *iddighām* as used by the *Baṣran* school, is defined as the gemination in pronunciation of two identical sounds; these may be written as one letter with *shaddah* (doubling marker) above it. This is usually phonetically represented as either (cc) or (c:).

In fact, the Arabs use the term *idghām* for pure gemination without assimilation, complete assimilation which leads to gemination as a final result, and partial assimilation

²¹ *Kitāb as-sabʿah fī al-qirāʾat*, 115.

where there is no gemination at all.

These different uses encompassed by the term *idghām* may be represented as follows:

1. Gemination:

in its strict sense, which is the combination of two identical sounds. This gemination may be:

- a. Contiguous, where the two sounds are adjacent without a short vowel in between. This type of assimilation is only found in across- word- boundary positions : — $C_1 - C_1$ —
e.g. / *bal lahu* → *ballahu* / (but for him). The gemination here is optional, that is to say the speaker can make a short pause without geminating the two sounds.
- b. Non-contiguous, where the two identical sounds are separated by a short vowel which is deleted when gemination occurs, as in this example *ṣadada* → *ṣadda* (to shun). [vowel deletion, and gemination] .

2. The second status of *an-nūn as-sākinah* and *tanwīn* (the vowelless / n / and nunation)²²:

The complete assimilation of [— n] with the following six sounds / y, m, n²³, w, l, and r / results in gemination.²⁴ Some examples are:

²² *an- nūn as- sākinah* and *tanwin* are phonetically the same. They are pronounced as vowelless / n /; however, they have different functions morphologically and syntactically.

²³ There is no assimilation when / n / is followed by another / n / because they are already identical, but there is gemination.

²⁴ More detailed discussion will be provided later on.

a. Vowelless / n /:

min wāqin → *miwwāqin* (of a defender),

man yaqūlu → *mayyaqūlu* (who says),

min māʾ → *mimmāʾ* (from water),

min naʿīr → *minnaʿīr* (of a warner),

min rabbiḥim → *mirrabbiḥim* (from their lord),

min ladunnā → *milladunnā* (from our presence).

b. Nunation:

raḥīmun wadūd → *raḥīmuwwadūd* (compassionate and loving),

wujūhun yawmaʾiḥin → *wujūhuyyawmaʾiḥin* (faces on that day),

qawlun maʿrūfun → *qawlummaʿrūfun* (kind words),

yawmaʾiḥin nāʿimah → *yawmaʾiḥinnāʿimah* (that day will be joyful),

raʾūfun raḥīm → *raʾūfurraḥīm* (kind and compassionate),

fa salāmun laka → *fa salāmullaka* (peace be unto you).

3. Complete assimilation:

complete assimilation can be of two kinds, contiguous and non-contiguous, known as *al-idghām aṣ-ṣaghīr* (small) and *al-idghām al-kabīr* (large) respectively.

An example of the first is:

**ʾiwtaṣala* → *ʾittaṣala* (to be connected);

and an example of the second is:

khalaqakum → *khalakkum* (He created you).

It is clear that complete assimilation comes about through two processes: first, the changing of one sound so as to be identical with another; second, the geminating of the two identical sounds so as to be one long one. *Idghām*, then, refers essentially to the latter process.

4. Partial assimilation.

An example of this type is: *ʿanbar* → *ʿambar*. Many Arabic linguists however do not refer to this type of assimilation by the name *idghām*. Ibn Jinnī is one of those who do so. He says: "*Idghām* is the approximation of one sound to another sound"²⁵. He gives examples for the various types of assimilation to all of which he gives this name, such as *imālah*, emphatic assimilation, vowel harmony, and voicing assimilation.²⁶

To sum up what the term *idghām* means in classical Arabic, it may refer to any one of the following:

1. Gemination.
2. Assimilation of final / n / to the six sounds (w, y, r, l, n, m).
3. Complete assimilation.
4. Partial assimilation.

2. *Ibdāl* (substitution) :

The term *ibdāl* has been used differently by philologists and by grammarians:

²⁵ *al-Khaṣāʾiṣ*, 2 / 139.

²⁶ *op. cit.*, 2 / 141 -145; see also his *at-Taṣrīf al-mulūki*, 97-107.

1. *Ibdāl* as used by philologists:

Philologists use it in a specific sense to mean that two words have the same meaning and their forms differ only in one sound. Ibn al-Sikkīt (-244 A.H.), lists about 300 words in his *al-Qalb wal-ibdāl*. Some examples of these are:

- aqṣar / aqṣal* (shorter),
- al-ʿunṣur / al-ʿunṣul* (the original),
- aθ-θūm / al-fūm* (garlic),
- ḥazn / ḥazm* (hard),
- laḥm / lahm* (meat).

Abū aṭ-Ṭayyib al-Lughawī (- 315 A. H) lists about 2800 pairs of words of this type in his *Kitāb al-ibdāl*.

The best explanation of this type of *ibdāl* is given by Abū aṭ-Ṭayyib al-Lughawī: "*Ibdāl* does not mean that the Arabs deliberately substitute one sound for another; they (the different forms) are purely dialectal variations with identical meanings". He gives examples: "The same tribe does not pronounce a word sometimes with *hamzah* and sometimes without, nor does it sometimes pronounce a word with *ṣād / ṣ /* and sometimes with *sīn / s /* ... one tribe says this and other tribes say that".²⁷ So does al-Baṭalayawsī in his *Sharḥ al-Faṣīḥ*. This kind of *ibdāl* is called *al-ibdāl al-lughawī* (linguistic *ibdāl*) or *al-ibdāl as-samāʿī* (aural *ibdāl*), which cannot be defined by rules. Many scholars have written about this type of *ibdāl*; some have devoted whole books to it. As examples, we may cite:

²⁷ as-Suyūṭī. *al-Muzhir*, 1 / 460.

1. Complete books on *ibdāl*:

- a. *al-Qalb wal-ibdāl* by al-Aṣmaʿī (-216 A.H.), not known to be extant.
- b. *al-Ibdāl* by Abū ʿUbaydah Maʿmar Ibn al-Muthannā, not known to be extant.
- c. *al-Ibdāl* by ʿAlī Ibn ʿAsākir, not known to be extant..²⁸
- d. *al-Qalb wal-ibdāl* by Ibn as-Sikkīt (-244 A.H.), printed.
- e. *al-Ibdāl wal-muʿāqabah wan-naḥḥāʾir* by az-Zajjājī (-340 A.H.), printed.
- f. *al-Ibdāl* by Abū aṭ-Ṭayyib al-Lughawī (- 351 A.H.), printed.

2. Books including chapters on *ibdāl*:

- a. *al-Khaṣāʾiṣ* by Ibn Jinnī (-392 A.H.).
- b. *Sirr ṣināʿat al-iʿrāb* (id.).
- c. *al-Mukhaṣṣaṣ* by Ibn Sīdah (-458 A.H.).
- d. *al-Amālī* by Abū ʿAlī al-Qālī (-356 A.H.).
- e. *al-Muzhir* by as-Suyūṭī (-911 A.H.).

2. *Ibdāl* as used by grammarians:

Ibdāl is defined by grammarians as " the replacing of one sound (any sound) by another".²⁹ It is more susceptible to definition by rules than *ibdāl samāʿī*. It is this kind of *ibdāl* of which the term is more commonly used. Grammarians divide it into four groups:

- a. *Ibdāl shāʾiʿ* (widespread *ibdāl*) leading to gemination (complete assimilation). This type may be found with any sound except *alif* / *ā* /. We have seen this above in

²⁸ ʿĀdil Zaydān, *Abū aṭ-Ṭayyib al-lughawī wa ʾathāruhū fi al-lughah*, 56 - 60.

²⁹ *Sharḥ at-taṣriḥ ʿalā at-tawḍīḥ*, 2 / 366.

idghām leading to gemination.

b. *Ibdāl nādir* (rare *ibdāl*) leading to gemination. This is limited to six sounds : ḥ, x, ʕ, q, ḍ, and ḡ. Examples are:

waknah / *waqnah* (the house of a cat in the mountains),

ʔaḡann / *ʔaxann* (one who speaks nasally),

rubʕ / *rubḥ* (quarter),

xaṭar / *ʕaṭar* (danger),

jild / *jiḍd* (skin),

talaʕama / *talaʕḡama* (to falter).

c. *Ibdāl shāʔiʕ* not leading to gemination (partial assimilation).

Khālīd al-Azharī divides this type into two groups:

1. Not important for *at-taṣrīf* (accidence). This *ibdāl* may be found among twenty two sounds : l, j, d, ṣ, r, f, š, k, s, ʔ, m, n, ṭ, y, ʕ, w, b, ʕ, z, t, h, and ā.

2. Important for accidence: this *ibdāl* may be found among nine sounds : ʔ, h, d, t, ṭ, y, ā, w, and m. We will see below that this group is sometimes called *iʕlāl* or *qalb*.

d. *Ibdāl nādir*, not leading to gemination, as in this example:
/ *ʔuṣaylāl* → *ʔuṣaylān* / diminutive of the word / *ʔaṣīl* / (the time before sunset). This kind does not work by analogy.

The examples that al-Azharī gives of *ibdāl nādir* cannot be considered as cases of gemination, as he claims.³⁰

The main difference between the philologists and the grammarians in their treatment of *ibdāl* is that the philologists are more specific in limiting *ibdāl* to *samāʕī* (that which is

³⁰ *Sharḥ at-taṣrīḥ ʕalā at-tawḍīḥ*, 2 / 366.

actually heard); while the grammarians regard it as being *qiyāsī* (analogical) as well as *samāʿī*. Moreover, *ibdāl samāʿī* may be considered as representing dialectal divisions while *ibdāl qiyāsī* may be considered as not necessarily doing so. It may be obligatory, as in:

/ * *raḍiwa* → *raḍiya* / (to satisfy), or optional, as in:

/ *wujūh* / *ʔujūh* / (faces).

Ibdāl is widely used in Arabic. It applies to all Arabic sounds. To quote Ibn aṣ-Ṣāʿigh: "You will not find many sounds that are not involved in *ibdāl*, even if rarely".³¹

3. *Iʿlāl* (literal meaning: weakening):

The grammarians divide *iʿlāl* into three categories:

a. *Iʿlāl bil-qalb*:

This is the replacing of a long vowel, a glide, or a glottal stop / ʔ / by either of the other two. To grammarians, *iʿlāl* is more specific than *ibdāl*, because *ibdāl* covers both vowels and consonants; *iʿlāl* is limited to these three. Another difference between *ibdāl* and *iʿlāl* is that the former may be *samāʿī* or *qiyāsī* while the latter is mostly *qiyāsī*. Some examples of *iʿlāl bil-qalb* are:

wiṣāḥ / *ʔiṣāḥ* (faces),

* *samāw* → *samāʔ* (sky).

The first example is optional while the second is obligatory.

b. *Iʿlāl bin-naql*:

This is the removing of a short vowel from one sound to another, such as:

³¹ *al-Muzhir*, 1 / 461.

/ * *maqwūl* → *maqūl* (said),

/ * *yabyi^cu* → *yabī^cu* (he sells).

According to the grammarians, the *ḍammah* / u / in the first example is shifted from the glide / w / backward to / q /, similarly *kasrah* / i / in the second example is shifted backward from the glide / y / to / b /.

c. *i^clāl bil-ḥaḏf*:

This is the deletion of a long vowel, a glide, or a glottal stop. An example of this type of *i^clāl* is:

/ * *yaw^cidu* / → *ya^cidu* (promises).

4. *Qalb*:

a. To the grammarians, *qalb* is similar to *i^clāl*: however, it does not include the deletion of long vowels and the transfer of short vowels as does *i^clāl*.³² So the examples in (1) below may be called either *i^clāl* or *qalb*, while those in (2) can only be called *i^clāl*:

(1) * *miwzān* → *mīzān*,

* *samāw* → *samāʾ*,

(2) * *yaqwulu* → *yaqūlu*,

* *yaw^cidu* → *ya^cidū*.

b. To the philologists, *qalb* is somewhat different, constituting metathesis [C₁ C₂ C₃ → C₁ C₃ C₂], as in: / *jaḏaba* / *jabaḏa* / (draw). " According to as-Suyūṭī, there are no examples of this in the *Qurʾān*".³³

³² an-Najjar M. *Diyaʾ as-sālik*, 4 / 246.

³³ as-Suyūṭī, *al-Muzhir*, 1 / 476.

5. *Iqlāb*:

This term is used mostly in the science of *tajwīd* to mean the changing of the sound / n / to another nasal sound / m / when it is followed by the bilabial sound / b /. *Iqlāb* is one of the four modifications of *nūn sākinah* and *tanwīn*, frequently used in the reciting of the *Qurʾān*. Some examples of *iqlāb* are:

/ʾanbāʾ/ → [ʾambāʾ] (news, stories),

/ min bayni / → [mim bayni] (from between).

6. *Ikhfāʾ* (literal meaning is hiding or concealing)

This is specifically coalescent assimilation, in which both sounds are affected by one another. It is another modification of the *nūn sākinah* and *tanwīn*, when it occurs immediately before these following fifteen sounds : ṣ, ḏ, ʾ, k, j, š, s, q, d, t, ṭ, z, ḏ, ʾ, and f. It will assimilate homorganically and partially to these sounds. An example is:

/ʾan kāna/ → [ʾaṇ k̃āna] (if he / it was). The sounds (n, k) assimilate to one another to some extent.

7. *Itbāʿ* (alliteration) :

This term means two totally different things:

1) *Itbāʿ* is "ʾan tatbaʿ al-kalimatu al-kalimata ʿalā waznihā ʾaw rawiyyiha ʾishbāʿan wa tawkidan"³⁴ (A word being followed by another with the same form or final sound for supplementation and emphasis). As a stricter definition we may say that the two words (sometimes three words) differ in form and sound usually in one respect only, for examples:

³⁴ *al-Muzhir*, 1 / 414.

sāghib lāghib (hungry),
ḥasan basan (good or beautiful),
jāʾiᶜ nāʾiᶜ (hungry),
ᶜaṭshān naṭshān (thirsty),
ḥārr yārr (hot),
kharāb yarāb (ruination).

In these examples, three points may be mentioned:

- a. The second word of each set usually has no independent sense.
- b. There is usually no conjunction between the two elements of each set.
- c. (More important) there is no *ibdāl* in this type of *itbāᶜ*, that is to say in the first example / l / does not represent *ibdāl* of / s /, and similarly with the other sets. The reason for this may be that:
 - 1) In *ibdāl*, the two forms are not used at the same time by the same speaker.
 - 2) In *ibdāl*, whichever form is used has an independent sense. ar-Rāzī says: "*at-Tābiᶜ* is not meaningful in isolation", al-ʾĀmidī says: "It has absolutely no meaning at all"³⁵.

2) The second type of *itbāᶜ* is what modern linguists call "vowel harmony", in which vowels assimilate to the adjacent vowels progressively or regressively. An example of this would be:

/ al-ḥamdu lil-Lāhi / → / al-ḥamdu lul-Lāhi / or

³⁵ *al-Muzhir*, 1 / 415.

/ *al-ḥamdi lil-Lāhi* / (praise be to *Allāh*).

This kind of *itbāʿ* is important to our topic "assimilation". It is called sometimes *Taqrīb* (approximation).

Below is a list of other headings or sub-headings under which the Arabs discussed assimilation or some aspects of assimilation:

8. *Muḍāraʿat al-ḥurūf* (assimilation or approximation of sounds).

9. *Ishbāʿ al-ḥurūf* (the changing of a short sound to a long one).

10. *Imālah* (inclination).

11. *Ghunnah* (nasality).

12. *Taḍʿīf* or *tashdīd* (gemination).

13. *Makhārij al-ḥurūf wa ṣifātuhā* (the point and manner of articulation of sounds).

14. *Nasab* (relation).

15. *Taṣghīr* (diminution).

16. *Jumūʿ* (plurals).

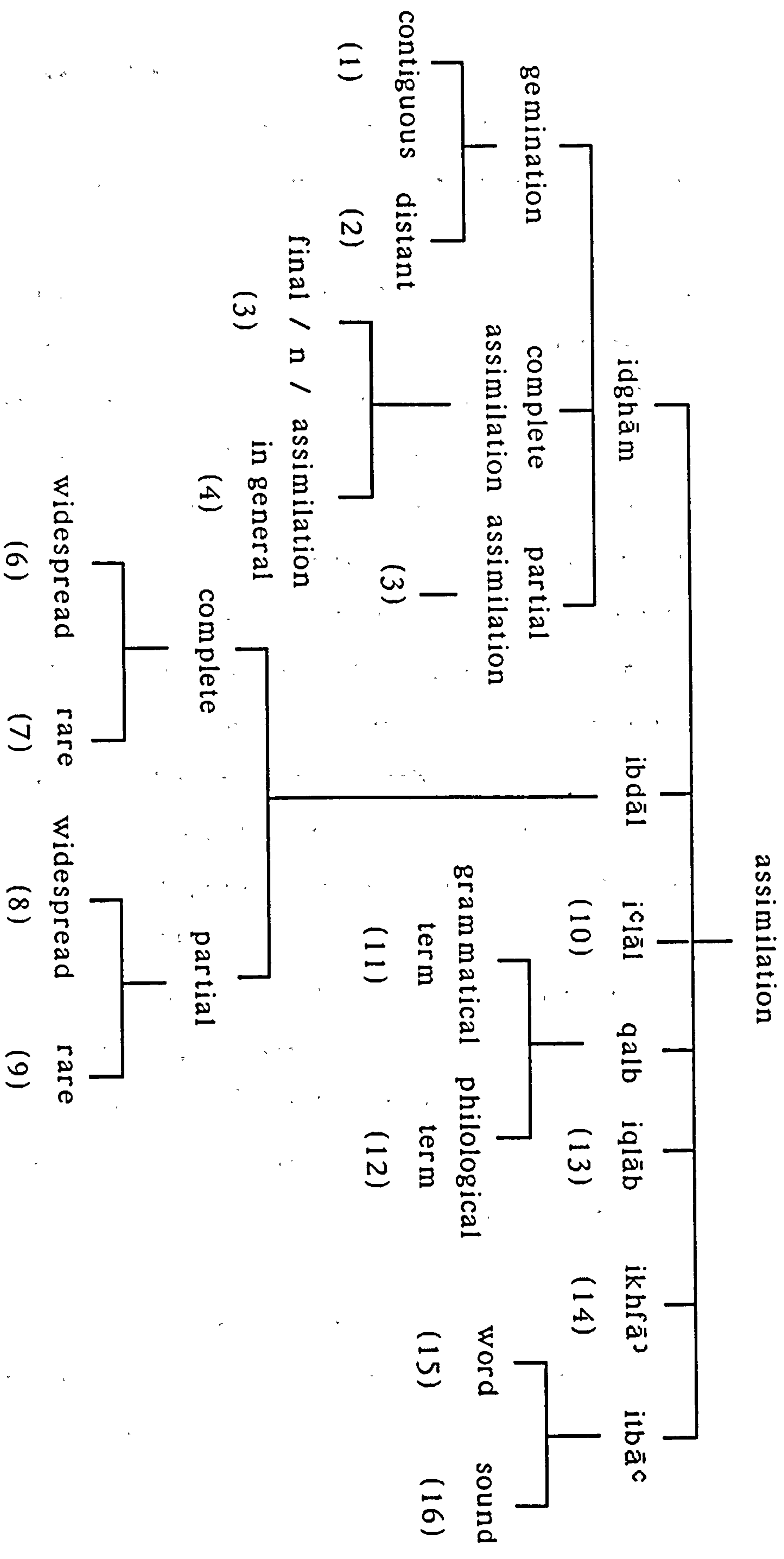
Not all these topics have much connection with assimilation; some of them have to do with it only in minor details.

The scope of this chapter so far may give the reader the impression that the topic of assimilation is an extremely wide one which subsumes many other topics; however, this is not in fact the case, for the following reasons:

1. The Arabs discuss one thing under a number of different headings and sub-headings.

2. Alternatively, they also deal with many topics sometimes unrelated or only loosely related, under one heading.
3. The application of phonetic and phonological rules reduces the bulk of the topic as it at first appears: we shall deal with this later.

The topics from the headings listed above that are most closely related to assimilation will be discussed in detail below.



Examples of these types are as follows: (1) qul lahu → qullahu, (2) ʿadada → ʿadda, (3) min raḥmati → mirraḥmati (4) *ʔiwaṣala → ʔittaṣala, (5) *ʿanbar → ʿambar, (6) ʔiṭṭarada → ʔiṭṭarada, (7) waḥnah → waqnah, (8) iṭṭarada → iṭṭarada, (9) ʔuṣalāl → ʔuṣalān, (10) *qawala → qāla, (11) *qāwil → qāʔil, (12) jaḏaba → jabaḏa, (13) ʔan būrika → ʔam būrika, (14) man saʔala → manṣaʔala, (15) sāḡib lāʿib, and (16) al-ḥamdi lilāhi.

2.2. Direction of assimilation:

When sounds are pronounced contextually, they are likely to influence one another. This influence may work in either direction and sometimes in both.

In the first case, forward influence, a sound is affected by the preceding conditioning one. It is called progressive assimilation, or perseverative assimilation. (S (sound) \longrightarrow S) as in: * / ʔiḍtaraba / \longrightarrow [ʔiḍtaraba] (to be confused).

In the second case, backward influence, the preceding sound is influenced by the following one. It is called regressive assimilation, anticipatory assimilation, or retrogressive assimilation (S \longleftarrow S). Sometimes it is called "umlaut" when it is happen between vowels; an example of regressive assimilation is: / * al-shams / \longrightarrow ash-shams [aš-šams] (the sun).

In the third case, where the influence is found in both directions, forward and backward, both preceding and following sounds affect one another. This is called coalescent assimilation, reciprocal assimilation, bi-directional assimilation, or fusional assimilation. (S \longleftrightarrow S) ; an example is:

/ ʔankālan / \longrightarrow [ʔaṅk̃ālan] (fettters).

The influence of one sound on another is not limited to within a word, it occurs also across word and phrase boundaries. Some examples are:

/ man raʔā / \longrightarrow [marraʔā] (who saw ?).

/ yawmaʔiḍin wāhiyah / \longrightarrow [yawmaʔiḍiwwāhiyah]
(that day it will be flimsy).

2.2.1. Progressive Assimilation:

Progressive assimilation, where the influential sound seems to be travelling forward, is less common than regressive assimilation, at least in both English and Arabic; even so, instances of progressive assimilation are not as rare as some linguisticians think.¹ The best examples in English are:

1. The suffix / s / as plural suffix, third person singular suffix, or possessive suffix. This sound is pronounced as actual / s / after voiceless sounds, and it is pronounced as / z / after voiced sounds.

S → [s] / v l _

→ [z] / v d _

or in other words : ~~S~~ S → α voice / α voice _

cats [cats]

dogs [dogz]

books [books]

beds [bedz]

2. The past and past participle suffix [d / ed] is pronounced as voiced when preceded by voiced sounds and as unvoiced when preceded by unvoiced sounds. The word / live / is pronounced [lived], and the word / jog / is pronounced as [jogd]. The word / picked / is pronounced [pikt], and the word / finished / is pronounced as [finišt]. In the above two cases, the process is called voicing and devoicing assimilation.

In the same way, progressive assimilation in Arabic is not rare. Again the best examples of progressive assimilation are:

1. Progressive *imālah* after non-*mustaʿlī* sounds as in / ʿibād / → [ʿibēd] (people or servants).
2. progressive vowel harmony as in / al-ḥamdu lil-Lāhi / →

¹ See for example, C. M. Wise, *Applied phonetics*, 153.

[*al-ḥamdu lūl-Lāhi*] (praise be to Allah).

3. Some emphatic examples as / *ṣalāh* / → [*ṣ>!ḥ*].
(prayer).²

4. The / *t* / of *iftaʿāla* and its derivations. This will be discussed in detail below.

2.2.1.1. *Iftaʿala*:

The form *iftaʿala* is one of the derived forms (VIII) of the triliteral verb.³ *iftaʿala* "is formed from the first [form] *faʿala* by inserting the syllable / *t* / between the first and the second radicals. The first radical in consequence loses its vowel and it becomes necessary to prefix the prosthetic / *i* /".⁴ Reference to *iftaʿala* should be taken as reference to all its derivatives as well, e.g. :

iftaʿala (past tense),

yaftaʿilu (present tense),

iftaʿil (imperative),

iftiʿāl (infinitive noun),

muftaʿil (nomen agentis),

muftaʿal (passive participle), and

² More kinds and examples of progressive assimilation will be provided in other sections.

³ Derived forms of the Arabic triliteral verb are :

1. <i>faʿala</i>	2. <i>faʿʿala</i>	3. <i>fāʿala</i>
4. <i>ʾafʿala</i>	5. <i>tafaʿʿala</i>	6. <i>tafāʿala</i>
7. <i>infaʿala</i>	8. <i>iftaʿala</i>	9. <i>ifʿalla</i>
10. <i>istafʿala</i>	11. <i>ifʿālla</i>	12. <i>ifʿawʿala</i>
13. <i>ifʿawwala</i>	14. <i>ifʿanlala</i>	15. <i>ifʿanlā</i>

(See W. Wright, *A Grammar of the Arabic Language*. I., 29.

⁴ *Ibid.* I, 41.

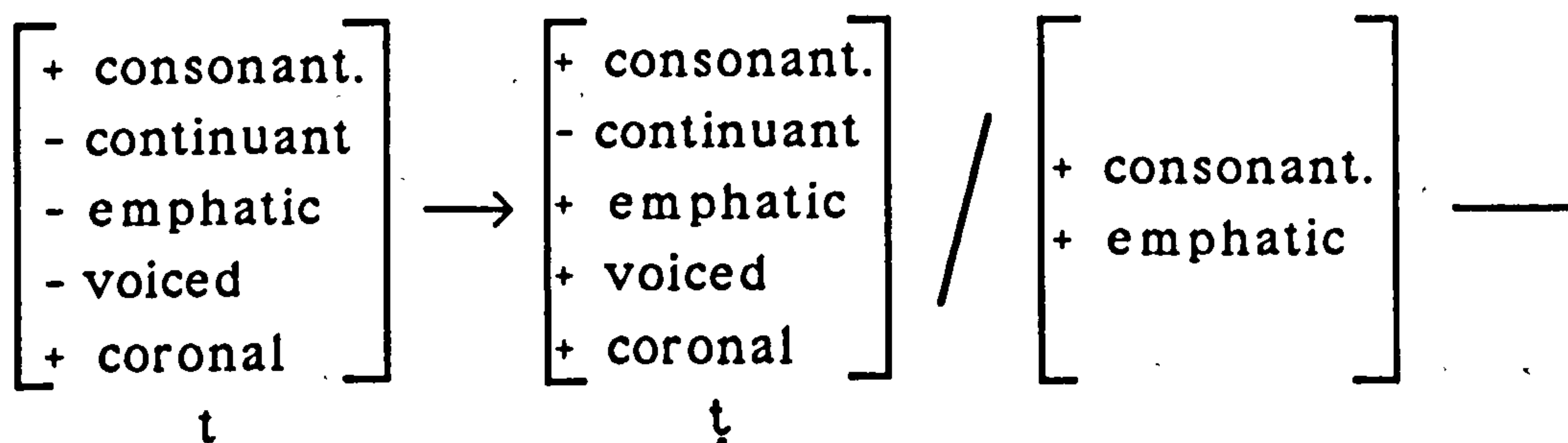
duftu^cila (passive past tense).

2.2.1.1.1. $t \rightarrow \text{ṭ}$:

The infix / t / of *ifta^cala* and its derivation is written and pronounced as / ṭ / when it is preceded by a *muṭbaq* (completely emphatic sound), that is to say when the first radical in this element is one of the sounds : ṣ , ḍ , ṭ , and ḫ . These are some examples:

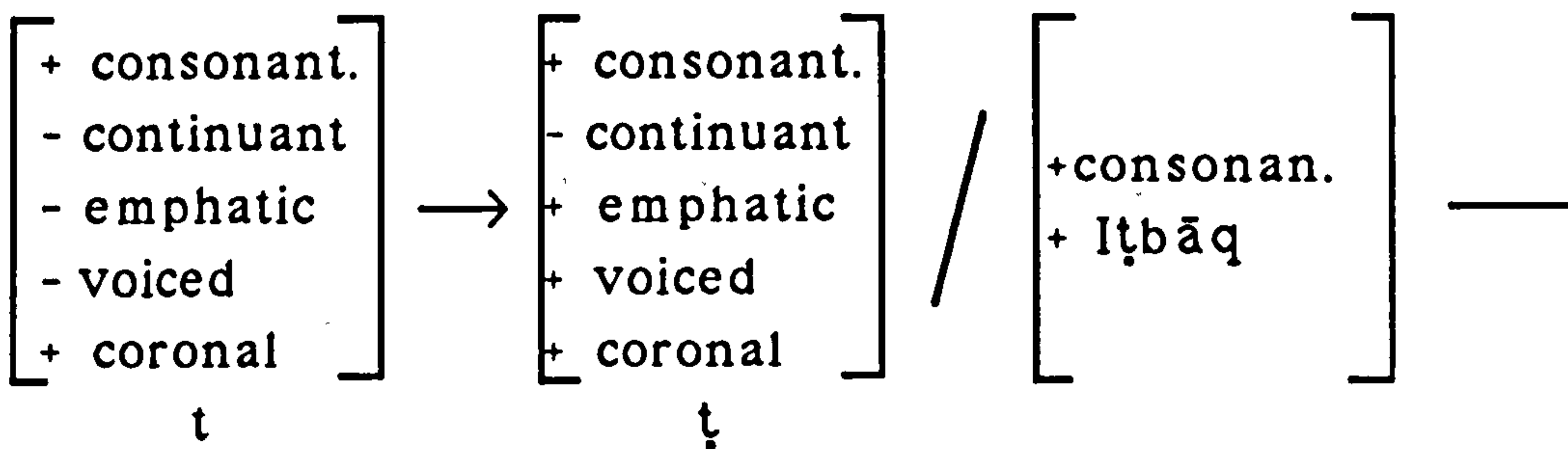
- * / *iṣtabara* / \rightarrow [*iṣṭabara*] (to be patient),
- * / *iḍtaja^ca* / \rightarrow [*iḍṭaja^ca*] (to lie down),
- * / *iṭtala^ca* / \rightarrow [*iṭṭala^ca*] (to inspect), and
- * / *iḫtalama* / \rightarrow [*iḫṭalama*] (to suffer injustice).

Being stronger, the emphatic sounds change the sound / t / into the nearest emphatic sound / ṭ /. This may be represented in the form:

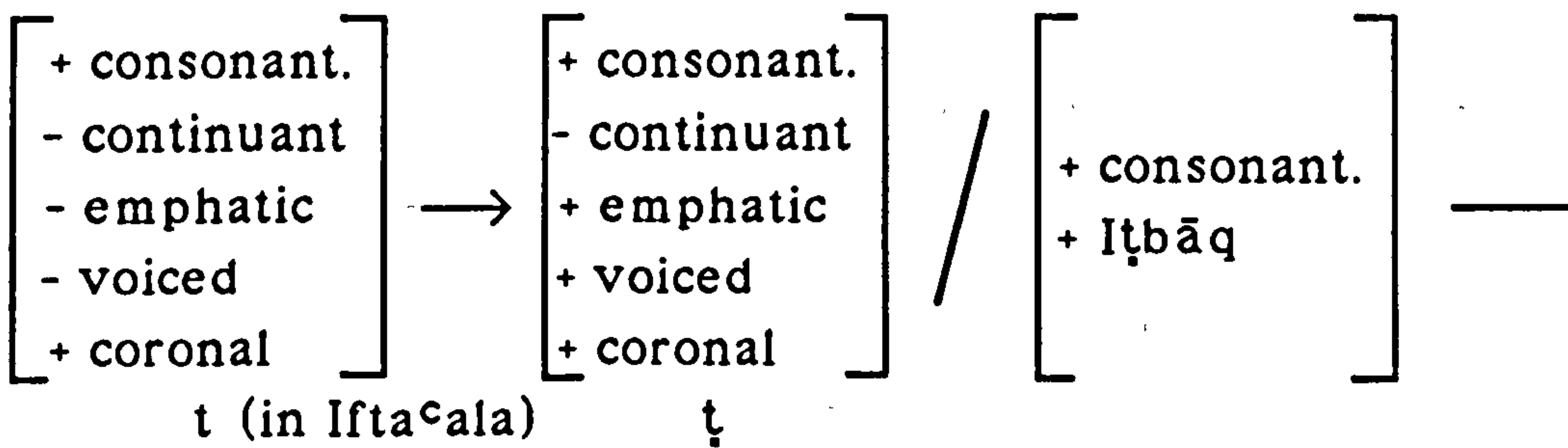


Some modification should be made as below:

- a. The sound / t / in / *iqtaraba* / (to be near) does not change to / ṭ /, although it is preceded by emphatic sound / q /. This is because this sound is a partial emphatic and not a complete emphatic, so our form has to be restated as:



b. The sound / t / in / ʔakhlaʃtu / (I was sincere) does not become / ɬ / because the word is not in *iftaʕala* form. Therefore, the preceding form should be modified again to:



The following points may also be noted:

1. The assimilation here is obligatory. Speakers are not allowed to pronounce actual / t /.
2. The assimilation is partial. However, complete assimilation may take place with certain sounds. For instance, three of the four examples given above may assume alternative forms:

- * *iṣṭabara* → *iṣṣabara* / *iṣṭabara* /,
- * *iḍṭaja^ca* → *iḍḍaja^ca* / *iḍṭaja^ca* /, and
- * *iḍṭalama* → *iḍḍalama* / *iṭṭalama* /.

This may be represented as:

$$\left[\begin{array}{l} + \text{ consonantal} \\ - \text{ continuant} \\ - \text{ voiced} \\ + \text{ coronal} \end{array} \right] \longrightarrow (\propto i\dot{t}b\bar{a}q) / (\propto i\dot{t}b\bar{a}q) \text{ — } \\ t \text{ (in } i\dot{t}a^c a \text{)}$$

3. Related to the sound / t / when the first radical in a root in the *ifta^cala* form is / ṭ / yet another alternative is possible:

$$i\dot{\tau}talam a \longrightarrow \begin{array}{l} i\dot{\tau}talam a \\ i\dot{\tau}\taualam a \\ i\dot{\tau}\tau\taualam a \end{array}$$

This variation occurs only with / ṭ / and appears to violate the general law of assimilation whereby the stronger sound affects the weaker.⁵ / ḍ / is stronger than / ṭ /, but / ṭ / is weaker, according to Ibn Jinnī.⁶

4. There are two further cases of assimilation in the *ifta^cala* form, when the first radical is / ḍ /. They are considered exceptions. Both involve the / ḍ j^c / root :

$$a. * i\dot{\delta}taja^c a \longrightarrow i\dot{\delta}\tauaja^c a \longrightarrow i\dot{\tau}\tauaja^c a.$$

$$b. * i\dot{\delta}taja^c a \longrightarrow i\dot{\delta}\tauaja^c a \longrightarrow i\dot{\tau}\tauaja^c a.$$

5. In fact, the sound / t / following an *iṭbāq* sound contiguously is not found in the same word except in two cases⁷:

⁵ This law is known in modern linguistics as "The law of the stronger". It is ascribed to a French linguist Maurice Grammond (see A. ʿUmar, *Dirāsāt aṣ-ṣawt al-lughawī*, 319). However, Ibn Jinnī stated this law a long time before Grammond.

⁶ *al-Munṣif*, 2 / 328. Indeed, Ibn Jinnī reports some examples against this rule. One of them is: *fusṭāṭ* ← *fustāt*, where / ṭ / ← / t / (*Sirr ṣināʿat al-irāb*, 1 / 157).

⁷ I have not come across any other examples.

1. *Ifta'ala* and its derivatives.

2. When the pronoun suffixes / *tu* /, / *ta* /, / *ti* /, / *tum* /, or / *tunna* / are added to a verb ending in an *iṭbāq* letter. These are some examples:

rabaṭ + *tu* (I tied),

ḥafaḏ + *ta* (you [mas. sg.] kept),

ḥaraṣ + *ti* (you [fem. sg.] desired), and

rakaḏ + *tum* (you [mas. pl.] run).

The sound / *t* / here is not assimilated to / *ṭ* /, / *ṣ* /, / *ḏ* /, or / *ḍ* /. Indeed, Arabic phoneticians report and accept a few examples only in this case which have been assimilated. They are ⁸:

1. *faḥaṣṭu bi rijlī* (I scratch the ground with my foot) [instead of *faḥaṣtu*].

2. *ḡabaṭtu biniḡmatin* (I was in an enviable position) [instead of *ḡabaṭtu*].

These examples, however, are limited to *samā'ī* words, whereas assimilation of / *t* / in the *ifta'āla* form is *qiyāsī*.

2.2.1.1.2. *t* → *d*:

Again the infix / *t* / of the form / *ifta'ala* / and its derivatives is written as well as pronounced as / *d* /, its voiced counterpart, after the voiced sounds / *d* /, / *ḏ* /, and / *z* /. Here are some examples:

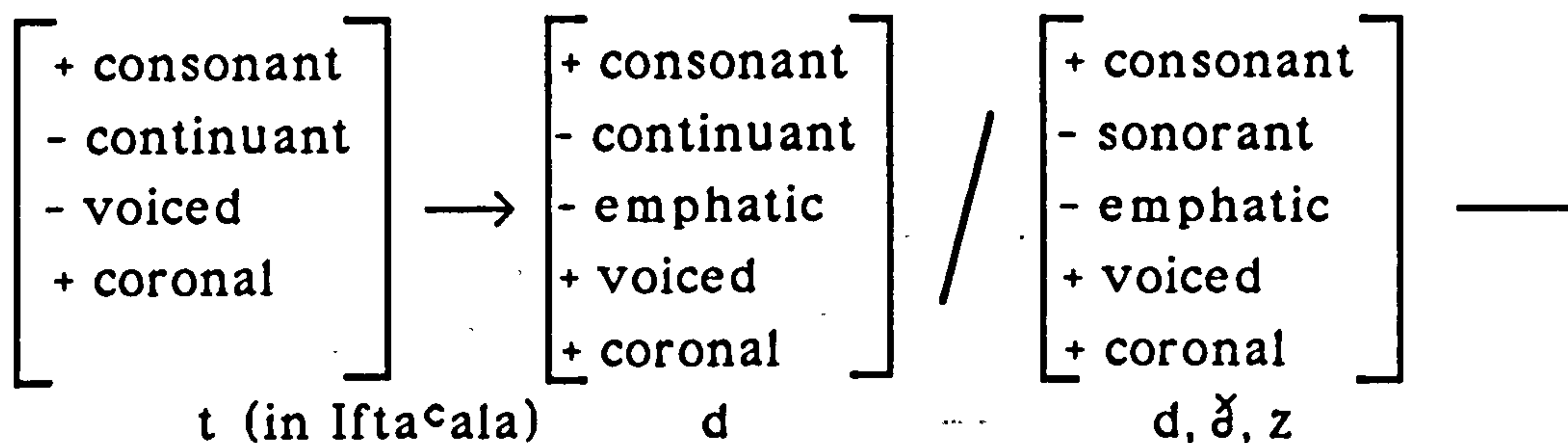
* *idta'ā* → *idda'ā* (to claim),

* *iḏtakara* → *iḏdakara* (to remember), and

* *iztahara* → *izdahara* (developed).

⁸ *Sirr ṣinā'af al-irāb*, 1 / 231.

To state a form for this type of assimilation, we can say:



In relation to this kind of assimilation, the following points may be stated:

- a. The assimilation of / t / here is also obligatory.
- b. It may take the form of complete as well as of partial assimilation; the two may be regarded as free variations:

* *iztahara* → *izdahara* / *izzahara* .

* *iđtakara* → *iddakara* / *iđđakara* / *iđdakara*.

These free variations are listed according to their frequency of use .

- c. Even though the sound / j / does not have coronal features, some examples of the assimilation of / t / to / d / after it are also reported:

Ijtama^cū → *ijdama^cū* (they got together),

Ijtazza → *ijdazza* (to cut off).

These examples are *samā^cī* and analogical uses are not acceptable.⁹

It is clear from the above scheme that:

1. the complete emphatic *iḥbāq* sounds are phonologically stronger than the non-emphatic.

⁹ *Sirr šinā'at al-irāb*, 1 / 187.

2. it is almost exclusively the voiced sounds that provoke assimilation here; the only exception is the fricative emphatic / ʂ /, which is voiceless.

M. O .A	p. O .A	interdental		alveolar	
stops	vl			t	
	vd			d	ṭ
fricative	vl				ʂ
	vd	ð	ḏ	z	ḏ

2.2.2. Regressive Assimilation

As has been stated earlier, the influential sounds move backwards in regressive assimilation.

When the term assimilation is used with reference to Arabic, what is generally meant is regressive assimilation leading to gemination. However, assimilation is not always exclusively regressive. Arabic linguists and scholars of *tajwīd* discuss and explain progressive as well as regressive assimilation. The assertion of Ibrāhīm Anīs that the latter restrict the discussion of assimilation in their writings to the regressive form¹⁰ is false. *Imālah* and *tafkhīm* are examples of progressive as well as regressive assimilation; these two topics are discussed in depth in books in *Qirāʾāt*.

To understand the reason for the predominance of regressive over progressive assimilation, it is necessary to

¹⁰ *Fī al-lahajāt al-ʿarabiyyah*, 70.

consider the syllable structure of the language, which determines the direction of assimilation. The syllable structures in Arabic are six in number:¹¹

1. cv : *li* (for),
2. c \bar{v} : *lā* (no),
3. cvc : *man* (who?),
4. cvcc : *ḡirs* (molar),
5. c \bar{v} c : *bāb* (door),
6. c \bar{v} cc : *mārr* (passer-by).

Where (C= consonant), (v = vowel), and (\bar{v} = long vowel).

We may conclude that:

1. a syllable does not begin with a vowel, whether short or long .
2. a syllable may end with a consonant, a short vowel, or a long vowel.
3. no vowel may be contiguous with another vowel.
4. a syllable may not end with two consonants except in pause.
5. the " onset "¹² of the syllable is definitely stronger than its "nucleus "¹³ and its " coda "¹⁴. This is because of the fact that consonants are stronger than vowels.
6. a syllable may be open or closed¹⁵.

¹¹ See S. Al-Ani and D. R. May, "The Phonological Structure of the Syllable in Arabic"; *Readings in Arabic Linguistics*, (ed.) Al-Ani, 117.

¹² The initial sound or sounds.

¹³ The central sound or sounds.

¹⁴ The final sound or sounds.

¹⁵ An open syllable is one ending with a vowel; it is also called a free syllable. A closed syllable, on the other hand, is one ending with a non-vowel.

Thus, the reason why regressive assimilation is more common than progressive is because it usually occurs in the coda of a syllable, which is weaker, as we have seen above. Phonological evidence indicates that syllable-initial position is universally stronger than syllable-final position.¹⁶ Moreover, assimilation in the place of articulation and in voicing is only found regressively.¹⁷

Some examples of regressive assimilation in English are:

1. the alveolar fricative sound [z] of "is" and "does" is pronounced further back as alveo-palatal [ʃ] before [ʃ]:
 " is she" [iʃ ʃi].
 " does she" [duʃ ʃi].
2. vowels are nasalized before nasals as in the word / pen /
 → [pɛ̃n].
3. nasals are assimilated, e.g. the alveolar / n / in the prefixes / con- / and / in-/. This sound often becomes the labial / m / before the labials [p, b, f] as in / comfort /, compel / and / combine /¹⁸.
4. the voiced sound / d / becomes voiceless before the voiceless sound / θ / as in / width / → [wite].

Examples in Arabic are:

1. The most obvious form of regressive assimilation is that the definite article /al-/ assimilates to about half of all Arabic sounds.

¹⁶ Theo Vennemann (1972), 9.

¹⁷ Peter Roach, *English Phonetics and Phonology*, 106.

¹⁸ See C. Sloat, *Introduction to Phonology*. 113.

2. / w / and / y / are assimilated to the / t / of the *ifta^cala* form.
3. Nasals are assimilated, especially / n /.
4. Regressive *imālah* also occurs, as in / *ʿālim* / → [ʿēlim / ʿĒlim].
5. Regressive emphasis may occur, as in / *qirṭās* / → [qirṭās].
6. Regressive vowel harmony may occur, as in / *al-ḥamdu lilLāhi* / → [*al-ḥamdi lil-Lāhi*].
7. The long vowel / ā / may be lengthened in pause or when followed by the glottal stop / ʾ / or a geminated consonant.¹⁹ Some examples are:

ar- raḥmān → *ar- raḥmāñ* ≠ (the most merciful),
qāʾil (saying),
dābbah (animal).

The first three types of regressive assimilation will be discussed below in detail; the remaining types will be given in other chapters, in order to avoid repetition.

2.2.2.1. The definite artical / al- /:

The most commonly used regressive assimilation in Arabic is the sound / l / of the definite article / al- /. It is assimilated to approximately half of the Arabic sounds, in fact thirteen, which are produced in the middle of the mouth between the dental and alveo-palatal sounds. These letters are called *al-ḥurūf ash-shamsiyyah* (the sun letters). They are : t, ṭ, d, ṭh, ḏ, ḏh, s, ṣ, ṣh, z, r, and n. The rest of the Arabic sounds are called

¹⁹ See chapter one and chapter (3. 2. 4.) on lengthening.

al-ḥurūf al-qamariyyah (the moon letters). There is unanimous agreement among the Arabs on the assimilation of / l / to the sun letters ²⁰. Compare these two lists:

a. *al-*

1. *al-ʾab* (the father),
2. *al-bāb* (the door),
3. *al-jadd* (the grandfather),
4. *al-ḥaqq* (the right),
5. *al-xāl* (the uncle),
6. *al-ʿilm* (the knowledge),
7. *al-ḡadd* (tomorrow),
8. *al-fīl* (the elephant),
9. *al-qabr* (the grave),
10. *al-kull* (all),
11. *al-lughah* (the language),
12. *al-māʾ* (the water),
13. *al-walad* (the child),
14. *al-hind* (India), and
15. *al-yawm* (today).

b. *al-* → *ac*₁ ≠ *c*₁

1. * *al-tall* → *at-tall* (the hill),
2. * *al-əāliə* → *aə-əāliə* (the third),
3. * *al-dār* → *ad-dār* (the house),
4. * *al-ǧahab* → *aǧ-ǧahab* (the gold),
5. * *al-raʾs* → *ar-raʾs* (the head),

²⁰ See Makki Ibn Abi Ṭālib, *Kitāb al-kashf ʿan wujūh al-qirāʾāt as-sabʿ*, 1 / 141.

6. * *al-zar^c* → *az-zar^c* (the crops),
7. * *al-sāq* → *as-sāq* (the leg),
8. * *al-šams* → *aš-šams* (the sun),
9. * *al-ṣidq* → *aṣ-ṣidq* (the truth),
10. * *al-ḍaw^ʔ* → *aḍ-ḍaw^ʔ* (the light),
11. * *al-ṭayr* → *aṭ-ṭayr* (the bird),
12. * *al-ḏaby* → *aḏ-ḏaby* (the gazelle), and
13. * *al-nūr* → *an-nūr* (the light).²¹

The question here is what feature or features do the *shamsī* sounds have in common with the sound / l / which the *qamarī* sounds do not ? The *shamsī* sounds have either the same position as that of / l / or one close to it. The sound / l / is articulated in the alveolar position as also are the following sounds: t, d, ṭ, s, ṣ, z, ḍ, n, and r. The remaining *shamsī* sounds are articulated either immediately forward of this position, in the interdental position (θ, ḏ, ḏ̣), or immediately backward in the alveo-palatal position (š). They all share the feature of being coronal.²²

²¹ It is interesting to know that the Latin prefix (*ad-*) has some similarity with the Arabic prefix (*al-*) in some positions. " The (d) of prefix (*ad-*) shows a tendency to assimilate to nearly every following consonant; the tendency seems strongest when the following consonant is similar in position or manner. Thus particularly in vulgar Latin, examples of *ad* + t, r, n, l, s, k, g becoming *att-*, *arr-*, *ann-*, *all-*, *ass-*, *akk-*, *agg-* are common, while the assimilation of *ad-m* to *amm-* is less regular. The Latin prefix (*ab-*) shows no such ready assimilability. (See: J. Hucheson, "Notes on complete consonantal assimilation " *Ohio state University working Papers in Linguistics*, 14 (1973), p. 62).

²² This feature is defined by R. Hartmann... (*Dictionary of Language and Linguistics* , 55): "coronal sounds involve the blade of the tongue being raised , thus dental, alveolar, and palatal sounds are coronal, sounds for

In fact, two of the Arabic alveo-palatal sounds (j, y) are excluded from the shamsī sounds, while their homorganic sound (š) is included, as explained below:

1. The glide (y) is considered a non-coronal sound²³ (- coronal).
2. The three alveo-palatal sounds (j, y, š) are described in Arabic grammar as articulated by raising the center of the tongue toward the alveolar ridge²⁴. As for ordering the three sounds according to their exact place of articulation, most grammarians list the three as being in the same place, as do Sībawayh, Ibn Jinnī, az-Zamakhsharī, and Ibn Yaʿīsh. However, al-Mubarrid specifies the place more definitely: "After k (moving from back sounds to front) is the place where (š) is articulated; then after that the place where (j) is articulated²⁵". Ibn al-Jazarī says something similar: "It has been said that the sound (j) is articulated before the sound (š)... al-Muhdawī said that the sound (š) is articulated immediately after the sound (k)"²⁶, which means before the sound (j).

Ibn al-Jazarī's statement that the sound (j) is articulated farther back than the sound (š) is supported by M. Brame's statement that phonetic (j) derives from semitic (q)".²⁷ Again it

which the blade of the tongue remains in the neutral position... are non-coronals".

²³ See for example: C. Sloat, *Introduction to Phonology*, 91, and R. Hartmann, *Dictionary of Language and Linguistics*, 55.

²⁴ See as examples: *al-Kitāb*, 2 / 404, *Sirr šināʿat al-i-rāb*, 1 / 47, *al-Muqtaḍab*, 1 / 192, *Sharḥ al-mufaṣṣal*, 10 / 124, and *an-Nashr*, 1 / 200.

²⁵ *al-Muqtaḍab*, 1 / 192.

²⁶ *an-Nashr*, 1 / 200.

is supported by J. Cantineau: " The sound (j) in Arabic is the semitic (g) with some differences"²⁸. The approximation of these two sounds may explain why the classical Arabic (j) is pronounced as (g) in some modern dialects such as Egyptian. In addition, many Arabic linguists including al-Khalīl, Ibn Jinnī, al-Khafājī az-Zamakhsharī, Ibn Yaʿīsh, and Ibn al-Jazarī²⁹, although not specifying the place of articulation, by listing / j / before / š /, perhaps indicate the same thing.

The exclusion of (j) from the *shamsi* sounds is to be understood from the above evidence that (j) was not a homorganic sound of (l) nor contiguously adjacent to it:

<u>interdental</u>	<u>alveolar</u>	<u>alveo-palatal</u>	<u>palatal</u>
θ, ð, ð̣	t, d, ð̣	š	j
	s, ṣ, z, ḍ	y	
_____	<u>n . l . r .</u>	_____	_____
contiguous	homorganic	contiguous	non-contiguous

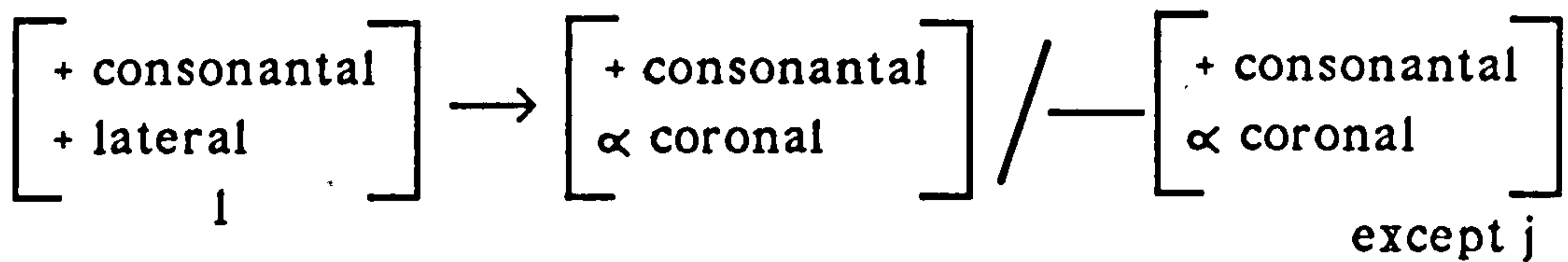
But the (j) sound, nevertheless, has the coronal feature. I have not come across anyone who considers a palatal to be non-coronal. On the other hand, both (g) and Arabic (q) are non-coronal).

3. Below is the form of the above mentioned condition:

²⁷ Ph. D. Thesis, *Arabic phonology*, 18-20.

²⁸ *Durūs fi ʿilm aṣwāt al-ʿarabiyyah*, 88.

²⁹ See (1.1.1.above).



But again this form is not enough. Compare the following sets:

- a. *ʔalṣaqa* (to stick),
- b. * *ʔal-ṣaqah* → *ʔaṣ-ṣaqah* (deafness),
- a. *ʔaltagh* (having a speech defect),
- b. * *ʔal-taghfīl* → *ʔat-taghfīl* (stultification),
- a. *ʔalθama* (make someone cover the face),
- b. * *ʔal-θarā* → *ʔaθ-θarā* (the moist earth),
- a. *ʔalḡaʕa* (have someone hurt),
- b. * *ʔal-ḡahab* → *ʔaḡ-ḡahab* (the gold),
- a. *ʔalzama* (to make something obligatory to someone),
- b. * *ʔal-zamān* → *ʔaz-zamān* (the time),
- a. *ʔalsinah* (tongues),
- b. * *ʔal-sinah* → *ʔas-sinah* (the nap),
- a. *ʔalṭafu* (more kind),
- b. * *ʔal-ṭafal* → *ʔaṭ-ṭafal* (the rain).

In the first example in each case, the sound (l) is followed by a *shamsi* sound; however, it does not assimilate to these sounds. This difference may be interpreted as follows:

1. / l / in the first examples is a part of the word. The roots are (LṢQ, L T ḡ, L θ M, L ḡ ʕ, L Z M, L Ṣ N, and L Ṭ F; respectively.
2. / ʔ / in the first examples is *qaṭʕ*, while it is *waṣl* in the second examples.

3. / l / in the first set is within the word morphologically, while it is in a different word in the second. Therefore, since the phonetic environment does not in itself produce assimilation, a morphological condition (+ definite) should be added to (ʔal) in the previous form. This may be stated as follows:

$$\left[\begin{array}{l} + \text{consonantal} \\ + \text{lateral} \\ l \text{ [+ def.]} \end{array} \right] \rightarrow \left[\begin{array}{l} + \text{consonantal} \\ \propto \text{coronal} \end{array} \right] / - \left[\begin{array}{l} + \text{consonantal} \\ \propto \text{coronal} \end{array} \right] \text{ except } j$$

4. Being coronal, the sound / j / tends to function as a *shamsī* sound in some modern dialects, including some Iraqi dialects. They have ʔaj-jaysh for ʔal-jaysh (the army).³⁰ On the other hand, in the modern *Fuṣḥā* and most Arab dialects, the sound / j / functions as classical / j / and not as a *shamsī jīm*, as A. A. an-Naṣṣir claims.³¹
5. The Arabic grammarians usually include / l / itself as one of the letters to which the / l / of the definite article assimilates. This is correct according to their definition of *idghām*; however, it is a gemination, and not an assimilation, to modern linguists.

6. / ʔa m - /:

The sound / m / is used in some parts of the south of the Arabian Peninsula in place of the / l / of the definite article ʔal- → ʔam-. This phenomenon is still heard in the south of

³⁰ See E. Odisho, "the sun or moon status of Arabic 'j'. A Descriptive view". Baghdad. *Majallat ʔAdab al-Mustanṣiriyyah*, 4 (1979), 13-22.

³¹ *Sibawayh the Phonologist*., Ph.D. (University of York (1985), 125.

Saudi Arabia, and probably in Yemen. It is held by some that it was a feature of the dialect of *Ḥimyar*³²; others associate it with *Ṭayʾ*³³, *Azd* and *Huḏayl*³⁴.

The sound / m / has non- coronal features, unlike / l /. The question arises here as to whether the sound / m / functions as a *shamsī* sound with *shamsī* sounds, and a *qamari* sound with *qamari* sounds in the same way as / l /. The following reported examples give an indication:

a. *qamari*:

- ʾal-birr* / *ʾam-birr* (dutiful),
- ʾal-jazāʾ* / *ʾam-jazāʾ* (requital),
- ʾal-ʿubāb* / *ʾam-ʿubāb* (floods),
- ʾal-kiʿāb* / *ʾam-kiʿāb* (nodes), and
- ʾal-qamʿ* / *ʾam-qamʿ* (funnel).

b. *shamsī*:

- ʾaṣ-ṣiyām* / *ʾam-ṣiyām* (fasting),
- ʾas-safar* / *ʾam-safar* (traveling),
- ʾas-sayf* / *ʾam-sayf* (sword),
- ʾas-sahm* / *ʾam-sahm* (arrow),
- ʾas-salamah* / *ʾam-salamah* (a kind of tree), and
- ʾan-naṭʿ* / *ʾam-naṭʿ* (leather).

In fact, we do not have sufficient examples to cover all

³² See Ibn Hishām, *Sharḥ qatr an-nadā*, 114.

³³ Sallūm, *Dirāsāt al-lahajāt al-ʿarabiyyah al-qadimah*, 84.

³⁴ Y. al-Suwār, *Aḏar ʾikhtilāf al-lahajāt al-ʿarabiyyah fi an-naḥw* M.A. Thesis, 244.

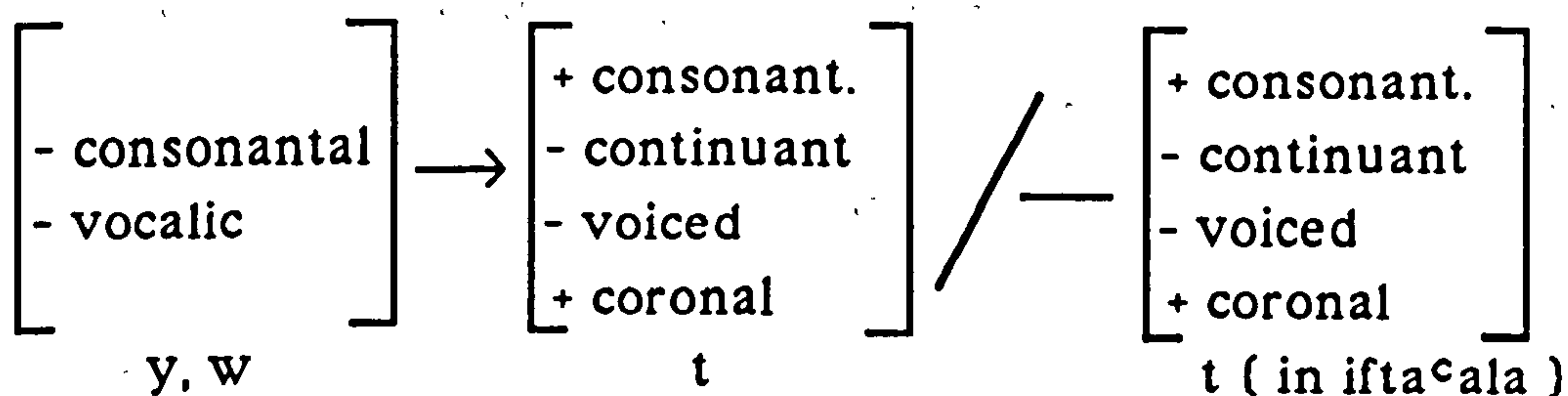
sounds; however those provided are sufficient to enable us to reach some conclusions. There appears to be no assimilation of the sound / m /, whether to *qamarī* or *shamsī* sounds. On the other hand, Ibn Hishām says that " The definite article / ʾam / is used only with moon sounds" and he adds that " May be this is only used in some of the tribes of ʿay and not all of them "35. His statement is not correct, as our list shows.

2.2.2.2. W / Y → / t / in *iftaʿala*:

We have seen that when the first radical is one of the *iṭbāq* sounds, the / t / of *iftaʿala* is pronounced as the emphatic sound / ṭ /, and when the first radical in this form is the voiced / d /, / ḏ /, or / z /, it is changed to / d /, its voiced counterpart, by progressive assimilation.

On the other hand, when the first radical in this form is a glide / w or y / regressive rather than progressive assimilation occurs.

When a glide occurs immediately before the / t / of the *iftaʿala* form, it is changed into a sound identical with the following one, which is then geminated. A form for this type of regressive assimilation is :



35 *Mughni al-labib*, 1 / 48.

Some examples are:

<u>Root</u>	<u>translation</u>	<u>(v) in deep structure</u>	<u>(v) in surface structure</u>
WṢL	(to arrive)	* ʔiwtaṣala	ʔittaṣala
WQY	(to protect)	* ʔiwtaqaya	ʔittaqā
YSR	(to be easy)	ʔitasara	ʔittasara
YBS	(to be dry)	ʔitabasa	ʔittabasa

The qualification that this assimilation takes place in the *ifta^cala* form is important, since it is determined not only by phonetic but also by morphological considerations. Thus, certain other similar possibilities are excluded, e.g:

WTR (to be single)	ʔawtara	* ʔattara
YTM (to lose parents)	ʔaytama	* ʔattama

In fact, there are some words reported to assimilate / w / to / t / in forms other than the *ifta^cala* ³⁶:

ʔawlaja (to insert)	ʔatlaja
ʔawkaʔa (to lean)	ʔatkaʔa

Some remarks have to be made here:

1. Regressive assimilation in this environment is not limited to glides only, but it also applies to the voiceless fricative interdental sound / ɸ / in one of its two optional ways of assimilation. The other way is a progressive assimilation. Both may occur in the *ifta^cala* form as free variations of the sound / t / and / ɸ / pronounced contiguously:

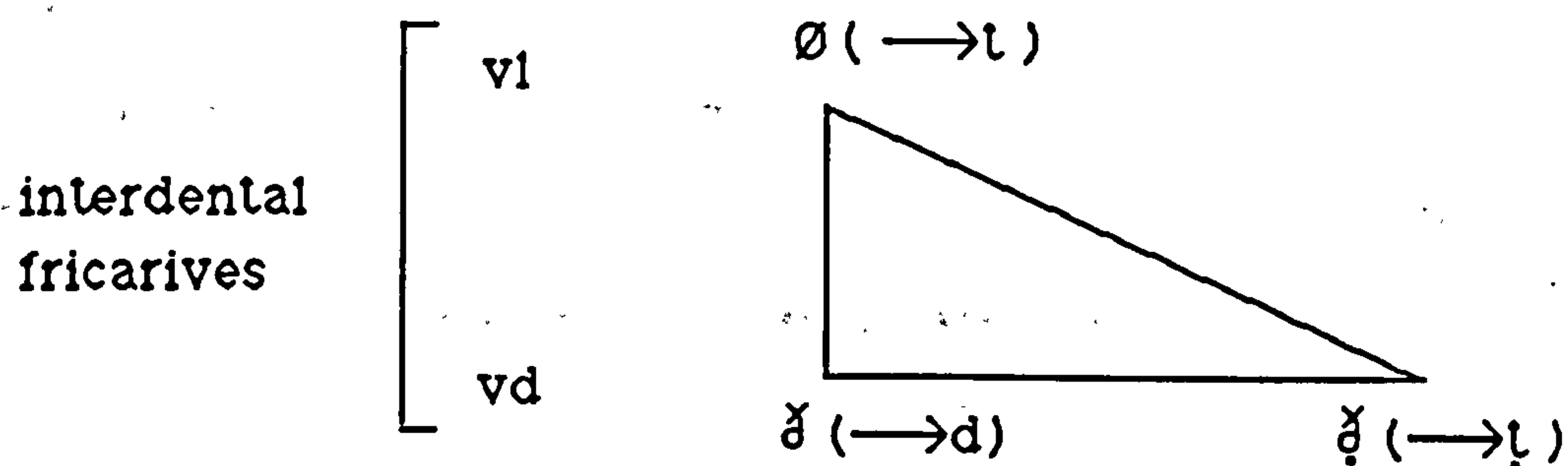
a. ɸ → t / ____ t (+ *ifta^cala*)

³⁶ *al-Munṣif*, 1 / 225.

b. $t (+ifta^c ala) \longrightarrow \emptyset / \emptyset \text{ — }$

$\emptyset RD(\text{to crumble}) \text{ } \text{ʔ}i\emptyset tarada \longrightarrow \text{ʔ}i\emptyset\emptyset arada / \text{ʔ}ittarada.$

The triangular interdental fricative sounds in Arabic behave quite differently from one another as first radical in the *ifta^cala* form; this is phonetically and phonologically not difficult to explain:



The general form for these combinations is:

$t (+ifta^c ala) \longrightarrow \alpha \text{ emphatic} / \text{ — } \alpha \text{ emphatic}$
 $B \text{ voiced} / \text{ — } B \text{ voiced}$

2. The glide / w / occurs much more commonly than / y / in Arabic as a first radical.
3. The Arabic grammarians give one further condition for / w / and / y / changing to / t /, namely that they occur as original radicals and not as the result of the glottal stop changing to a glide / ʔ \longrightarrow y / w /. Otherwise, they do not change before the / t / of *ifta^cala*. Here are some examples:

ʔamānah (reliability) *ʔiʔtumina* *ʔūtumina* **ʔuttumina*
ʔalifa (to be familiar) *ʔiʔtilāf* *ʔītilāf* **ʔittilāf*³⁷

³⁷ See for example : an-Najjār, *Ḍiyāʾ as-sālik*, 4 / 292.

However, phonologically there is no need for this condition, since what we have here is not glide sounds but their corresponding long vowels / ū and ī /. The Arabic linguists seem to speak about the two different things as if they are the same, because they are written in the same way.

Furthermore, this condition has some exceptions; for example, the word / ʔitazara / is sometimes pronounced / ʔittazara / (to wear a loincloth).

4. The form in this type of assimilation is used by most Arabs. Some Arab dialects, however, do not have any such type of assimilation³⁸; instead they assimilate / w / and / y / to the vowels that precede them, so that they are pronounced as the corresponding long vowels in progressive assimilation.

Here are some examples:

a.	wazana (to weight)	yātazinu
	yabisa (to dry)	yātabisu
b.	wazana	mūtazin
	yabisa	mūtabis
c.	wazana	ʔitazana
	yabisa	ʔitabasa

³⁸ Ibn Jinni designates the most common form (the changing of the glide to t) as belonging to *Hijāzi* dialect in his book *Sirr ʕināʔat al- iʕrāb*, 1 / 148 , and the least common form (the changing of the glide to a long vowel) as belonging to other *Hijāzi* dialects, in his book *al-Munʕif*, 1 / 228. It is to be understood that the majority of *Hijāzis* speak the first, while only some of them (probably not too many) speak the second. This is supported by K. al-Azhari in *Sharḥ at-taʕriḥ ʕalā at-tawḍiḥ* 2 / 391.

2.2.2.3. Nasal Assimilation:

Nasals are speech sounds pronounced with lowering of the velum so that the air is allowed to escape through the nasal cavity. The air with nasal consonants escapes only through the nasal cavity, while it escapes through both nose and mouth cavities with nasal vowels. "They (nasals) are produced exactly like stops, except that the velic is open".³⁹

Many languages, including Arabic and English have only nasal consonants, while some others, including French, have both nasal consonants and nasal vowels, e. g. "French 'bon' [bɔ̃] (good), and vin [vɛ̃] (wine)".⁴⁰

In Arabic, there are two nasal consonants: the bilabial nasal / m / and the apico-alveolar nasal / n /. Indeed, Arabic linguists list two different / n 's /: the apico-alveolar / n / in which the tongue has strong involvement, and the *khayshūmiyyah* / n / which is almost pronounced entirely from the nose with the tongue having less involvement.

Our discussion in this chapter will be limited to / n / sound for the following reasons:

- a. it occurs more frequently because it is used as a phoneme as well as *tanwin* (a definiteness marker).
- b. it assimilates regressively and in *qiyāsī* manner to most Arabic sounds.
- c. it is *ṣaghannu min al-mīm* (it has more nasality than / m /).
- d. it is one of the best examples of regressive assimilation in Arabic.

³⁹ C. Hockett, *A course in Modern Linguistics*, 73.

⁴⁰ R. Hartmann, *Dictionary of Language and Linguistics*, 148.

/ n /:

An-nūn as-sākinah (the vowelless / n /) is also called by the Arabs *an-nūn al-khafīfah* or *al-khafiyyah*. It is followed immediately by a consonant and not a vowel. It is considered as a secondary approved sound (as we have seen earlier). This sound has been discussed in depth by the Arabs especially in the science of *tajwīd*⁴¹.

The sound / n / assimilates completely or partially to 22 of 28 consonants in Arabic when they follow it, either within a word or across word and morpheme boundaries. It is pronounced in its original position before six back sounds. The two status of the sound / n / are:

2.2.2.3.1.1. *Idghām* (assimilation):

a. complete regressive assimilation:

1. (n + l, r:)

Idghām bi ghayr ghunnah (complete assimilation without retaining nasality in the pronunciation). When / n / precedes its homorganic liquid sounds / l / and / r /, it changes completely to / l / or / r / respectively. / *min rabbikum* / is pronounced as [*mirrabbikum*] (from your lord), / *ghafūrun raḥīm* / as [*ghafūrurraḥīm*] ((Allah) is oft-forgiving, most merciful), / *min ladunnā* / as [*milladunnā*] (from us), and / *fasalāmun laka* / as [*fasalāmullaka*] (and peace be unto you).

⁴¹ For a chapter on this topic see *an-Nashr*, 2 / 222-228.

$$\left[\begin{array}{l} + \text{ consonantal} \\ + \text{ nasal} \\ + \text{ coronal} \end{array} \right] \xrightarrow{\quad} [\propto \text{ liquid}] / [\propto \text{ liquid}]$$

n

The liquids / l / and / r / are not the same in this case according to some *Qurʾānic* Readers. The sound / n / when assimilated to / r / is not written as / r / but remains as / n /. When, however, / n / is assimilated to / l /, it is also sometimes written as / l /. This occurs in certain circumstances where ʾan (that), and ʾin (if) are combined with the negative or prohibitive particles / lā /, / lan /, and / lam /, and the conditional particle / law /. The *Qurʾān* has a considerable number of such sequences in its text. In some cases, / n / remains as it is, in others it is written as / l /. Here are some examples:

1. Separated:

- a. ʾan + lā: / ʾan lā yaqūlū / (that they would not ascribe to Allah) [Q. 7:163].
- b. ʾin + lam: / fa ʾin lam tafʿalū / (if you do not do) [Q:2:24].

2. Combined:

- a. ʾan + lā: / ʾallā taṭṭaw / (you may not transgress (due) balance). [Q: 55:8].
- b. ʾin + lam: / fa ʾillam yastajibū lakum / (if they answer not you). [Q. 11: 14].

Comparing the examples in (1) with those in (2), I find it difficult to see the phonetic reason behind the differences in the way of writing / l + n / as geminated / ll / in some cases and

not in others. I mention the way of writing here, even though it does not fall within the scope of this thesis, because some scholars of *tajwīd*, who retain nasality in assimilating / n / to / l / have decided, and advised readers, not to retain nasality if / n / is not separated from / l / in script ⁴². The assimilating of / n / to / l / itself in such cases is sometimes not practiced by non-trained readers, especially when / n / is written in the script.

Moreover, *tajwīd* scholars themselves are not in agreement on this point, some of them retain nasality when assimilating / n / to / l /, but the majority do not ⁴³. Those who do retain nasality here do not always do so. Retaining nasality here is *laḥn* (incorrect) to Makkī Ibn Abī Ṭālib ⁴⁴, but the evidence is against this attitude. Here is an example of retained nasality as cited by Ibn al- Jazarī ⁴⁵:

fa ʔin lam tafʿalū → *fa ʔillam tafʿalū* → *fa ʔiḥḥam tafʿalū*
ʔan lā yaqulū → *ʔallā yaqulū* → *ʔaḥḥā yaqulū*.

The following table shows us how often / n / followed by / l / occurs in the *Qurʾān*:

⁴² *an-Nashr*, 2 / 28.

⁴³ In fact, according to many scholars, the *qurrāʾ* all agree on the reading without retaining nasality with both / l / and / r / (see *at-Taysir*, 45, *al-Kashf ʿan wujūh al-qirāʾāt as-sabʿ*, 1 / 162, and *Ibrāz al-maʿāni min ḥirz al-amāni*, 201).

⁴⁴ *al-Kashf ʿan wujūh al-qirāʾāt as-sabʿ*, 1 / 162.

⁴⁵ *an-Nashr*, 2 / 28.

the occurrence of / n / + / l / in the *Qurʾān*

Items	Separated	Combined	Total
ʾin + lam	29	1	30
ʾan + lam	3	0	3
ʾin + lā	0	3	3
ʾan + lā	11	6	17
ʾan + lan	11	2	13
ʾan + law	3	1	4
man + lā	6	0	6
man + lam	10	0	10
man + law	1	0	1
kaʾan + lam	8	0	8
others	43	0	43
total	130	13	143

It is interesting to see that the *Qurʾānic* text in our hands nowadays is just as it was described by ad-Dānī ⁴⁶, and Ibn al-Jazari.⁴⁷

This type of assimilation (complete regressive assimilation) is found only across word boundaries as in the above mentioned examples. Indeed, there are no such combinations of n + l or n + r in one word. To quote Sībawayh' statement: " We do not know of the occurrence of vowelless / n / before / r / or / l / in the same word; it would be difficult to pronounce it without assimilation, and the result would be confused with similar geminated words when pronounced with assimilation "⁴⁸.

⁴⁶ *al-Muqni' fi rasm maṣāḥif al-ʾamṣār*, 73-75.

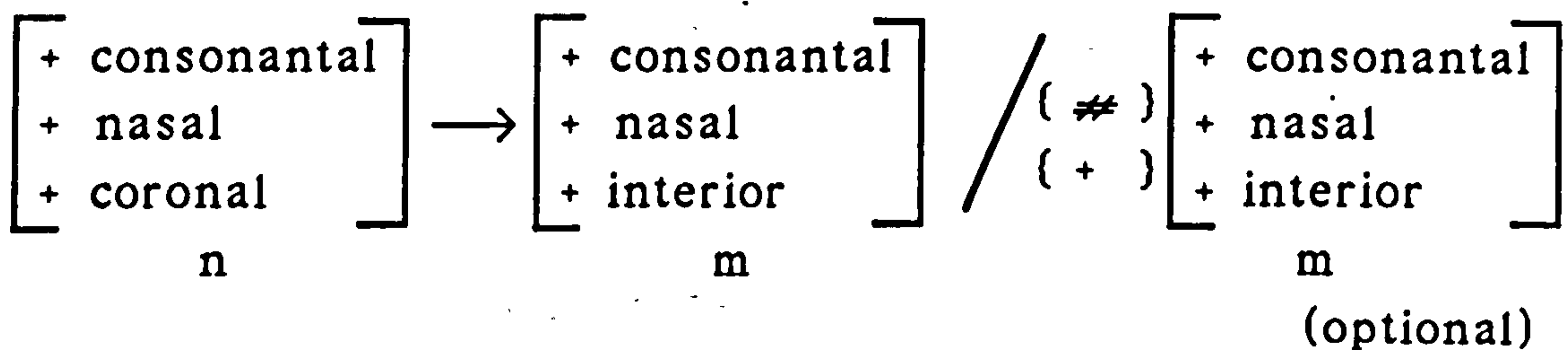
⁴⁷ *an-Nashr*, 2 / 28-29.

⁴⁸ *al-Kitāb* , 2 / 416 .

$n \neq l$
 $* \neq nl \neq$
 $n \neq r$
 $* \neq nr \neq$

2. [n + m]:

The sound / n / is replaced by / m / when it occurs at the end of a word and the following word begins with / m /; this is complete regressive assimilation:⁴⁹



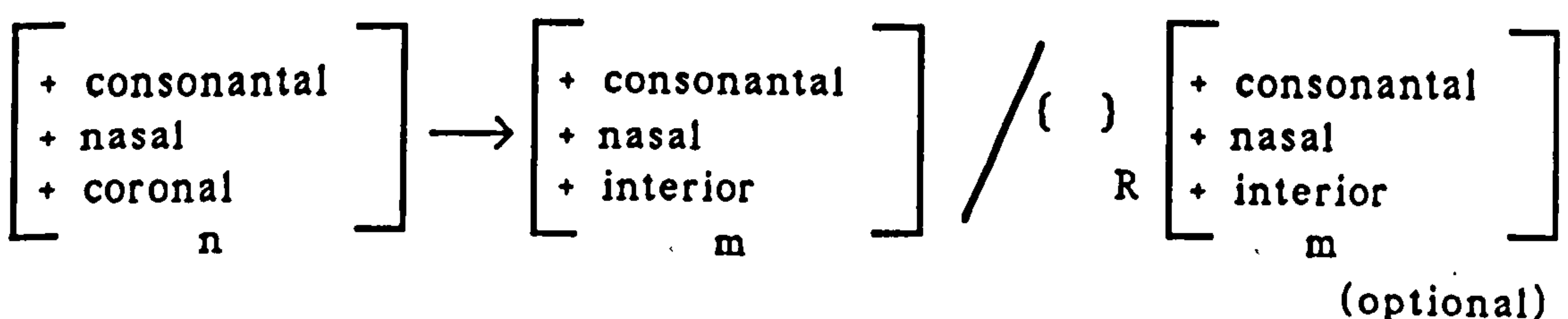
/ min mā razaqakum / → [mimmā razaqakum] (from what Allah has bestowed on you),

/ qawlun ma^crūfun / → [qawlum ma^crūfun] (a just statement).

Within word boundaries, such assimilation is rare, and it permissible only when no semantic confusion is possible:

ʾinmaḥā / ʾimmaḥā (to be effaced). It is not permissible to assimilate in a word such as / ghunm / (benefit) → *ghumm, since semantic confusion would be caused thereby. In the *Qurʾān*, there is no such combination within word

⁴⁹ An alternative form may be:



boundaries ⁵⁰.

b. Partial Assimilation:

1. n + y, w : Leading to gemination:

Before the glides / y or w /, again across word boundaries, / n / shifts so as to be pronounced as / y or w / respectively, but with nasality retained, as partial regressive assimilation ⁵¹.

Some examples are:

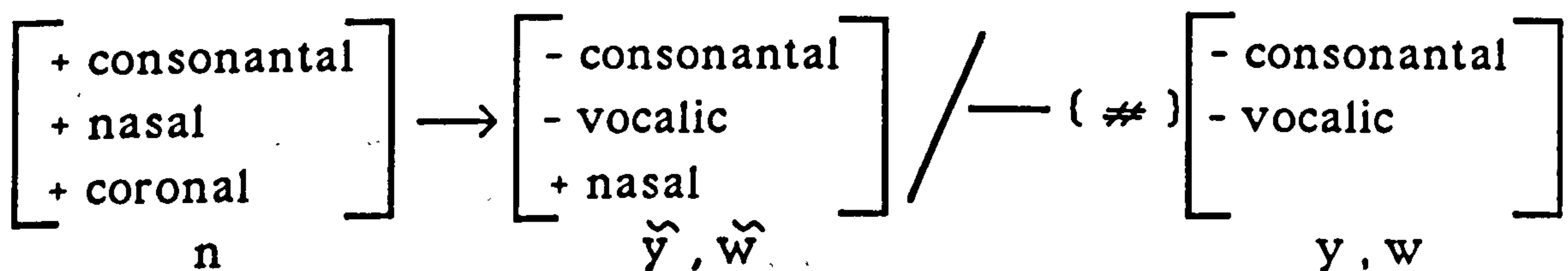
/ man yaqūlu / → [maỹỹqūlu] (who says),

/ wujūhun yawmaʾiđin / → [wujūhuỹỹawmaʾiđin]
(faces that day),

/ min wāq / → [miw̃w̃āq] (any defender),

/ wa zaytūnan wa nakhlan / → [wa zaytūna w̃w̃a
nakhlan] (and olives and dates).

Again / n / cannot be assimilated to these two sounds within the same word, for semantic reasons. Thus, for example there is no assimilation in: / šinwān / (two of a pair), / qinwān / (bunches of dates), / dunyā / (this life), and / bunyān / (buildings). This may be represented as follows:



⁵⁰ an-Nashr, 2 / 25.

⁵¹ Khalaf (a Qurʾānic reader) assimilated completely without nasality retained. (see ad-Dāni, at-Taysir fi al-qirāʾat as-sabʿ, 45.

2. *al-Iqlāb*⁵² [n + b] (inversion):

The second type of partial assimilation of final / -n / is what the *qurrā'* call *Iqlāb*. Before the bilabial / b /, / n / is pronounced as a bilabial / m /.

/ ʾanbā' → ʾambā' / (news or stories),

/ min baʿd → mim baʿd / (after),

/ samīʿun baṣīr → samīʿum baṣīr / ((Allah) who hears and sees (all things)).

n → + bilabial / _____ + bilabial (b).

This type of assimilation differs from the two previous types in that it occurs within word boundaries as well as across them⁵³.

In English the labial or labio-dental sound / f / has the same effect, while in Arabic it does not. The English prefix (con-) becomes (com-) before both bilabials / b, p⁵⁴ / and the labio-dental / f /⁵⁵:

* / conbine → combine /,

* / conpel → compel /,

* / confort → comfort /.⁵⁶

/ n / becomes a bilabial before a bilabial stop, English resembles Arabic in this type of assimilation; the phrase " ten

⁵² See (3. *ikhfā'*) below.

⁵³ I have not come across any Arabic word with the combination of / m + b / in the deep structure; I would therefore, assume that this is the reason why assimilation is permitted within word boundaries with / n + b / as apposed to / n + y, w, / and n + m /, since no semantic confusion can arise.

⁵⁴ Of course, there is no voiceless bilabial sound / p / in Arabic.

⁵⁵ / n / before / f / will be discussed in the following paragraph.

⁵⁶ See C. Sloat, *Introduction to Phonology*, 113.

percent " tends to be pronounced as [tem percent].

3. *Ikhfāʾ* (hiding):

The majority of obstruant sounds affect the manner and position of articulation of the apico-alveolar nasal / n /. These sounds are:

1. labio-dental : f
2. inter-dental : θ , ð , and ʒ .
3. alveolar : t , d , ʈ , s , ʂ , z , and ɖ .
4. alveo-palatal : ʃ
5. palatal : j
6. velar : k
7. uvular : q

The position of the apico-alveolar / n / moves forward when it occurs contiguously before the front sounds among these, likewise it moves backwards before the back sounds. On the other hand, as we have seen in *iqḷāb* in the previous paragraph, the sound / n / becomes bilabial when it occurs before / b /, changing position only, without changing the manner of articulation. Indeed, *iqḷāb* is a part of *ikhfāʾ*, since the homorganic of / b / is / m /: there is in fact no need to consider *iqḷāb* as a separate category, and / b / may be included among the sounds of *ikhfāʾ*. To recapitulate we may say that the sounds of *ikhfāʾ* begin with the extreme front obstruants and proceed backwards to the uvular; the only excluded obstruant sounds are the *ḥurūf al-ḥalq* (the six back sounds namely : ʔ , h , ʕ , ḫ , ʁ , and x .

/ n / with its homorganic sounds , namely the alveolars t ,

ṭ, d, s, ṣ, z, and ḍ, does not change its position, but is further nasalized by lowering the velic, and the homorganic sounds take on some of its features. A form for *ikhfā'* may be represented as:

$$\left[\begin{array}{l} + \text{consonantal} \\ + \text{nasal} \\ + \text{coronal} \end{array} \right] \xrightarrow{n} [\alpha \text{ position}] / \text{---} [\alpha \text{ position}] \left[\begin{array}{l} + \text{consonantal} \\ + \text{obstruant} \\ - \text{ḥalqī} \end{array} \right]$$

Some examples are:

f : / al-ʔanfāl / → [al-ʔanṯāl] (the spoils of war).

θ : / manθūran / → [manṯūran] (scattered).

ḏ : / munḏir / → [munṯir] (warner).

ḍ : / ʔinḍurū / → [ʔinṯurū] (see (pl)).

t : / ʔantum / → [ʔanṯum] (you (pl)).

ṭ : / yanṭiqūn / → [yanṯiqūn] (they speak).

d : / ʔandādan / → [ʔanṯdādan] (equals)

s : / ʔansānihu / → [ʔanṯsānihu] (makes me forget it).

ṣ : / yanṣurukum / → [yanṯṣurukum] ((he) help you (pl)).

z : / ʔanzala / → [ʔanṯzala] (he sent down).

ḍ : / manḍūd / → [manṯḍūd] (arranged in layer).

š : / manšūrā / → [manṯšūrā] (spread).

j : / ʔanjaynākum / → [ʔanṯjaynākum] (we saved you (pl)).

k : / minkum / → [miṯkum] (from you (pl)).

q : / yanqalibūn / → [yanṯqalibūn] (they (pl) turn over).

The purity of the / n / depends on how far the following sound is from / n / in its place of articulation. It becomes less pure with homorganic and close sounds.⁵⁷

4. Iḥhār (dissimilation):

The sound / n / assimilates to most Arabic consonants completely or partially. The only consonants that / n / is pronounced purely with are *ḥalqī* (guttural) consonants: glottal ʔ, h, pharyngeal ḥ,^c , uvular x, ɣ, the six sounds furthest back. In such a phonetic environment, the sound / n / is not assimilated either within a word or across word boundaries as in the following examples:

- a. / manʔā / (distant place),
/ man ʔanta? / (who are you ?),
- b. / manhaj / (curriculum),
/ man huwa? / (who is he ?),
- c. / yanḥitūn / (they hew),
/ ʿalīmun ḥakīm / ((Allah) all-knowing all-wise),
- d. / ʔanʿamta / (thou (Allah) hast bestowed),
/ man ʿindaka? / (who is with you ?),
- e. / al-munxaniqah / (that which hath been killed by strangling),
/ man xaraja? / (who went out ?),
- f. / fa sa yunḡiḡūna / (then will they wag their heads),
/ min ɣayrikum / (from other than you (pl)).

Some *qurrāʔ*, including Abū Jaʿfar, assimilate / n / homorganically to the nearest *ḥalqī* sounds [x, and ɣ] as *ikhfāʔ*, but the majority of *qurrāʔ* do not ⁵⁸. Sibawayh also mentions this kind of assimilation, giving *munkhal* (sieve) as an

⁵⁷ *an-Nashr*, 2 / 27.

⁵⁸ See for example , *an-Nashr* , 2 / 22-23.

example ⁵⁹. The pronunciation of the sound / n / is purest with the farthest ḥalqī sounds / ʔ, h /, less so with the middle sounds / ḥ, ʕ /, and least so with the nearest sounds / x, ɣ /.

To sum up, the sound / n /:

1. loses its nasality before liquids / l, r /,
2. loses its place of articulation before / y, w / and *ikhfāʔ* sounds,
3. loses both its nasality and place of articulation before / m /,
4. retains nasality and place of articulation before ḥalqī sounds.

This scheme may be represented as:

$n \longrightarrow + \text{liquid} / \text{---} + \text{liquid}$.

$n \longrightarrow + \text{bilabial} / \text{---} + \text{bilabial}$.

$n \longrightarrow \propto \text{place of articulation} / \text{---} \propto \text{place of articulation} (- \text{ḥalqī})$.

$n \longrightarrow \text{remains purely} / \text{---} + \text{ḥalqī}$.

Nasal assimilation may occur within word boundaries, as well as across word boundaries except in *idghām* (assimilating / n / to sonorant sounds) as in the table below:

assimilation environment	Idghām	Iqlāb	Ikhfāʔ	Iḥhār
within word boundary	-	+	+	-
across word boundary	+	+	+	-

+ assimilated

- not assimilated

⁵⁹ *al-Kitāb*, 2 / 423.

The assimilation of the homorganic / n, and l / is quite similar: a comparison gives the following tables:

Comparison between / n / and / l / ⁶⁰ + obstruant

	b	f	Ø	ð	ḏ	t	ṭ	d	s	ṣ	z	ḏ	š	j	k	q	ḡ	x	ḥ	c	h	ʔ
l	-	-	+	+	+	+	+	+	+	+	+	+	+	-	-	-	-	-	-	-	-	-
n	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	-	-	-	-	-

+ assimilated

- not assimilated

comparison between / l / and / n / + sonorant

<div> <div>sounds</div> <div>→</div> </div> <div> <div>l, n</div> <div>↓</div> </div>	m	n	r	l	w	y
(l) complete	-	+	+	0	-	-
(n) comp. or partial	+	0	+	+	+	+

+ assimilated

- not assimilated

The assimilation of the sound / n / to following *non-ḥalqī* sounds, whether completely or partially, is considered optional, that is to say, a speaker or a reader may ignore it if he wishes; on the other hand, it is compulsory in the reciting of the *Qurʾān* according to many scholars of *tajwīd*.

⁶⁰ The assimilation is complete for / l /, while for / n / it may be either partial or complete.

2.2.3. Coalescent Assimilation:

We have seen earlier that if the first sound in such a combination influences the second, assimilation is called progressive. If the opposite happens, the assimilation is called regressive. In a third type of assimilation, the influence operates in both directions. This is called "coalescent" or "reciprocal" assimilation.

In fact, this term is defined variously by different linguists:

1. " A sequence of two sounds coalesces and gives place to a single new sound different from either of the original sounds".⁶¹ This definition may be represented as: $C_1 C_2 \longrightarrow C_3$ The example given to illustrate it is: / don't / [dount] and / you / [yū] \longrightarrow [dountu]. This really shows a normal progressive assimilation, which may be represented as: $C_1 C_2 \longrightarrow C_1 C_3$. This definition is supported by C. M. Wise: "Both sounds disappear as such and a third sound emerges in their place".⁶²

2. J. Hutcheson gives as a form for coalescent assimilation:

$C_1 C_2 \longrightarrow C_3 C_3$.⁶³ The two sounds disappear and a geminated sound is put into their place. An Arabic example to illustrate this is:

/ ʔiḡtalam / \longrightarrow [ʔiṭṭalama] (did unjustly).

⁶¹ D. Jones, *An outline of English Phonetics*, 218.

⁶² *Applied Phonetics*, 154.

⁶³ See his Ph. D. Thesis, *A Natural History of Complete Consonantal Assimilation*, The Ohio State University (1973), and see also his article " Notes on Complete Consonantal Assimilation" *The Ohio State University Working Papers in Linguistics* 14 (1973), 58- 65.

3. R. Hartmann and F. Stork give as an example of coalescent assimilation: / seven / \longrightarrow [sebm]⁶⁴, in which both sounds disappear and are replaced by others. It may be represented as: $C_1 C_2 \longrightarrow C_3 C_4$.
4. I prefer a definition which combines the latter two definitions "where both sounds, the assimilated and the conditioning, affect each other to result either in one geminated sound, or more rarely, in two sounds different from the originals.

Some examples of Arabic coalescent assimilation:

1. Vowelless / n / in *idghām bi ghunnah* assimilating / n / to the following sound with nasalization (see above):
 / ʔan yaʔtī / \longrightarrow [ʔaỹỹaʔtī] (to come).
 / min wāq / \longrightarrow [miw̃w̃āq] (any protector).
2. *Ikhfāʔ*, the status of the vowelless / n / when followed by fifteen sounds (see above):
 / ʔin kuntum / \longrightarrow [ʔiñk̃untum] (if you were).

⁶⁴ *Dictionary of Language and Linguistics*, 21.

2.3. Complete vs. Partial assimilation

Complete assimilation is used to describe the type of assimilation in which the assimilated sounds become totally identical in all features with the conditioning sounds. It takes one of the following forms:

1. $C_1 C_2 \longrightarrow C_1 C_1$,
2. $C_1 C_2 \longrightarrow C_2 C_2$, or
3. $C_1 C_2 \longrightarrow C_3 C_3$.

Partial assimilation on the other hand, indicates that a sound becomes similar but not identical in all features with a neighboring sound. It takes one of the following forms:

1. $C_1 C_2 \longrightarrow C_1 C_3$,
2. $C_1 C_2 \longrightarrow C_2 C_3$, or
3. $C_1 C_2 \longrightarrow C_3 C_4$.

Complete assimilation is sometimes called total assimilation or equalization, while partial assimilation is sometimes called accommodation.

The Arabs usually differentiate between complete and partial assimilation in the following manner. If the two sounds become identical so as to be geminated, then the assimilation is complete, whereas if there is no possibility of gemination, the assimilation is partial. However, the third form of the complete assimilation above is not included by many of them, so they do not consider *al-idghām bi ghunnah* (assimilating / n/ to / y, w /) as complete assimilation.¹ This is because the sound / n / does not assimilate completely to these sounds, as its

¹ See for ex. *an-Nashr*, 2 / 27 .

nasality remains:

man ya^cmal → *maỹ ỹa^cmal* (whoever works).

min wāq → *miw̃ w̃āq* (any protection).

Likewise when a strong sound assimilates to a weaker one a partial assimilation, occurs with one or more features of the assimilated sound remaining, as in the following examples :

baṣaṭṭa → *baṣatta* (you stretch).

ʔaḥaṭṭu → *ʔaḥattu* ² (I comprehend).

However, assimilation in these examples is complete according to the third possible form of the complete assimilation ($C_1 C_2 \rightarrow C_3 C_3$).

Indeed, most of the Arabic linguists do not call partial assimilation *idghām* because *idghām* to them is complete assimilation, leading to gemination.

The most frequent example of complete assimilation is the definite article / *al* -/ with *shamsī* sounds.

Im ālah and / *t* / of *ifta^cala* are some examples of partial assimilation.

The Arabic linguists call complete assimilation *al-idghām al-kāmil* and they call partial assimilation *al-idghām an-nāqīṣ*. Ibn Jinnī gives this division more attention than the other linguists. He calls complete assimilation *al-idghām al-akbar*, and partial assimilation *al-idghām al-aṣghar*³. His terms should not be confused with the normal terms of contiguous and non-contiguous assimilation *al-idghām aṣ-ṣaghīr* and *al-idghām al-kabīr* respectively.

² *an-Nashr*, 1 / 220 .

³ *at-Taṣrif al-mulūki*, 97 , and *al-Khaṣā'iṣ*, 2 / 141 .

Complete assimilation in Arabic is usually compulsory. On the other hand, partial assimilation is usually optional, according to Arabic linguists; it is however obligatory in the reading of the *Qurʾān*, according to some scholars of *tajwīd*.

2. 4. Distant Assimilation:

Concerning the proximity of the assimilated sounds to the conditioning sounds, assimilation is divided into two types. When the two sounds involved are immediately adjacent, assimilation is called contiguous assimilation, or sometimes contact assimilation. On the other hand, when the two sounds involved are separated by one or more other sounds, the assimilation is called non-contiguous assimilation, incontiguous assimilation, dilated assimilation, remote assimilation, or distant assimilation. Distant assimilation is much less frequent than contiguous assimilation. Therefore whenever the word "assimilation" is used without any modification, contiguous assimilation is mostly meant. For this reason, our discussion in this sub-chapter will be limited to distant assimilation.

Distant assimilation has been discussed thoroughly by both Arabic linguists and scholars of *tajwīd*, under different headings, of which the following are the most common:

1. Vowel Harmony:

Vowel harmony is the most common type of distant assimilation. There is no contiguous vowel harmony in Arabic. The separating sounds may be one or more. The word / ʔimraʔ / (a man) with nunation declines:

ʔimruʔun (nominative) as in : *hāǧā mruʔun* (this is a man),

ʔimraʔan (accusative) as in : *raʔaytu mraʔan* (I saw a man),

ʔimriʔin (genitive) as in : *mini mriʔin* (from a man).

Some other examples are:

ʔuqtul "imperative" (kill),

ʔiḍrib "imperative" (hit), and

naḥar (river).¹

2. *Imālah*:

Imālah, which is the raising of (a / ā) to become near (i / ī) in certain circumstances, is considered as a distant assimilation in all its types. This is due to the fact that a / ā cannot be followed or preceded contiguously by / i / or / ī /:

* i + a / ā,

* a / ā + i,

* ī + a / ā,

* a / ā + ī.

However there are some exceptions where *imālah* may occur, in fact, as contiguous assimilation, such as when the low vowels (a / ā) are followed or preceded by the glide / y /. Some examples of *imālah* are:

mafātīḥ → *mafētīḥ* (keys),

al-ʕālamīn → *al-ʕēlamīn* (the worlds),

kayyāl → *kayyēl* (the one who weighs).

Sometimes, more than one phoneme separates (a / ā) from the conditioning sound, as in the second example above, and also in:

yaḍribahā → *yaḍribahē*² (he hits her)³.

¹ For more detail on vowel harmony see 2.6.2.2. below.

² *al-Kitāb*, 2 / 262.

³ For more detail on *imālah*, see 2.6.2.1. below.

3. Emphasis:

Emphasis is a strong feature that affects neighboring sounds both contiguously and non-contiguously. Again the separating sound between the assimilated and the conditioning sounds may be one or more. Some examples are:

1. / ʔaqsat̤u / (more correct). Pronounced before the emphatic sound / t̤ /, the sound / s / may become a partial emphatic / s /, between / s / and / ʃ /, or may become a complete emphatic / ʃ /.
2. / lasallaṭahum / (has given them power over..) The same as the above may be said about / s / here.⁴

4. *al-Idghām al-Kabīr*:

al-Idghām al-kabīr (non-contiguous assimilation), is contrasted with *al-idghām aṣ-ṣaghīr* (contiguous assimilation). The difference between the two types is that in the latter the assimilated sound is *sākin* (unvowelled) while in the former, the assimilated sound is *mutaḥarrik* (vowelled). The short vowel here is dropped before the assimilation process takes place; as a result *al-idghām al-kabīr* and *al-idghām aṣ-ṣaghīr* are phonologically the same.

Arabic grammarians do not discuss this kind of assimilation a great deal; on the other hand, almost all scholars of *tajwīd* have a separate chapter on *al-idghām al-kabīr*.

This type of *idghām* is mostly associated with the reader Abū ʿAmr Ibn al-ʿAlāʾ; he is not however the only reader to favor assimilation in it. Ḥamzah and al-Kisāʾī are reported to

⁴ For more detail on emphatic sounds see 2.6.3.1. below.

have assimilated in this case too. On the other hand, Nāfi^c, Ibn Kathīr, and ʿĀṣim preferred not to assimilate in *al-idghām al-kabīr*. Ibn ʿĀmir sometimes assimilated and other times dissimilated.⁵

al-Idghām aṣ-ṣaghīr occurs in both environments, within and across morpheme and word boundaries, while *al-idghām al-kabīr* occurs across word boundaries, with a few cases where it occurs across morpheme boundaries. These cases are:

a. Pure gemination:

In which the short vowel between the two identical sounds is deleted. These examples are reported:

1. *mā salakakum* (what led you (pl) into (hell-fire)),

mā salakkum : vowel deletion then gemination,

2. *manāsikakum* (your (pl) holy rites),

manāsikkum : vowel deletion then gemination,

3. *lā taʾmanunā* (... not trust us),

lā taʾmannā : vowel deletion then gemination,

4. *makkananī* (...established me),

makkannī : vowel deletion then gemination.

However the *qurrāʾ* do not assimilate in certain other similar situations, for example:

1. *bi shirkikum* (...your partnership),

* *bi shirkkum*,

2. *jibāhuhum* (their foreheads),

* *jibāhhum*.⁶

⁵ Ibn Mujāhid, *Kitāb as-sabʿah fī al-qirāʾat*, 113-125.

⁶ See al-Warrāq al-Mawṣili, *Kitāb al-Muyassar min at-taysir*, 40, Ibn Mujāhid, *Kitāb as-sabʿah fī al-qirāʾat*, 121, Ibn al-Jazari, *an-Nashr*, 1 /

It is difficult to explain why Abū ʿAmr deleted the short vowel and geminated the identical sounds in some cases but not in other similar cases which seem to be phonologically the same. He was possibly simply following the practice of his teachers in such cases. He assimilates when the separating vowel is / a / only.

b. Deletion, assimilation, then gemination:

Abū ʿAmr limits the assimilation of sounds to each other after the deletion of the short vowel to one sound, namely the uvular / q / when pronounced before the second person plural masculine pronoun *kum*. Some *qurrāʾ* also include in this *kunna*, the feminine pronoun, on condition that there is a vowel before the assimilated sound / q /. Some examples are

1. *khalaqakum* ((*Allāh*) created you (pl.)),

khalaqkum : vowel deletion,

khalakkum : assimilation,

khalakkum : gemination.

2. *razaqakum* ((*Allāh*) gave you (pl.)),

razaqkum : vowel deletion,

razakkum : assimilation,

razakkum : gemination.

But if the sound / q / is preceded by *sukūn*, whether with a consonant, a glide, or a long vowel, Abū ʿAmr does not delete the short vowel nor does he assimilate the sounds.

mīthāqakum (your (pl.) covenant),

280, Makki Ibn Abī Ṭalib, *Kitāb at-Taysir fi al-qirāʾāt as-sabʿ*, 20, and as-Suyūṭi, *al-Itqān*, 1 / 95-96.

* *mīthākkum*,

fawqakum (above you (mas. pl.)),

* *fawkkum*,

wa liyuḏīqakum (giving you a taste),

* *wa liyuḏīkkum*.

Neither does he do so if the pronoun following / q / is not plural, e.g.

khalaqaka ((*Allāh*) created you (mas. sg.)),

* *khalakka*.

On the other hand, Abū ʿAmr was in the habit of deleting the final vowel and geminating the two sounds (the final consonant of the first word and the first of the second word) when they were identical and assimilating the first to the second when they were similar. The Arabs call the first case *tamāthul*, where two sounds are identical in both place and manner of articulation; they call the second either *tajānus*, where they are identical in place of articulation but not in manner of articulation, or *taqārub*, where they are merely similar in either place or manner of articulation or in both.⁷ The following examples illustrate this:

la ḡahāba bi samʿihim: mutamāthil (... take away their faculty of hearing),

wa man tāba maʿaka mutajānis (and those who with you turn),

yurīdu ʿawāb mutaḡārib (..desires a reward...).

⁷ See for example *an-Nashr*, 1 / 278.

The *qurrā'* make four conditions for allowing this kind of assimilation:

1. The sound assimilated or geminated should not be already geminated ($C_1 C_1 V C_1 \rightarrow * C_1 C_1 C_1$). This condition is very important, since it protects the syllable structure, which does not allow the occurrence of a cluster of three consonants in one syllable ($* CCC$). *ʔuḥilla lakum* (permitted to you). The first / l / is already geminated. Therefore, it is not permissible to delete the short vowel / a / after it and geminate the second / l / with the third / l / so as to have three / l's / [$* lll$]. Likewise, / *ʔashadda ḡikrā* / \rightarrow / $* ʔashaḡḡ ḡikrā$ / [$* ḡḡḡ :C_1 C_1 C_1$].

2. The second situation in which *idghām* is not allowed is when nunation intervenes between consonants that might otherwise geminate, as in:

ghafūrun raḥīm \rightarrow *ghafūrurraḥīm* \rightarrow $* ghafūrrrhaḥīm$.

ghafūran raḥīma \rightarrow *ghafūrarraḥīma* \rightarrow $* ghafūrrrhaḥīma$.

kaʕaṣfin maʔkūl \rightarrow *kaʕaṣfimaʔkūl* \rightarrow $* kaʕaṣfmaʔkūl$.

Again *al-idghām al-kabīr* is not allowed here because it violates the syllable structure.

3. The third condition concerns the assimilation of / t / in particular. It should not be a first or second person pronoun / tu, ta, or ti / e.g.:

kuntu turābā \rightarrow $* kunt turābā$ (I were dust),

ʔafaʔanta tusmiʕu \rightarrow $* ʔafaʔant tusmiʕu$ (do you make

the deaf to hear),

laqad ji'ti šay'an fariyyan → * *laqad ji't šay'an fariyyan*
(truly an amazing thing hast thou brought).

Again it is the syllabic structure that prohibits *al-idghām al-kabīr* here. If assimilation were to take place in these three examples, the result would be:

* ntt CCC

* ntt CCC

* ʔtš CCC

All *qurrāʔ* agree on the above three conditions,⁸ which may, in fact be stated as one. Thus we may say that no assimilation or gemination can take place if the consonant preceding the short vowel that is to be dropped is itself preceded by a consonant. Ibn Mujāhid limits his prohibition here to the presence of *sukūn* on a consonant, as opposed to a glide or a long vowel.⁹

The question here is whether or not the *qurrāʔ* observe this condition in their practical reading.

In the readings of Abū ʿAmr and some of his followers, I have counted more than twenty-five cases in which they allow three consonant clusters to occur, in violation of the theories of both grammarians and scholars of *tajwīd*. Examples are:

1- *waštaʿala ʔarraʔsu šayban* → *waštaʿala ʔarraʔššayban*
(and the hair of my head doth glisten with grey).

ʔšš : CCC.

2- *min baʿdi ʔulmihi* → *min baʿḏḏulmihi* (after a wrong).

⁸ *an-Nashr*, 1 / 279.

⁹ *at-Taysir*, 25.

ṣṣ : CCC.

3- *wa naḥnu laḥū ʿābidūn* → *wa naḥnillahū ʿābidūn* (and it is he whom we worship).

ḥll : CCC.

4- *šahru ramaḍān* → *šahr Ramaḍān* (the month of Ramaḍān).

hrr : CCC.

5- Some other examples are:

ʿšš, ʿṣṣ, ʿḍḍ, ʿtt, ljj, ṭṭ, rss, rǧǧ, wəə, yšš, ytt, hll, hṣṣ. ¹⁰

4. The fourth condition for the permissibility of *al-idghām al-kabīr*, which is not accepted by all the *qurrāʾ*, is that the word of which the last consonant might assimilate should not be in the jussive case of a verb with weak third radical, e. g. :

wa man yabtaḡi ḡayra l-Islām (if anyone desires a religion other than Islām),

yabtaḡī : not in jussive,

yabtaḡi : in jussive.

* *wa man yabtaḡḡayr al-Islām* : dropping the vowel and geminating sounds (whoever wants other than Islam..).

Assimilation and gemination are, however, allowed here by some *qurrāʾ*.¹¹

Some examples of *al-idghām al-kabīr* that Abū ʿAmr uses frequently are:

¹⁰ Instances are given in full below:

<p>(في المهد صيبا) ، (من بعد صلاة) ، (من بعد ضراء) ، (من بعد ضعف) ، (دار الخلد جزاء) ، (بعد توكيدها) ، (من بعد ذلك) ، (الموت ثم) ، (لقد جئت شيئا) ، (والحراث ذلك) ، (حيث تؤمرون) ، (حيث شئتم) ، (ونحن له) ، (وما نحن لكما) ، (ونحن لك) ، (لبعض شأنهم) ، (إلى ذي العرش سيلا) ، (شهر رمضان) ، (ولتأت طائفة) .</p>

¹¹ *an-Nashr*, 1 / 279.

yu^caḡḡibu man yašā'u → *yu^caḡḡimmaṣṣāšā'u* (he punishes whom he pleases),

ʔilā al-Jannati zumarā → *ʔilā al-Jannazzumarā* (... to the Garden in crowds),

ḡayḡu tu'marūn → *ḡayttu'marūn* (where you are ordered),

wa ʔaxraja ḡuḡāḡā → *wa ʔaxraḡḡuḡāḡā* (and its splendor doth bring out ...),

yakādu zaytuhā yuḡī'u → *yakazzaytuhā yuḡī'u* (whose oil is well-nigh luminous).

2.5. Historical Assimilation:

Historical assimilation is one " which has taken place in the course of development of a language, and by which a word which was once pronounced in a certain way came to be pronounced subsequently in another way" ¹. It is the opposite of contextual or juxtapositional assimilation which is actual assimilation; therefore, when the word "assimilation" is used in phonetics or phonology without further modification, it means contextual assimilation and not historical assimilation. For this reason, historical assimilation is the business of historical linguistics. Another difference between the two types of assimilation is that historical assimilation involves a change only within a word, while in contextual assimilation, a change is found across morpheme and word boundaries as well as within the same word.

The significance of the study of historical assimilation is not the same in all languages. Some languages have undergone change enough in short or long periods to make it worth studying them historically, while some others, including classical Arabic, have not. "Arabic has not undergone significant phonological or syntactical change in its scientific-literary form" ². Thus there is not a great deal to be said about classical Arabic phonetics from a historical point of view.

Furthermore, we do not know much about early classical

¹ D. Jones, *An Outline of English Phonetics*, 218.

² S. Khalil, *The History of Early Arabic Linguistics*, xix.

Arabic. What we know goes back only to about 150 years before the rise of Islām³, and even that was not written down till the second century of the *hijrah*. In the first stages of classical Arabic, it is not easy to show how the Arabic sounds change, for lack of early material. Contemporary classical Arabic is similar to that described by the earlier grammarians both syntactically and phonologically. The only sounds that appear to have changed are / ʔ, q, ṭ⁴, and to some extent / ḍ /.
 .

In fact, the Arabic linguists do not directly deal with the history of changes in sounds⁵. They mention the *uṣūl*⁶ (original sounds) and differentiate between them and the *furūc* (derived sounds) which occur in words involving free variation.

It seems to me that the most likely reason for the Arabs' neglecting the study of sound historically is the general belief

³ That is to say that this is the earliest period for which we have any considerable amount of material, rather than merely a few words from inscriptions, such as "*naqsh an-namārah*" (328 A.D.) or even *naqsh umm al-Jimāl al-Awwal*, about (250 A.D.).

⁴ See (1. 5. above .

⁵ Some linguists say something about the history of small changes in sounds; they do not however say when these took place, but only why they took place. A report of as-Suyūṭi from Abū 'Ubaydah is an example: "The Arabs drop *hamzah* in four words in common use. These are: *khābiyah* (large vessel) from *khaba'a* (hide), *bariyyah* (humanity) from *bara'a* (create), *nabi* (prophet) from *an-naba'* (news), and *ḍurriyyah* (children) from *ḍara'a* (to give.)" (*al-Muzhir* , 2 / 252.).

⁶ The Arabs sometimes differentiate between the actual form of words and what they think to be the original form, even if the latter is not recorded. To quote Ibn Jinnī : " It has to be understood that when we say the original of *qāma*, *bā'a*... is *qawama* and *baya'a*...we do not mean that these words were for a time pronounced in this manner and that this pronunciation was subsequently abandoned. We mean that if they were pronounced according to analogy with similar forms they would be pronounced *qawama* and *baya'a*" (*al-Munṣif* , 1 / 190).

that languages in general and Arabic in particular are *tawqīfiyyah* (taught to mankind by *Allah*)⁷. Arabic was revealed and was thus learned completely at one time without going through different stages of development. Abū ʿAlī al-Fārisī says: " This language (Arabic) came down as a whole, like something imprinted ... no part of it can be adjudged to be earlier than another".⁸

Another reason may be that having recorded very many roots similar to one another except in one sound, the Arabic linguists think that this substitution of sounds is habitual to Arabic. Therefore, they accept words without giving much attention to their phonological history.

The question here is how they know which sound is the original and which is the derived or developed. The criteria that they adopt for this are the following:

1. Frequency of occurrence:

In cases where two or more roots exist, exactly similar to one another except in one sound, one is said to be the original and the other (s) derived from it, in accordance with the relative frequency of their occurrence.

khāmil / *khāmin* (languid).

bal / *ban* (rather).

Both words in each set above are reported to have the same meaning, but the first, in each case, is reported to be used more frequently. This implies to the Arabic linguists that the / l / in the first set is the original and that the / n / is

⁷ See for ex. *al-Khaṣāʾiṣ*, 1 / 47.

⁸ *al-Khaṣāʾiṣ*, 2 / 40.

developed from it; the same is true for the second set also.

2. Number of the inflectional forms recorded:

The root that is recorded as being *akthar taṣarrufan* (used in more / most different inflected forms) is taken as the original. For example *hatalat / hatanat as-samā'u* (it rains) are found in an equal number of inflected forms:

<u>word</u>	<u>type</u>
<i>hatalat / hatanat</i>	<i>māḍī</i>
<i>tahtil / tahtin</i>	<i>muḍāric</i>
<i>tahtāl / tahtān</i>	<i>maṣḍar</i>
<i>huttal / huttan</i>	<i>waṣf</i>

On this criterion, Ibn Jinnī arrives at the conclusion that both roots are original ⁹. Modern linguists, on the first criterion, frequency of occurrence, arrive at the conclusion that / *tahtān* / is the original, since it occurs more frequently than / *tahtāl* / ¹⁰. In the case of the roots *quḥḥ / kuḥḥ* (pure as in *ʿArabī quḥḥ / kuḥḥ ...*, *quḥḥ* is taken as the original, because it is recorded in the plural / *aqḥāḥ* / whereas *kuḥḥ* is not.¹¹

3. Occurrence in specific dialects:

The form used in a specific dialect or region is sometimes

⁹ *al-Khaṣā'iṣ*, 2 / 82.

¹⁰ I. Anis, *Min asrār al-lughah*, 79, and ʿIzz ad-Dīn at-Tanūkhī (ed.), *Kitāb al-ibḍāl* (intro.), 1 / 22

¹¹ *Sirr ṣināʿat al-irāb*, 1 / 180-181.

taken as being the derived one. ¹². The use of / *am* / as the definite article in the southern part of Arabic peninsula is one example.

The two or more words involved in each case must have exactly the same meaning in order to be considered as having undergone *ibdāl* (substitution). This condition is very important, since two such words may have a similar general meaning, but each with its own particular sense, being a minimal pair:

jamada / *jamasa* both mean to freeze but they are used of different substances:

jamada al-māʾ (the water froze).

jamasa al-wadak (the (diet) oil or fat froze).

qaḍama / *xaḍama* (both mean to eat, but they are again used of substances of different consistencies):

/ *qaḍama* / is used for eating something hard or dry (to gnaw), while / *xaḍama* / is used for eating something wet or moist (to munch).

No substitution is considered to have taken place in either of these two sounds, and both roots are taken as being original. However, it is reported that Dhū ar-Rummaḥ uses *jamasa* in one of his verses, speaking of water: *wal-māʾu jāmisu*; al-Aṣmaʿī considers this a mistake. Ibn Sīdah says : " If any one were to claim that / *s* / had been substituted for / *d* / here, his claim would not be accepted " ¹³.

On the other hand, when only one sound is used and is said to be developed from another that is no longer used, the original

¹² Sometimes both sounds are taken as being original.

¹³ *al-Mukhaṣṣaṣ*, 13 / 287.

sound of the one used may be established in one or more of the following ways, from other inflections of the root :

1. From the *maṣḍar* and *muḍāric*:

y → ā *bā^ca* (he sales).

bay^c ((n.) sale).

w → ā *qāla* (he said).

qawl (saying).

2. From the plural:

w → m *fam* (a mouth).

ʔafwāh (mouths).

3. From the dual:

w → ā *ṣaṣā* (a stick).

ṣaṣawān (two sticks).

4. From the diminutive:

w → ā *sā^cid* (an arm).

suway^cid (small arm).

5. From the *nisbah*:

w → ā *malhā* (a place of entertainment).

malhawiyy (someone/something connected

with a place of entertainment).

6. From analogy:

This is one of the principal ways of establishing the original sounds. When Arabic phoneticians say that the original roots of the words *qāma* (to stand), *bā^ca* (to seal) are * *qawama* and * *baya^ca* respectively, they do not mean that these forms were used. Rather they deduce them according to the pattern of the strong root *fa^cala yaf^calu* and its derivatives.¹⁴

¹⁴ *al-Munṣif*, 1 / 190.

Some such words are reported as occurring in the strong root pattern. Although they are thus used with the original sound, they have been considered in Arabic linguistics as exceptions; such are *istanwaqa al-jamalu* (the camel behaved like a she-camel), *istarwaḥa* (to ventilate), and *istaḥwaḏa* (to overwhelm).¹⁵ Such words do not occur with assimilation: **istanāqa*, **istarāḥa* (meaning to ventilate), and **istaḥāḏa*.

¹⁵ *al-Munṣif*, 1 / 190-191.

Chapter Three

Chapter Three

Sounds in Combination

Arabic is a language that has a wide range of sounds, from the farthest part of the throat (glottal) forward down to the lips (labial).¹ The Arabs recognize three types of close relationship:

1. *Tamāthul*,
2. *Tajānus*, and
3. *Taqārub*.

With *tamāthul*, they define the two sounds in question as sounds "... for which you put your tongue in the same place "². In other words, the second is simply the first repeated, (C₁ C₁), as ' tt ', ' bb ', and ' ss '. Sībawayh defines them as sounds " for which you put your tongue in one place without moving it "³. The two sounds are usually geminated for ease of articulation.

With *tajānus*, the Arabs describe the two sounds as having the same *makhraj* (place of articulation) but not the same *ṣifah* (manner of articulation), as b / m, l / n, and s / ṣ. In fact homorganic closeness affects sounds more than the manner of articulation.

With *taqārub*, the two sounds have neither the same place of articulation nor the same manner of articulation; they are quite close, however, either in their place of articulation or in

¹ In this chapter, we are mostly speaking with regard to the Arabs' point of view concerning the combination of sounds. We ignore the interference of short vowels; however, we shall focus on them when it is necessary. As an example, the Arabs consider / ʔ / and / h / to occur consecutively in such words as / ʔahl / (family) .

² *an-Nashr*, 1 / 278.

³ *al-Kitāb*, 2 / 407.

their manner of articulation or in both⁴. To Sībawayh, *mutajānis* and *mutaqārib* are the same: he calls them both *mutaqārib*⁵. Sībawayh's view is practically perhaps better, since both Arabic linguists and scholars of *tajwīd* cite almost identical definitions of *mutajānis* and *mutaqārib* and speak about them in very similar terms. To illustrate these three relationships, we may use this table:

type	P. O. A [*]	M. O. A. ^{**}	Example
mutamāthil	the same	the same	bb
mutajānis	the same	0	bm
mutaqārib	close	0	qk
-	0	close	tḏ
-	close	close	tḏ

Sounds other than those having one of these three types of relationship are considered *mutabāʿid* (distant, as in the case of / h / and / b /).

We have to consider here the degree of closeness between sounds and what is meant by the same place of articulation. How close are the places of articulation in *mutaqārib* ?

In answering such questions, we should consider the Arabs' division of sounds into two groups: *ḥalqī* (throat) and *famawī* (oral) sounds. There are three sub-groups of the *ḥalqī* group:

⁴ *an-Nashr*, 1 / 278.

⁵ *al-Kitāb*, 2 / 411.

* P. O. A = point of articulation.

** M. O. A. = manner of articulation.

1. glottal: ʔ, h,
2. pharyngeal: ʕ, ḥ,
3. uvular: ʁ, ʁ̥.

Ibn Jinnī speaks about the sounds in all three groups as being *mutaqārib*, even though, in fact, they are not so with one another in the same degree, for example:

- / ʔahl / (family) root ʔHL,
 / ʔuḥud / (a name of mountain in Madīnah) root ʔḤD, and
 / ʔax / (brother) root ʔX.⁶

These show that Ibn Jinnī is not using the term *mutaqārib* with precision. He calls the pair of sounds / ʔh /, / ʔḥ /, / ʔx / *mutaqārib*, whereas, in fact, in the first example, the two sounds are *mutajānis*, in the second, they are contiguously articulated, and in the third, they are distinctly articulated.

From this, we may conclude that when speaking about the nearness of sounds, Arabic linguists are not necessarily specific about the place of articulation. To them *mutaqārib* has a wide range of signification. It sometimes implies *mutajānis*.

In their discussion of *taʔlīf al-ḥurūf* (the combination of sounds), the Arabic linguists give the manner of articulation less attention than they do the place of articulation. This is because it is indeed the place of articulation that principally determines whether certain sounds can occur in combination; the manner of articulation is far less important, from the point of view of ease of articulation.

We, as the Arabic linguists do, shall discuss the combination of sounds in this chapter considering two related

⁶ *al-Khaṣāʾiṣ*, 1 / 54.

aspects:

1. the relationships between sounds and their acceptance or otherwise of being combined with each other within the same root.
2. the influence of sounds upon each other.

Although number one is important, number two, which results in some kind of assimilation, is more important and more relevant to our topic. The two aspects will be discussed consecutively, beginning with their application to consonants, in which both are concerned:

3. 1. Consonants:

3. 1.1. *Taʿlīf al-ḥurūf* (the combination of sounds) :

As far as the combination of sounds, both within and across word boundaries, is concerned, the Arabic phoneticians focus on the environment in which they most commonly combine, in which they less commonly combine, and in which they do not combine at all. In this context, they are concerned rather with the root than the word as such.

In general, the Arabic linguists ignore vowels in determining the root of a word; so the root of *ʾāhaba* (he went) is *ʾHḤB*.

Vowels really only come into consideration in words that we may call uni-literal and bi-literal. These will be briefly discussed.

The trilateral root will receive most attention. The quadrilateral and quinqueliteral roots will be omitted, since they share the characteristics of the trilaterals to a great extent.

1. Uni-literal forms:

By uni-literals what is meant is occurrences of a single consonant having an independent meaning, whether or not this single consonant affects the inflection of the following word. The majority of these is *maftūḥ* (followed by / a /), such as:

hamzat al-istifhām (interrogative particle / ʾa /),

wāw al-ʿaṭf (particle of conjunction), and

fāʾ al-ʿaṭf (particle of conjunction).

A few particles are *maksūr* (followed by / i /), such as:

lām al-ʾamr (imperative particle / li /).

None of this type is *maḍmūm* (followed by / u /)⁷. The reason for the predominance of *fatḥah* in such cases is said to be ease of articulation. / a / is said to be *khafīfah* (light, easy to pronounce), / i / is harder than / a /, and / u / is *ʾaṭqaluhā* (the heaviest, most difficult of the three).

2. Bi-literal forms:

Similarly, the vowels following the first radical of bi-literal forms are ordered according to their frequency of use as follows: *maftūḥ*, *maksūr*, and *maḍmūm*. Very few words of this type have *ḍammah* after the first radical. Some examples of bi-literal forms are:

a. *kam* (how many ?),

man (who ?),

ʾaw (or),

b. *min* (from),

⁷ *al-Khaṣāʾiṣ*, I / 71.

ʔin (if),
c. *huwa* (he).

3. Triliteral forms:

Regarding the combination of these sounds, there are three degrees of acceptability: "suitable", "less suitable" and "unsuitable" (or "prohibited").

The "suitable" type, is that in which the three consonants are articulated "distantly" from one another,⁸ as in the word *ʔalam* (pain): / ʔ / glottal, / l / alveolar, and / m / bilabial. There is no difficulty in pronouncing such combinations.

The "less suitable" type is that in which two identical consonants occur in the same root, as in :

Maqaq [root *MQQ*] (length),
madad [root *MDD*] (support),
sabab [root *SBB*] (reason) .

The third type, the "unsuitable" or "prohibited", is that in which the three consonants are articulated very closely together, *mutaqārib*. Some combinations in this type are difficult; some are not. Here the most difficult sounds to combine together are *ḥalqī* sounds (sounds articulated in the throat area, glottal, pharyngeal, and uvular / ʔ, h, ʕ, ḥ, ʁ, x /), especially when articulated contiguously without being separated by any other consonant.

The sounds of Arabic may be grouped in descending order from the *ḥalqī* (throat sounds) down to *famawī* (lip sounds) :

⁸ See *al-Kitab*, 2 / 411, *Sirr šināʿat al-iʿrāb*, 1 / 65, *Jamharat al-lughah*, 1 / 9, *Sirr al-faṣāḥah*, 58, and *al-Muzhir*, 1 / 191.

1. *Ḥalqī* sounds (throat sounds):

Ḥalqī sounds are six : / ʔ, h, ʕ, ḥ, ʁ, X /. They are the most difficult sounds, especially when combined within the same root. The possibilities in the combination of such sounds are:

- a. The combining of three of them.
- b. The repetition of one of them [*takrīr*].
- c. The combining of two of them:
 1. Contiguously,
 2. Distantly.

As for the combination of three closely articulated sounds, this does not occur in Arabic with *ḥalqī* sounds. The only reported case of such a combination is *al-huʕxuʕ* (a kind of plant), a word which is considered as instance of *ḍaʕīf* (weak Arabic). The combination of / h, ʕ, and x / is difficult to pronounce and the repetition of / ʕ / makes it even more difficult.

The *ḥalqī* sounds are much less commonly repeated within a root than others. Some examples are:

- ad-daḡīḡah* (nice garden),
- ar-raḡīḡah* (a kind of food made of milk and flour),
- al-mahah* (beauty),
- al-baḡaḡ* (hoarseness),
- aš-šuʕāʕ*⁹ (beam).

Two *ḥalqī* sounds are also less commonly contiguously combined than others, as shown below:

⁹ *Sirr šināʕat al-irāb*, 2 / 813-814.

* ʔ + ʕ / ʁ

* h + ḥ / x / ʁ

* ʕ + ʔ / ḥ / x / ʁ

* ḥ + ʔ / h / ʕ / x / ʁ

* x + ʔ / h / ḥ / ʁ

* ʁ + ʔ / h / ḥ / ʕ / x

The only *ḥalqī* sounds which occur contiguously together within the same root are:

1. ʔ + h : ʔahl (family),
ʔahaba (?).
2. ʔ + ḥ : ʔuḥud (the name of mountain in Madinah),
ʔiḥnah (?).
3. ʔ + x : ʔax (brother),
ʔaxaḏa (to take),
ʔuxar (others).
4. h + ʔ : bahaʔa (?),
nahiʔa (?).
5. h + ʕ : huʕxuʕ [which is rejected] (a kind of plant),
dahaʕa (to call camels),
lahiʕ (be compliant).
6. ʕ + h¹⁰ : ʕahd (knowledge),
ʕuhr (adultery),
ʕihn (wool).
7. x + ʕ : baxaʕa (to harm oneself),
naxʕ,
xuʕxuʕ.

¹⁰ al-Khalil is mistaken when he claims that ʕh is *muhmal* (not used), *al-ʕAyn*, 1 / 61. In fact he himself later gives some examples, such as ʕahaba, ʕahaja, ʕahd, ʕuhrah, ʕahaqa, ʕahila, ʕahama, ʕihn.

A chart of *ḥalqī* sounds contiguously combined would look like this:

	ʾ	h	ʿ	ḥ	ḡ	x
ʾ	0	+	*	+	*	+
h	+	0	+	*	*	*
ʿ	*	+	0	*	*	*
ḥ	*	*	*	0	*	*
ḡ	*	*	*	*	0	*
x	*	*	+	*	*	0

* do not occur

Even when two *ḥalqī* sounds are separated, they still only rarely occur, although, more commonly than in contiguous combination. Here are some examples :

hadaʾa (to be quiet),

ʿibʾ (burden),

xabaʾa (to hide),

ḡayhab (very dark night).

2. ʾAqṣā al-lisān (the back of the tongue) / q, k, j /

These three sounds do not occur contiguously in Arabic, although they are not more difficult to combine than *ḥalqī* sounds, which, as we have seen, are claimed to be the most difficult to be combined contiguously. / q, k, j / are never used

contiguously within the same root:

* q + k	* q + j	* k + q
* k + j	* j + q	* j + k ¹¹

These sounds can, however, follow each other when they occur in two separated roots as in:

ka qawlika (as you said),

al-haqqu kulluhu (the whole truth),

ḡaxrij kutubaka (take out your books).

3. / j / with *ḡurūf at-tafxīm* (emphatic sounds):

There are seven *tafkhīm* sounds¹² / ṣ, ḍ, ṭ, ḡ, x, ẖ, and q /. As regards the combination of these with / j /, they are divided into two groups:

1. Sounds that do not combine with / j / anyway. These are / ẖ, ṣ, q, ṭ /¹³ in pure Arabic words. Therefore, Arabic linguists consider the following words to be *ḡaḡjamī* (originally not Arabic) and *muḡarrab* (Arabized):

manjanīq (catapult),

ṣawljān (staff with a curved end),

ṭājīn (frying pan).

2. As for the remaining emphatic sounds, namely / ḍ, ḡ, and x /, / j / only very rarely combines with them. Words that

¹¹ Ibrahim Anis says: "I have not found *jīm* followed by *kāf* in Arabic dictionaries except in one or two strange words, like *jakara* (to attempt a hard sell)", *al-Aṣwāt al-lughawiyyah*, 83.

¹² *Istiḡlāl* is a term that is used more by the Arabs.

¹³ *al-Bayān wat-tabyin*, 1 / 69.

have such a combination may be counted on the fingers although, perhaps surprisingly, some examples are words in very common use, such as *xaraja* (to go out), *nađija* (to be ripe or well cooked) and *jaḥaḡa* (to protrude or bulge).¹⁴

4. *Ḥurūf aṣ-ṣaflr* (sibilant sounds) : / s, ṣ, z, š /:

The hissing sibilant sounds / s, ṣ, z / do not combine with each other¹⁵ :

* s + ṣ / z * ṣ + s / z * z + s / ṣ

However, when this group of sounds combine with hushing / š /, it must precede them as in *šazaba* (to be ragged), *šazr* (trail, difficulty), *šasafa* (to be dry), *šasaʿa* (to be remote), *šaṣaba* (to be hard, painful), and *šaṣāṣāʾ* (year of drought).¹⁶

Ibn Jinni says: "neither / ṣ, s, or z / may precede / š /".¹⁷

* s + š * ṣ + š * z + š

As for the combination of sibilant sounds with other sounds, the following cases may be considered:

A. / s / with / š / :

/ s / does not combine with / š / within the same root. al-Jawāliqī says: " If you come across a word that has both / s / and / š /, you may consider this word not as pure Arabic but rather as an adopted word from a foreign language ".¹⁸

¹⁴ *al-Aṣwāt al-lughawiyyah*, 80.

¹⁵ *Sirr al-faṣāḥah*, 58, and *Lisān al-ʿArab*, chapters / z, s, ṣ /.

¹⁶ *Sirr ṣināʿat al-irāb*, 2 / 817.

¹⁷ *Ibid.*

¹⁸ *Sahm al-alḥāḡ fi wahm al- alfaḡ*, 25.

* s + š * š + s

B. / z / with / ɖ, ʒ, ʒ /:

"/ z / does not combine with / ʒ, ɖ, ʒ / in one root, whatever the order may be".¹⁹

* z + š / ɖ / ʒ * ʒ + z

* ʒ + z * ɖ + z

C. / š / with / ɖ and l /:

/ š / does not occur after / ɖ / nor after / l / according to al-Khalīl Ibn Aḥmad; however, *raḵulun lišlāš* (light man) is reported as an exception.²⁰

* l + š * ɖ + š

The reverse is accepted with / l / only as in :

š + l : *šalal* (handicap)

* š + ɖ

5. Non-glide sonorants / n, l, r /:

Any possible order of these three sounds is accepted within the same root as well as across word boundary. The only exception is that / l / cannot be followed by / r /²¹.

n + r : *naḥara* (to kill a camel) and *naḥara* (to scatter).

n + l : *nāla* (to gain) *naḥula* (to become thin).

r + n : *raṣuna* (to be sedate).

r + l : *raḵul* (a man) *riḵl* (a leg).

¹⁹ *al-Bayān wat-tabyīn*, 1 / 69.

²⁰ *al-Lisān al-ʿArabi*, Fasḵ / l / Bāb / š /.

²¹ *al-Muḥḥir*, 1 / 195.

l + n : *lan* (no / not) and *ladun* (from).

* l + r .

It is not as Ibn Jinnī claims: "As for the combination of / r /, / l /, and / n /, it is accepted wherever / r / precedes the other as *waral* (monitor lizard), *ʔurul*, *rannah* (ringing sound), and *rand* (myrrh), but neither of them is accepted before / r /. The reason behind this rejection is that / r / is stronger than / l, n / "22. Ibn Jinnī, in this statement, ignores examples such as *naḥar*, *naḥar*, and *naḥar*. He must mean that / n / cannot occur immediately before / r /, which is correct, and it is supported by his explanation: " If the two sounds (n, r) occur contiguously, the strong one comes first ".23 A few exceptions are reported with geminated / n / which is stronger:

dannara (to become wealthy).

muzannir (a big tall man).

Sibawayh is more specific, saying that: "We do not know of *nūn sākinah* (the voiceless / n /) occurring before / r / and / l /, for it is difficult to pronounce without assimilation, and if it is assimilated and geminated it, it will be confused with the geminated original ".24 The *sukūn* condition of / n /, which means immediately contiguous, has been excluded from the discussion in this sub-chapter.

22 *Sirr ṣināʿat al-irāb*, 2 / 818.

23 *Ibid.*

24 *al-Kitāb*, 2 / 416.

6. Dentals / ǧ, ǥ, ɐ / with / t̥ /:

These sounds do not combine with each other in one root, except that / t̥ / and / ɐ / may occur in one root as in *ɐabaṭa* (discourage) and *ṭamaɐat* (to menstruate) :

* ǧ + ǧ / ɐ / t̥

* ɐ + ǧ / ǧ /

* ǧ + ǧ / ɐ / t̥

* t̥ + ǧ / ǧ /

7. Labials : / f, m, b /:

It is difficult to combine these sounds in one root. The only combinable sounds here are :

1. f + m : as in *fam* (mouth), *fahima* (to understand) .

2. b + m : as in *būm* (owls), *ibtasama* (to smile) .

The remaining combinations do not occur.

* f + b

* b + f

* m + b

* m + f

8. Summary of sounds that do not combine together in the same root:

1. * ʔ + ʕ, ɣ

2. * h + ḥ, x, ɣ

3. * ʕ + ʔ, ḥ, x, ɣ

4. * ḥ + ʔ, h, ʕ, x, ɣ

5. * x + ʔ, h, ḥ, ɣ

6. * ɣ + ʔ, h, ḥ, ʕ, x

7. * q + k, j

8. * k + q, j

9. * j + q, k

10. * s + ʂ, z, ʃ, ʤ

11. * ʂ + s, z, ʃ

12. * z + s, ʂ, ʃ, ʤ, ɖ

13. * l + ʃ, r

14. * ʤ + ʤ, ɐ, t̥, z

15. * ɖ + z, ʃ

16. * ʤ + z, ʤ, ɐ, t̥, s

17. * d + t

18. * t̥ + ʤ, ʤ

19. * ɐ + ʤ, ʤ

20. * f + b

21. * m + b, f

22. * b + f

Arabic sounds in descending order according to the number of sounds that do not precede or follow them:

Sounds	not preceded by	not followed by	no. of conditions
ḡ	x, c, ḡ, h, ʾ	ʾ, h, ḡ, c, x	10
ḡ	ə, ḡ, ṭ, z, s	ə, ḡ, ṭ, z, s	10
z	ḡ, ṣ, s	s, ṣ, š, ḡ, ḡ	9
ḡ	x, ḡ, h	ʾ, h, c, x, ḡ	9
x	ḡ, c, ḡ, h	ʾ, h, ḡ, ḡ	8
ḡ	ə, ḡ, ṭ, z	ḡ, ə, ṭ, z	8
c	ḡ, ḡ, ʾ	ʾ, ḡ, x, ḡ	7
s	z, ṣ, ḡ	ṣ, š, z, ḡ	7
ʾ	x, ḡ, c, ḡ	c, ḡ	6
h	ḡ, x, ḡ	ḡ, ḡ, x	6
š	l, ḡ, z, ṣ, s	5
ṣ	z, s	s, z, š	5
ə	ḡ, ḡ	ḡ, ḡ	4
ṭ	ḡ, ḡ	ḡ, ḡ	4
q	j, k	k, j	4
k	q, j	q, j	4
j	q, k	q, k	4
ḡ	z	z, š	3
f	m, b,	b	3
b	m, f	f	3
t	d, ə	---	2
l	---	š, r	2
m	---	b, f	2
r	n	---	1
n	---	---	0
d	---	---	0
Total	62	64	126

Arabic sounds in descending order according to the number of conditioning sounds in a preceding or following position within the same word:

sounds	# of conditioning sounds
ڤ, ڤ	10
ڤ, ز	9
ڤ, خ	8
ع, س	7
ه, و	6
ش, ش	5
ج, ك, ق, ع, ٲ	4
ب, ف, ڊ	3
ت, م, ل	2
ر	1
ن, د	0

Muḥammad Al-Khūlī carried out a statistical study using some modern linguistics texts. He came to the conclusion that the order of Arabic sounds according to their frequency is as follows: a, i, l, ā, t, u, n, m, و, y, r, w, ع, h, b, ī, d, f, s, k, q, ڤ, j, ū, ٲ, ش, ڤ, ع, x,

ṣ, š, ḍ, ḏ, z ²⁵

On the other hand, Ibn Durayd claims that: "The most frequently used sounds in Arabic are w / u, y / ī, and ʾ, and the least frequently used, as they are difficult to pronounce, are ḏ, then ḍ, then ʿ, then š, then q, then x, then ʿ, then n, then l, then r, then b, then m"²⁶. Regarding this strange statement, we must assume that several omissions (13 consonants) have occurred, for some reason, towards the middle of the series ²⁷. This is because / m /, / b /, / r /, / l /, and / n / are not difficult sounds. They are all except for / m /, among the *ṣalāqah* sounds. Ibn Durayd himself supports this idea when he says about the *ṣalāqah* sounds: "*Wa hiya ʾaktharu l-ḥurūf wa ʾaḥsanuhā imtizājan bi ghayrihā*"²⁸ (they are the most common sounds and the easiest to combine).

The so called *ḥurūf aṣ-ṣalāqah* (labial / b /, / m /, and / f /, and alveolar sonorants / l /, / n /, and / r /) have been given most attention by Arabic linguists, and have been described as sounds of which quadriliteral and quinqueliteral Arabic words should have at least one; otherwise these words are considered as *muʿarrab* / *ʾaʿjamī*²⁹; except for some ten quadriliteral words ³⁰. It is to be understood from such an

²⁵ *al-Aswāt al-lughawiyyah*, 154.

²⁶ *Jamharat al-lughah*, 1 / 12.

²⁷ as-Suyūṭi reports the same statement, referring it to Ibn Durayd without comment. (see *al-Muzhir*, 1 / 195).

²⁸ *Jamharat al-lughah*, 1 / 7.

²⁹ *al-ʿAyn*, 1 / 58, *Sirr ṣināʿat al-ʾiṣrāb*, 1 / 65, and *al-Muzhir*, 1 / 270, etc.

³⁰ *al-ʿAyn*, 1 / 52. al-Khalil adds: " Any quadriliteral noun that has no

assertion that the *ṣalāqah* sounds are the most frequently used in Arabic

Another indication of how frequently a sound occurs is the number of conditioning sounds around it.

The least and the most frequently used consonants in Arabic may be indicated according to four different systems:

1. the consideration of the conditioning sounds,
2. Ibn Durayd's system,
3. al-Khūlī's system,
4. consideration of the *ṣalāqah* sounds ³¹.

The following table shows the six most frequently used sounds according to these systems:

	1	2	3	4
sounds	d , n , r m , l , t	m , b , r l , n , ʾ	m , n , ʾ r , ʿ , h	m , b , f l , r , n

The four systems show a reasonable degree of agreement concerning the frequency of use of these sounds; thus we may conclude that:

1. Sounds with a less conditioning environment are used more in Arabic.
2. The Arabs' consideration of the existence of *rubaʿī* and *khumāsī* words without one or more of the *ḥurūf aṣṣalāqah*

ṣalāqah sound should have one or both of the *ṭalāqah* sounds (ʿ , q) or one or both of s and d "(see *al-Ayn*, 1 / 54).

³¹ Consonants only are considered here and not vowels or semi-vowels.

as *ʔaʕjamī* is accurate ³²

3. The voiced consonants have less frequency in Arabic according to systems 2 and 3, but not system 1³³:
 - a. assuming that the more conditioning there is the less used the sounds, 5 out of the 12 most conditioned sounds are voiced,
 - b. in Ibn Durayd's system, 9 out of the 12 least used consonants are voiced,
 - c. in al-Khūlī's system, 7 out of the 12 least used consonants are voiced.
4. of the conditioning sounds (as shown in the table below):
 - a. 39 are homorganic,
 - b. 44 are articulated further back than the sounds that they condition,
 - c. 44 are articulated further forward than the sounds that they condition.

³² Half of them are alveolars / n, l, and r /. This frequency of use of the alveolars is similar to that in English. Hutcheson: "alveolar articulations have such a high frequency of occurrence in English." PhD, p. 17.

³³ However, this result does not necessarily contradict Ibrahim Anis's claim that the percentage of the occurrence of voiceless sounds is not more than 25% of the total number (*al-Aswāt al-lughawiyyah*, 21) since the voiced sounds include vowels.

not preceded by			sounds	not followed by		
homorganic	S. A. F	S. A. B		homorganic	S. A. F	S. A. B
1	0	4	ʃ	1	0	4
2	0	3	ʒ	2	0	3
2	1	0	z	3	2	1
0	2	1	h	1	2	2
1	0	3	x	1	0	3
2	0	2	ç	2	0	2
1	1	1	c	1	2	1
2	1	0	s	2	1	1
0	4	0	ʔ	0	2	0
0	3	0	h	0	3	0
0	6	0	š	0	0	0
2	0	0	ʂ	2	0	1
2	0	0	e	2	0	0
0	2	0	t	0	2	0
0	2	0	q	0	2	0
0	1	1	k	0	1	1
0	0	2	j	0	0	2
1	0	0	ɟ	1	0	2
0	2	0	f	0	1	0
1	0	1	b	0	0	1
1	1	0	t	0	0	0
0	0	0	l	1	0	1
0	0	0	m	1	0	1
1	0	0	r	0	0	0
0	0	0	n	0	0	0
0	0	0	d	0	0	0
19	26	18		20	18	26

S. A. F - sounds articulated further forward than the sounds that they condition.

S. A. B - sounds articulated further back than the sounds that they condition.

It is important to see whether there are rules controlling the combination of Arabic consonants or not. Why do some consonants occur before some other consonants and not before others? We shall now discuss these questions and see what the Arabic linguists have said and how relevant that is.

1. What determines whether combination of sounds can take place is the place of articulation, which also determines the difficulty or ease of pronunciation. This is the reason why some homorganic and closely articulated sounds such as *xaḡ*, *ḡax*, *kaq*, *qak* are not combined. However, it is not always difficulty of pronunciation that prevents the combination of sounds. One example of this is that of / j / with / k / which are supposed never to occur together in the same root, even though, it is not difficult to pronounce them adjacently, as in *ʔakhrajaka* (he took you out) and *kajulūs* (as sitting).
2. Most of the sounds that do not accept combination have this characteristic bidirectionally, e. g. / * x ḡ / and vice versa / * ḡ x /. 50 out of a total of 64 are bidirectional, and only 14 are unidirectional, in this respect. This latter type includes both homorganic and non-homorganic sounds.

Why should bidirectionally occur ?

a. Non-homorganic sounds:

11 out of a total of 91 that do not allow combination unidirectionally are non-homorganic sounds. 9 out of the 11 will not combine with a sound produced further back than themselves and only 2 will not combine with a sound produced further forward than themselves. We may conclude that when two

sounds are difficult to combine, the one further back will normally come first.³⁴ The only exceptions are the combination of [x + ʕ] and [ʕ + t], where *baxiʕa* (to anger), *nuxāʕ* (spinal cord), and *ʕabata* (to stand firm), occur, but the two do not occur in the opposite combination.

* ʕ + x

x + ʕ

* t + ʕ

ʕ + t

b. Homorganic sounds :

The only homorganic sounds which do not allow combination unidirectionally are [* d + t], [* l + r], and [* m + b]. The question is, why do the combinations are not occur when the first sound of each set comes first, whereas they can combine when reversed?

1. * d + t

t + d as in *watad* (a peg).

2. * l + r

r + l as in *waral*.

3. * m + b

b + m as in *būm* (owl).

To Arabic linguists, the reason for the occurrence of such combination in one direction but not in the other is that the stronger sounds should be articulated before the weaker ones.³⁵ It is not, in fact, clear as to what is meant by describing a sound

³⁴ Ibn Jinni and some other Arabic linguists say that: the "stronger" sounds come first, as in the case of the combining of / s, ʃ, z / with / ʃ /. They must follow it since it is stronger than they (*Sirr ʃināʕat al-irāb*, 2 / 817).

³⁵ *al-Khaṣāʾis*, 1 / 54, *al-Muzhir*, 1 / 196, *Jamharat al-lughah*, 1 / 9.

as strong or weak. One such confusing statement is made by Ibn Jinnī : "If two (*ḥalqī* sounds) are combined, the stronger one should come first, as in *ṣahl*, *ṣuḥud*, *ṣax*, *ṣahd*, and *ṣuhr*"³⁶. It is confusing because, for example:

1. *ṣ* and *h* : These combine in either direction, e, g.: *hadaṣa* (to be quiet), and *haniṣa* (to be comfortable).
2. *ṣ* and *h* : These also combine in either direction, e, g.: *ṣahara* (adultery) and *haraṣa* (to run), and *hajaṣa* (to sleep at night). In fact, it is clear from his examples that by "if two *ḥalqī* sounds are combined", he is here referring to contiguous combination, rather than combination with some consonant or consonants intervening.

Earlier than Ibn Jinnī, al-Khalīl also makes an inaccurate statement: "*ṣAyn* / *ṣ* / is *muhmalah* (not used in the same root) with sounds / *ḡ*, *h*, *ḥ*, and *x* /"³⁷. He must mean that these sounds do not combine with / *ṣ* / if / *ṣ* / comes first; however, he himself lists, in the same book, some examples that contradict his own assertion. The following are some examples:

- baxiṣa* (to anger) (1 / 123),
- naxaṣa* (spite out) (1 / 121),
- dahaṣa* (to call camels) (1 / 103),
- nahaṣa* (to be poor) (1 / 108),
- ṣahiba* (to be careless) (1 / 109),
- ṣahida* (promise) (1 / 121).

³⁶ *al-Khaṣā'iṣ*, 1 / 54.

³⁷ *al-ṣAyn*, 1 / 61.

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Earlier than Ibn Jinnī, al-Khalīl also makes an inaccurate statement: "ʿAyn / ʿ / is *muhmalah* (not used in the same root) with sounds / ḡ, h, ḥ, and x / "37. He must mean that these sounds do not combine with / ʿ / if / ʿ / comes first; however, he himself lists, in the same book, some examples that contradict his own assertion. The following are some examples:

- baxiʿa* (to anger) (1 / 123),
- naxaʿa* (spite out) (1 / 121),
- dahaʿa* (to call camels) (1 / 103),
- nahaʿa* (to be poor) (1 / 108),
- ʿahiba* (to be careless) (1 / 109),
- ʿahida* (promise) (1 / 121).

36 *al-Khaṣāʾiṣ*, 1 / 54.

37 *al-ʿAyn*, 1 / 61.

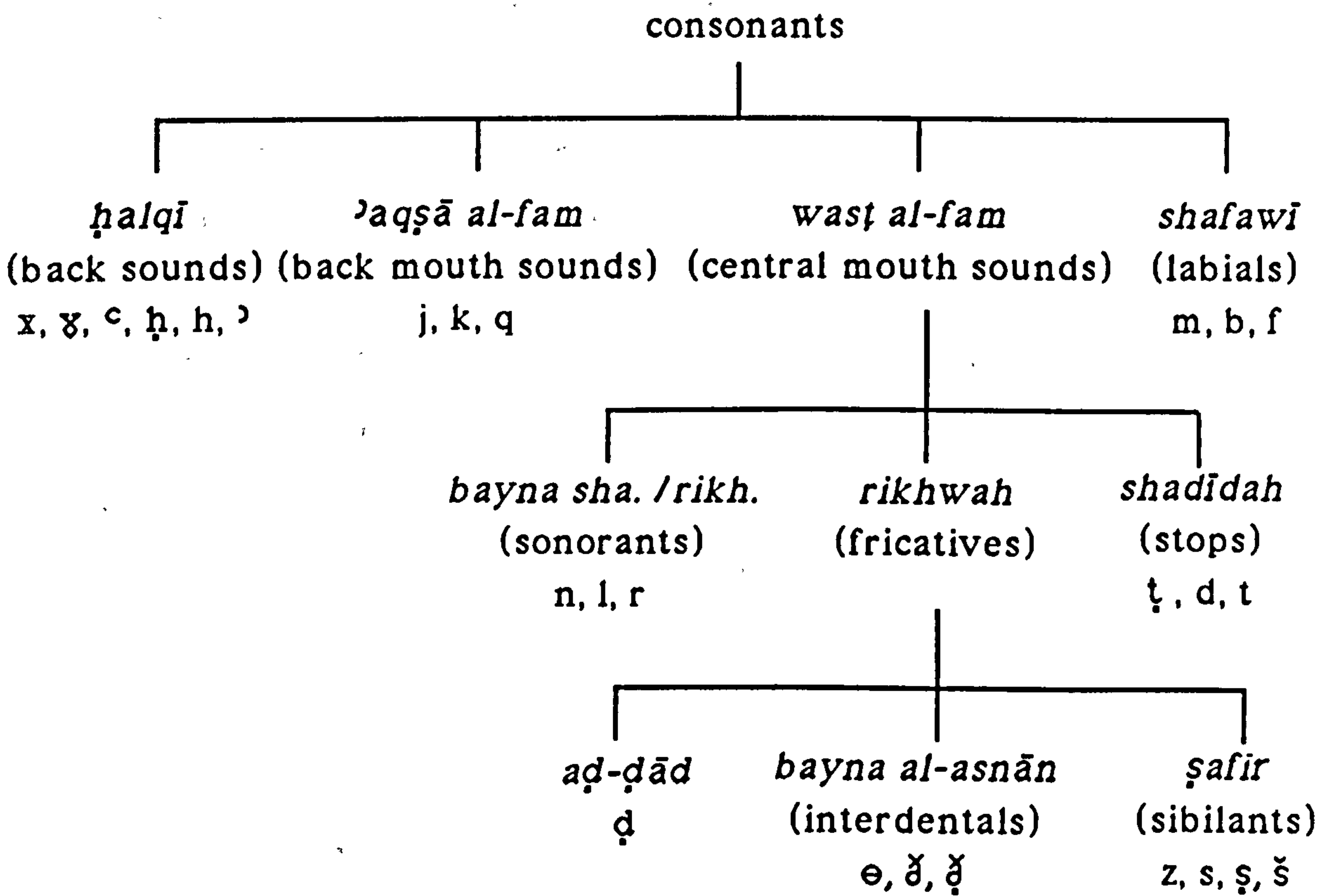
Regarding the combination of sounds, in general, Bahā' ad-Dīn as-Subkī says: "The best and most frequent of these combinations are as follows:

1. A sequence of sounds going from back to central to front,
2. A sequence of sounds going from central to front to back,
3. A sequence of sounds going from central to back to front,
4. A sequence of sounds going from back to front to central,
5. A sequence of sounds going from front to back to central".³⁸

³⁸ *Arūs al-afrāh*, 95.

3.1.2. *Idghām al-ḥurūf wa ibdāluhā* :

The Arabic consonants act differently from one another in their acceptance of *idghām* (assimilation) and of being used as *ibdāl* (free variations). Assimilation will be discussed in detail, starting with back sounds and moving forwards. The group of central-mouth sounds contains a large number of consonants; therefore, it may be further divided according to their manner of articulation. This may be shown in the following chart:



I. Ḥalqī sounds:

A. Hamzah / ʾ / (glottal stop) :

The glottal stop / ʾ / interchanges with non-consonants, being regarded as one of the most difficult sounds in Arabic. This sound has been discussed in great detail in the fields of both of *Qirāʾāt* and of Arabic linguistics. Indeed, numerous examples are given in books on *Qirāʾāt*, where one finds it difficult to formulate systematic rules about when this sound is pronounced as pure *hamzah*, where as in-between *hamzah*, where as a long vowel, and when it is altogether omitted. This is because *Qurʾānic* readers differ in pronouncing this sound in many cases. In fact, the same reader may pronounce the sound / ʾ / differently in similar readings.

As for Arabic linguistics, linguists have identified situations where the sound / ʾ / changes to a long vowel or a semi-vowel, and vice-versa, and have formulated rules for this. However, the rules may be combined and reduced in number. The interchange between / ʾ / and non-consonantal sounds may be represented as:

$$1. \text{v}ʾ \longrightarrow \bar{\text{v}}$$

$$\text{a}ʾ \longrightarrow \bar{\text{a}} / \text{ʾ} \text{ — } :$$

$$\text{ʾaʾmana} \longrightarrow \text{ʾāmana (to believe).}$$

$$\text{i}ʾ \longrightarrow \bar{\text{i}} / \text{ʾ} \text{ — } :$$

$$\text{ʾiʾmān} \longrightarrow \text{ʾīmān (believe).}$$

$$\text{u}ʾ \longrightarrow \bar{\text{u}} / \text{ʾ} \text{ — } :$$

$$\text{ʾuʾtiya} \longrightarrow \text{ʾūtiya (given).}$$

$$2. \text{ʾ} \longrightarrow \emptyset / \text{a} \text{ — } \neq \text{ʾ (optional):}$$

$$\text{jāʾa ʾajaluhum} \longrightarrow \text{jā ʾajaluhum.}$$

◌ → y / i / ___ i ≠ ʾi (optional):

al-bighāʾi ʾin → *al-bighāy ʾin*.

◌ → w / ū / ___ u ≠ ʾ (optional):

as-sufahāʾu ʾalā → *ʾas-sufahāw ʾalā*.

3. ◌ → y / ʾa ___ i : (optional):

ʾa ʾinna → *ʾa yinna*.

4. w / y → ʾ / ā ___ ≠

* *du^cāw* → *du^cāʾ*.

* *bināy* → *bināʾ*.

5. w → ʾ / ≠ ___ aw :

* *wawāʾil* → *ʾawāʾil*.

6. w / y → ʾ / ā ___ i

* *qāwil* → *qāʾil*,

* *bāyi^c* → *bāʾi^c*,

* *ʿajāwiz* → *ʿajāʾiz*,

* *ṣaḥāyif* → *ṣaḥāʾif*,

* *wawāwil* → *ʾawāwil* → *ʾawāʾil*,

* *niyāyif* → *niyāʾif*.

However, there are a few exceptions where the glides / w and y / do not become *hamzah* but rather remain unchanged. These are:

ʿāyin (evil eyed),

ʿāwir (having one eye),

qasāwir (lions),

maʿāyish. (way of living),

The *hamzah* is pure when pronounced initially or immediately after a consonant except itself, as in:

ʾaṣṣam (ominous),

al-xabʾa (the hidden thing).

The following are general remarks on the *hamzah*:

1. / ʾ / should not be pronounced as an emphatic sound. The readers of the *Qurʾān* and others should pronounce it carefully especially when it is followed by:

a. / ā / as in ʾātā (to give), and ʾāmīn (so be it)

b. emphatic sounds as in: ʾAllāh (God) ʾaṭ-ṭalāq (divorce)

c. a homorganic sound as in: ʾihdīnā (guide us)

d. sounds articulated contiguously to it / ʿ, ḥ / as in:

ʾaʿṭā (to give),

ʾaḥaṭṭu (I encompassed).¹

2. *Hamzah* is pronounced in different ways; it may be pronounced as *muḥaqqaqah* (true *hamzah*), or it may be pronounced as *musahhalah* (lightened). The lightening of *hamzah* has three degrees:

a. *bayna bayna* (in between). To be pronounced as between pure / ʾ / and the long vowel corresponding to the short vowel that precedes it.

b. changed to the long vowel corresponding to the short vowel that precedes it:

muʾmin → *mūmin* (believer),

biʾr → *bīr* (a well).

¹ See *an-Nashr*, 1 / 216.

c. omitted as in *saʔaltu* → *saltu* (I asked).

3. As regards the *Qurʾānic* readers, some of them including al-Kisāʾī, ʿĀṣim and Ḥamzah pronounce / ʔ / as *muḥaqqaqah*, while others, including Ibn ʿĀmir, and Abū ʿAmr, lighten it.
4. The *Ḥijāzī* dialect tends to lighten the *hamzah*; the *Ḥijāzī* people would say: *sāl*, *wakkadtū*, *tawkidan*, and *al-wikāf* for *ʔisʔal*, *ʔakkadtū taʔkīdan* and *al-ʔikāf* respectively ².
5. "All sounds are *khafīf* (light, i.e. lax) when *sākin* (vowelless), except the hamzah which becomes *thaqīlah* (hard)"³.

B. The Rest of the *Ḥalqī* Sounds:

It is not normal to assimilate *ḥalqī* sounds with each other. However, Sībawayh mentions some cases where assimilation does take place⁴, especially when a sound assimilates to the one that is articulated one stage forward than itself [glottal, pharyngeal, etc.] and vice versa. Examples are:

1. h / ḥ

ʔijbah ḥamalan → *ʔijbaḥ ḥamalan* (face a small sheep).

ʔimdaḥ Hilālan → *ʔimdah Hilālan* (praise Hilāl).

Ibn al-Jazarī does not accept the progressive assimilation of / h / to / ḥ / in the *Qurʾān*. He says: "They assimilate / h / in *Sabbiḥḥu* (glorify him) to / ḥ / to become [Sabbiḥḥu]... This is not allowed by all *qurrāʾ*" ⁵.

² See Blachere, *Tarikh al- adab al- ʿArabi*, 1 / 97.

³ Ibn al-Jazarī, *at-Tamhid fi ʿilm at-tajwid*, 109.

⁴ *al-Kitāb*, 2 / 413.

2. c / h :

$\text{ʔiqṭa}^{\text{c}} \text{hilālan} \longrightarrow \text{ʔiqṭahhilalan}$ (cut Hilāl),

$\text{ʔijbah}^{\text{c}} \text{inabah} \longrightarrow * \text{ʔijba}^{\text{c}} \text{inabah} \longrightarrow \text{ʔajbaḥḥinabah}$
(face a grape),

$\text{bi}^{\text{c}}\text{hu} \longrightarrow \text{biḥḥu}$ (sell it) [$\text{h} / \text{c} \longrightarrow \text{ḥ}$].

3. $\text{c} / \text{ḥ}$:

$\text{ʔimdaḥ}^{\text{c}} \text{Arafah} \longrightarrow \text{ʔimdaḥḥArafah} \longrightarrow * \text{ʔimda}^{\text{c}} \text{Arafah}$
(praise c Arafah).

Dissimilation in these reported examples is much better than assimilation. This may be supported by the agreement among all *qurrāʾ* to read *faṣṣaḥ^canhum* without assimilating $/ \text{ḥ} /$ to $/ \text{c} /$ ⁶. However, Abū c Amr is reported to have read *fa man zuḥziḥa^can* with assimilation as *fa man zuḥzi^cc^can*⁷.

Analyzing these rejected examples in *ḥalqī* sounds ($* \text{h} / \text{ḥ} \longrightarrow \text{c}$), it becomes clear that regressive assimilation is not allowed here while progressive assimilation is. The reason is not because, as Sibawayh says: "The more forward sounds do not assimilate to the more backward sounds"⁸ (among *ḥalqī* sounds). This reason, although it applies in some cases, is not always valid.

Two of the *ḥalqī* sounds are *mufaxxam* (partially emphasized): $/ \text{x} /$ and $/ \text{ḡ} /$. The rest of the sounds are

⁵ *an-Nashr*, 1 / 218.

⁶ *an-Nashr*, 1 / 291.

⁷ *Kitāb at-taysir fi al-qirāʾāt al-ʿashr*, 23.

⁸ *al-Kitāb*, 2 / 413.

muraqqaq (non-emphatic). These sounds are apt to be pronounced with emphasis when occurring adjacent to other emphatic sounds, as in *ʔaḥaṭtu* (I encompassed) and *al-ḥaqq* (the right). However, this is prohibited in the field of *Qirāʔāt*.

II. *Aqṣā al-fam* sounds : / q, k, j / :

The sound / q / assimilates to / k / when pronounced contiguously as in *yakhlūq kum* → [*yakhlukkum*] (he creates you), and even when separated by a short vowel, as in *yunfiq kayfa* → [*yunfikkayfa*] (he spends as ...). In both cases, the / q / must be preceded by a short vowel. The short vowel in between is suppressed before assimilation takes place: *al-idghām al-kabīr*. A suitable form for this may be represented as:

$$q \longrightarrow k / v \longrightarrow \left[\begin{array}{c} \neq \\ + \end{array} \right] k. \text{ (optional)}$$

This kind of assimilation occurs only across morpheme and word-boundaries because / q / and / k / do not combine in the same root.

As for the assimilation of / k / to / q /, it occurs only across morpheme and word-boundaries for the same reason. An example of this type of assimilation is:

ʔimsik quṭnan → [*ʔimsiqquṭnan*] (catch cotton).

Again, the form for this type of assimilation may be represented as:

$$k \longrightarrow q / v \longrightarrow \{ \neq \} q \text{ (optional)}$$

The condition that both / q / and / k / should be

preceded by a short vowel before they may be assimilated to one another is occasioned by the syllabic structure of Arabic; two *sākins* cannot occur contiguously except in pause (as we have already seen in *idghām kabīr* above).

The sound / k / of the feminine singular pronoun / ki / is pronounced by some Arab tribes as / š / . They would say [*minšī*] (from you (f)), [*ʿalayšī*] (on you (f)), and [*jīdšūi*] (your (f) neck) for *minki*, *ʿalayki*, and *jīduki* respectively.⁹ In Arabic Grammar, this is known as *kaškašah*. According to Sībawayh, it was a dialectal usage of *Tamīm* and *Asad*, according to Ibn Durayd, of *Bakr*, according to Ibn Jinnī, of *Rabīʿah*, according to Ibn Fāris, of *Asad*, and according to as-Suyūṭī, of *Rabīʿah* and *Muḍar*¹⁰.

The sound / j / is reported to be assimilated to / š / and / t / . In *idghām kabīr*. The reported examples are:

ʾakhraja šaṭʾahu → [*ʾakhraš šaṭʾahu*] (sends out (seed) its blade),

al-maʿārij taʿruju → [*al-maʿārittaʿruju*] (ways of ascent ... ascend).

/ j / occurs in the *Qurʾān* before seventeen consonants (t, n, b, k, q, h, w, ʿ, f, l, y, ḍ, ḥ, š, r, ʾ); it occurs contiguously with the first seven. / š /, / y /, / k /, and / q / are all close to / j / in their place of articulation. However, there is no report at all of the assimilation of / j / to / y /, / k /, and / q /, in such cases as:

⁹ *Sirr šināʿat al-irāb*, 1 / 206-207.

¹⁰ *Athar ikhtilāf al-lahajāt al-ʿArabiyyah fī an-naḥw*, 546.

ʔakhraja yadahu (he took his hand out),
 yukhrijukum (he expels you),
 ʔakhrij qawmaka (take your people away).

The three sounds (q, k, j) have a secondary sound that is not accepted. Both / q / and / k / may be approximated to / j /. The resulting sound is disapproved of in traditional Arabic. The Arabs call this sound *al-kāf aṣ-ṣammāʔ*.

As for the sound / j /, it may be approximated to / k / or / š /. Both resulting sounds are disapproved of in classical Arabic. When / j / is approximated to / k /, the resulting sound is *al-kāf aṣ-ṣammāʔ* as above. On the other hand, when / j / is pronounced forward of its normal place of articulation, (alveo-palatal), the resulting sound is between actual / j / and / š /; this is also disapproved of.¹¹

III. *Waṣṭ al-fam* sounds (coronals):

A large number of sounds (fourteen) is ascribed to *waṣṭ al-fam* (the center of the mouth). In a discussion of assimilation, it is probably more profitable to group them according to their manner of articulation. They may be articulated as stops, fricatives or sonorants.

1. *al-Ḥurūf an-naṭʿiyyah* (Stops / t, d, ṭ /):

a. / t /:

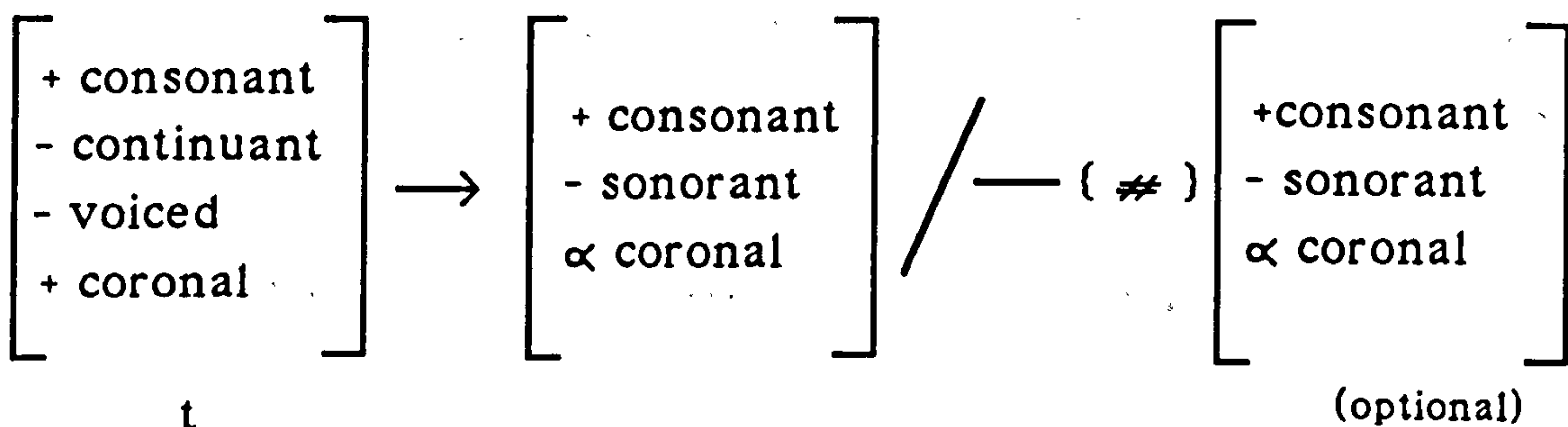
Being a non-sonorant coronal, / t / assimilates only to non-sonorant coronals. It may thus be assimilated to eleven

¹¹ See (= 1.2.2.) above for these disapproved of secondary sounds.

sounds / j, š, d, ṭ, ṣ, S, z, ḍ, ḏ, Ḑ, and ʿ / across word boundaries and in one case within the same word, i. e. the *iftaʿala* form of the verb, in which / t / is changed to / ṭ / or / d / in certain circumstances. Some examples of this type of assimilation are given below:

- t → j : *naḍījat julūduhum* → [*naḍijajjulūduhum*] (their skins are roasted through).
- t → š : *bi ʿarbaʿati šuhadāʾ* → [*bi ʿarbaʿaš šuhadāʾ*] (with four witnesses).
- t → d : * *ʿiztajara* → *ʿizdajara*.
- t → ṭ : * *ʿiṭtaraba* → *ʿiṭṭaraba*.
- t → ṣ : *ḥaṣīrat ṣudūruhum* → [*ḥaṣiraṣ ṣuḍuruhum*] (their hearts restraining them).
- t → s : *nazālat sūratun* → [*nazalassūratun*] (a sura came down).
- t → z : *xabat zidnāhum* → [*xabazzidnāhum*] (... it shows abatement, we shall increase ...).
- t → ḍ : *walʿādiyāti ḍabḥan* → [*walʿādiyāḍḍabḥan*] (by the (steeds) that run, with panting (breath)).
- t → ḏ : *kānat ḏālimatan* → [*kānaḏḏālimatan*] (it was unfair).
- t → Ḑ : *as-sayyiʿāti Ḑālika* → [*as-sayyiʿaḐḐālika*] ((that are good remove) those that are evil ... be that ...).
- t → ʿ : *kaḏḏabat ʿamūd* → [*kaḏḏabaʿʿamūd*] (Thamud does not believe) .

A suitable form for such assimilations may be stated as follows:



The sound / t / occurs in the *Qurʾān* in similar situations before sonorant coronals but none of them is reported as having been assimilated. Some examples are:

al-ʾāyāti laʿallakum (verses ..that you may),

qālat rabbi (she said: Oh my lord),

futiḥat yaʾjūju (Yajuj was opened).

malakat yaminuka (that your right hand gain).

/ t / of the form *iftaʿala* and its derivations must change to / d / or / ṭ /:

1. to / d / when it occurs immediately after / z /, / d /, / ḡ /:

* *Iztajara* \longrightarrow *Izdajara*,

* *Idtaxala* \longrightarrow *Iddaxala*,

* *Iṣṭakara* \longrightarrow *Iḍdakara* / *Iḡḡakara* / *Iddakara*.

2. to / ṭ / when it occurs immediately after *iṭbāq* sounds.

* *Iṣṭabara* \longrightarrow *Iṣṭabara*,

* *Iḍtaraba* \longrightarrow *Iḍṭaraba*,

* *Iṭṭalaʿa* \longrightarrow *Iṭṭalaʿa*,

* *Iḍtalama* \longrightarrow *Iḍṭalama*¹².

¹² See (2. 2. 1.1.2) above.

The only non-coronal sound that / t / changes into is the glottal / h / in the special case where / t / is a singular feminine marker attached to nouns, *tā' at-ta'nīθ al-marbūṭah*, in pause : *Fāṭimatu bintun* → *Fāṭimah*. (F. is a girl) [t (f. m. n) → h in pause].

/ t / is a non-emphatic sound; therefore, it is pronounced non-emphatically even when it is adjacent to emphatic sounds, especially the homorganic / ṭ /, as in *taṭṭā* (to exceed proper bounds).

b. / d /:

Being homorganic to / t /, the sound / d / assimilates to non-sonorant coronals across word boundaries only. Some examples are:

d → j : *laqad jā'akum* → [*laqajjā'akum*] (already came unto you).

d → t : *qad tabayyana* → [*qattabayyana*] (already it becomes clear).

d → š : *qad šaṣafahā* → [*qaššaṣafahā*] (truly hath he inspired her with violent love).

d → ṣ : *wa laqad ṣarrafnā* → [*wa laqaṣṣarafnā*] (we have explained).

d → s : *qad sami'a* → [*qassami'a*] ((God) has already heard).

d → z : *wa laqad zayyannā* → [*wa laqazzayyannā*] (and we have adorned ...).

d → ṭ : *ṭinquḍ ṭāliban* → [*ṭinquṭṭāliban*] (criticize a seeker).

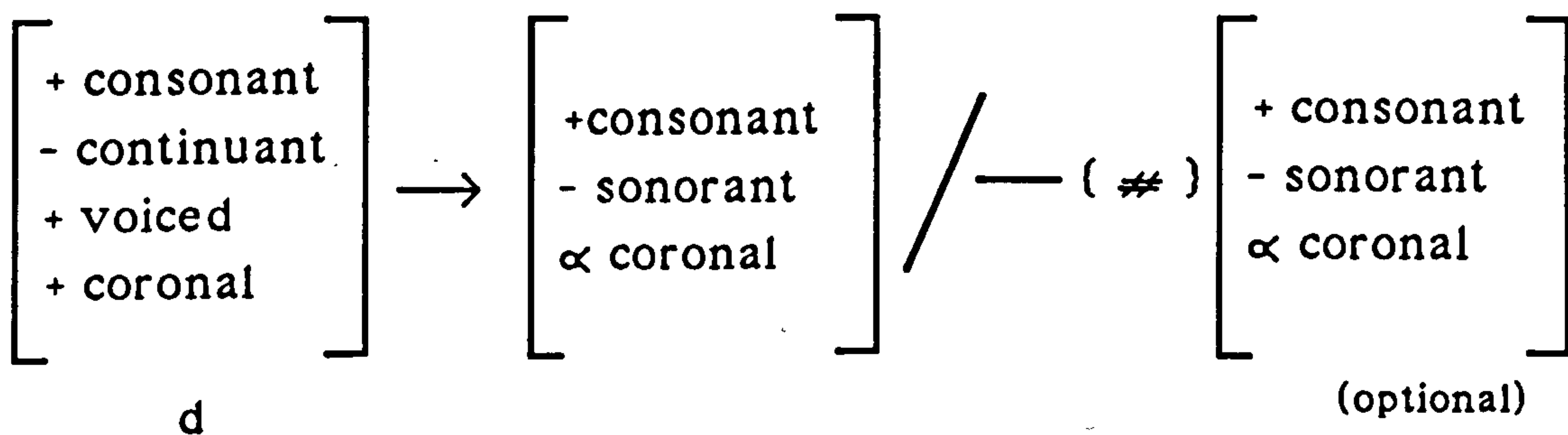
d → ḍ : *qad ḍallu* → [*qaḍḍallu*] (they already go astray).

$d \rightarrow \text{ǧ} : fa\ qad\ \text{ǧ}alama \rightarrow [fa\ qa\text{ǧ}\text{ǧ}alama]$ (he wrongs ...).

$d \rightarrow \text{ǧ} : wa\ la\ qad\ \text{ǧ}ara'nā \rightarrow [wa\ la\ qa\text{ǧ}\text{ǧ}ara'nā]$ (we have made).

$d \rightarrow \text{ə} : yurid\ \text{ə}awāb \rightarrow [yuri\text{ə}\text{ə}awāb]$ (... desires a reward).

This may be represented in the following form:



Similarly to / t /, the sound / d / occurs before the sonorant coronals. However, assimilation does not take place.

C. / ɖ /:

Having the feature of emphaticness, the sound / ɖ / assimilates only to its homorganic alveolar stops / d / and / t /. Sibawayh accepts the assimilation of / ɖ / to / ǧ / also, as in $\text{ʔihbi}\text{ṭ}\ \text{ǧ}āliman \rightarrow [ʔihbi\text{ǧ}\text{ǧ}āliman]$ (come down as unfair). However, except in a few cases, the emphatic sounds do not assimilate to others, and even in these cases assimilation is mostly partial, not complete. This is because stronger sounds generally affect weaker sounds, and not vice versa; exceptionally / ɖ / may assimilate to both / d / and / t /, as in:

$\text{ṭ} \rightarrow d : \text{ʔirbi}\text{ṭ}\ dābbataka \rightarrow [ʔirbiddābbataka]$ (bind your animal).

$\text{ṭ} \rightarrow t : \text{ʔirbi}\text{ṭ}\ taysan \rightarrow [ʔirbittaysan]$ (bind a billy goat).

In fact, the sound / ṭ / does not assimilate completely to either / d / or / t / but only partially. The emphatic feature remains so that / d / and / t / resulting from / ṭ / are pronounced with *tafkīm* (emphaticness). However, Sībawayh mentions both kinds of assimilation, partial and complete, as being possible¹³.

2. *Rikhwah* (fricatives):

a. *Ṣafīr* (sibilants):

Sibilants in Arabic are four, namely / s /, / ṣ /, / z / and / š /; the alternative terms used are whistling consonants, groove fricatives, or groove aspirants. The first three sounds are articulated alveolarly, while the sound / š / is articulated further back, in the alveopalatal position. Their respective manners of articulation may be distinguished from each other by three sets of features:

1. Hissing / hushing :

/ s /, / ṣ / and / z / are described as hissing sibilants, and / š / as a hushing sibilant.

2. Emphatic / non-emphatic :

/ ṣ / is the only emphatic sibilant; the remaining sibilants are non-emphatic.

3. Voiced / voiceless :

The only voiced sibilant is / z /; the rest are all voiceless.

Since the influence of the place of articulation in the phenomenon of assimilation is greater than that of manner of

¹³ *al-Kitāb*, 2 / 418.

articulation, the hissing sibilants will be discussed as one group. The hushing sound / š / will be discussed at a later stage.

A. *al-ḥurūf al-asaliyyah* (hissing sounds) :

As we have seen earlier, the three sounds / s, š, z, / do not occur in the same root. However, they do meet across word-boundaries. In this case, regressive assimilation may take place. A few examples are:

s → z : ʔajlis Zaydan → [ʔajlizzaydan] (have Zayd sit down).

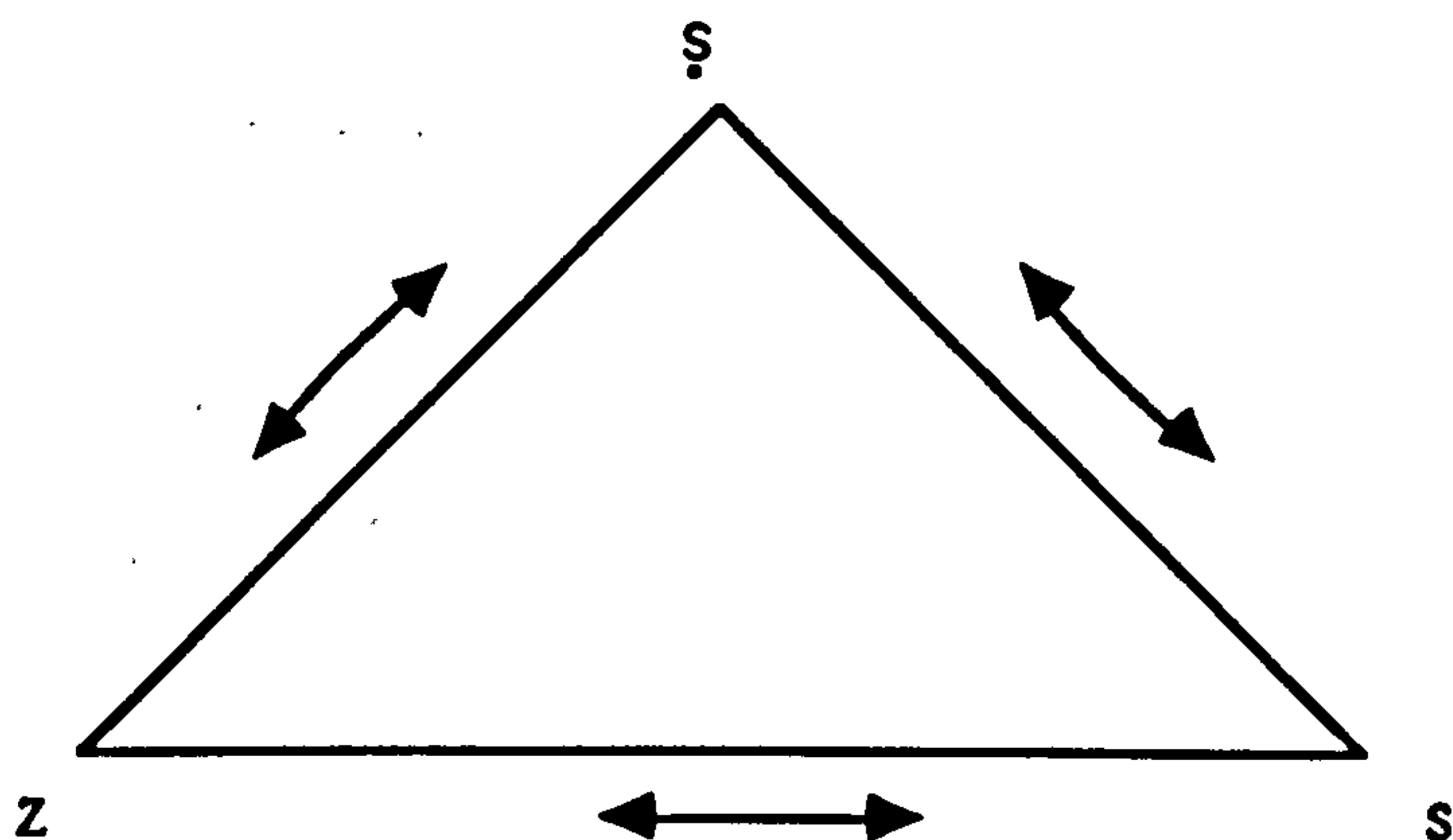
s → š : ʔajlis Šābiran → [ʔajliššābiran] (have Šābir sit down).

z → s : ʔiḡriz sayfaka → [ʔiḡrissayfaka] (stick in your sword).

z → š : ʔawjiz šalātaka → [ʔawjiššalātaka] (make your prayer short).

š → s : ʔifḥaš Sālīman [ʔifḥassālīman] (examine Sālīm).

š → z : ʔifḥaš Zaradah [ʔifḥazzaradah] (examine Zaradah).



Having the emphatic feature, the sound / š / is stronger than both / s / and / z /. Even so, it assimilates completely to / z /, as in the example, given by Sibawayh: ʔifḥaš

*zaradah*¹⁴. It assimilates to it partially, becoming *ṣād mušammāh* (approximated to / z /) as in the word *aṣdaq* (more truthful) → [aṣdaq]. This partial assimilation may also apply to / ṣ / with / s /, as in the example: *ʔifḥaṣ Sālīman*.

The sound / s / may often be pronounced as a pure / ṣ / or as *ṣād mušammāh* (/ ṣ / pronounced between pure / ṣ / and / z /) when occurring before *mustaʿli* (emphatic/velarized) sounds within the same word¹⁵. Some examples are:

sirāt → *ṣirāt* / *ṣirāt* (a way),

yabsuṭu → *yabṣuṭu* / *yabṣuṭu* (to spread),

saqr → *ṣaqr* / *ṣaqr* (a falcon),

ʔasbaḡa → *ʔaṣbaḡa* / *ʔaṣbaḡa* (to give),

saxxara → *ṣaxxara* (to subjugate).

The remaining emphatic sounds / ṣ /, / ḍ /, / ẓ / do not occur with / s / in the same root. al-Baṭalyawsī adds / ʿ / as a condition for changing / s / to / ṣ /, such as: *misdāʿ* → *miṣdāʿ* (split)¹⁶.

However, if the original consonant in the root is / ṣ /, it does not change to / s / because the emphatic nature of / ṣ / cause it to dominate / s /. Thus *ṣaxr* (stone) is never pronounced (* *saxr*).¹⁷

For the changing of / s / to / ṣ /, the conditioning and

¹⁴ *al-Kitāb*, 2 / 418.

¹⁵ See *al-Khaṣāʾiṣ*, 2 / 143, *Sirr ṣināʿat al-iʿrāb*, 1 / 220, *al-Muzhir*, 1 / 469, *al-Hujjah lil-qurrāʾ as-sabʿah*, 49-50, *Durūs fi al-lughah al-ʿArabiyyah*, 73, etc.

¹⁶ *al-Muzhir*, 1 / 467.

¹⁷ *Ibid*.

assimilated sounds need not be immediately adjacent, as in the following examples :

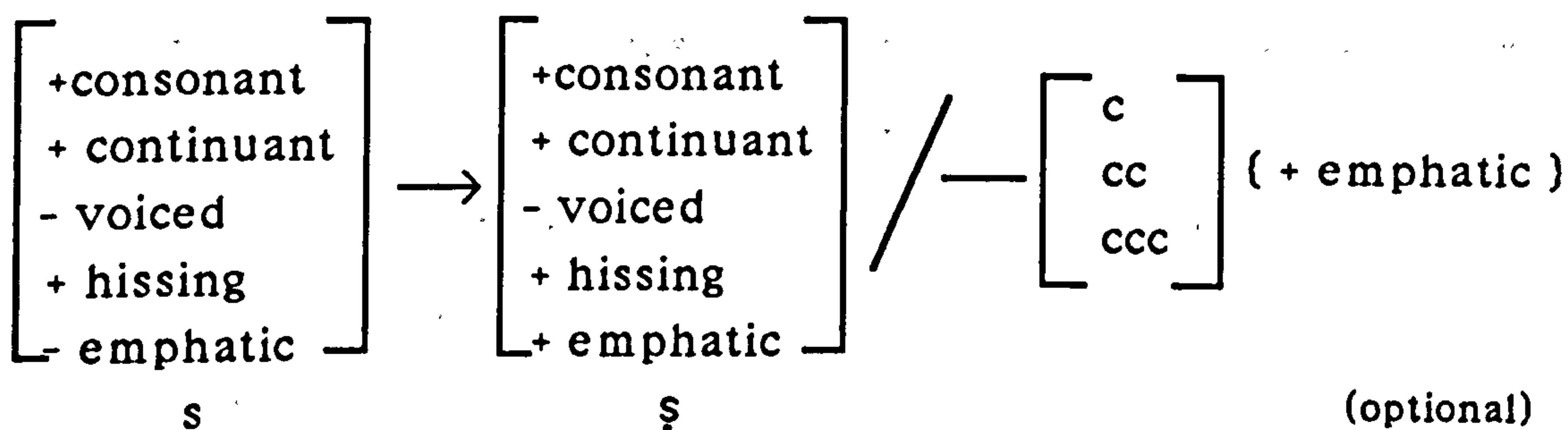
sāṭiʿ / ṣāṭiʿ (shining),

ʾasbaḡa / ʾaṣbaḡa (to give),

masālix / maṣālix (slaughter-houses).

However, the conditioning sounds should occur after the assimilated one. If not, the assimilation is not likely to happen. The word *qasat* (became hard) for example is not pronounced [* qāṣat]. This result agrees with the phonetic rule of Arabic that the influence of a following sound on the preceding one is greater than in the opposite case.

A suitable rule for such a phenomenon may be as follows:



On the other hand, the sound / *\textcircled{S}* / is pronounced as / *\textcircled{S}* /, a sound between pure / *\textcircled{S}* / and / *z* /, by assimilating / *\textcircled{S}* / to the voiced / *z* /. This is conditioned in most cases by being followed by / *d* / as in the word *maṣḍar* → *maṣdar*. This is called *aṣ-ṣād al-muṣammāh* and is regarded as an accepted secondary sound in Arabic.¹⁸ It occurs in the reading of Abū ʿAmr and Ḥamzah. Some Arab dialects change it into pure / *z* /. These are said to be: ʿUḡrah, Kaʿb, Banū al-Qays, Ṭayʾ, and

¹⁸ See (1.2.1.1. - 4) above.

Kalb.¹⁹ Ibn Jinnī specifies the environment in which *Kalb* pronounce / s / as / z / as its occurrence before / q / only as in: *ṣaqr* → *zaqr*²⁰.

B. Hushing:

The feature of *tafašši* (spreading, i.e. hushing) makes the sound / š / a strong sound which generally protects it from acquiring other features or being assimilated to other sounds. The only reported assimilation in this case is the reading of Abū ʿAmr of *al-ʿarši sabīlā* as [al-ʿarssabīlā]. None of the *qurrāʾ* reads it with assimilation except him, and none, including himself, assimilates / š / to other sounds. However, when / š / occurs *sākin* (vowelless) before / d /, it is sometimes pronounced as between / š / and / j / [ʒ], an accepted secondary sound in Arabic (see 1.2.1.1.3 above). Thus *ʾašdaq* may be pronounced as [ʾaʒdaq].

The sound / š / is one of five sounds that do not completely assimilate to others, although the others may assimilate to them. The remaining four sounds are / ḍ /, / r /, / f /, and / m /. Among the sounds to which / š / does not assimilate, although they assimilate to it, are / ʾ /, / ʿ /, / ʔ /, / j /, and / d /, as in:

ʾaxraja šaṭʾahu → [ʾaxraššaṭʾahu] ((a seed) which sends forth its blade)

qad šaḡafahā → [qaššaxafahā] (Truly hath he inspired her

¹⁹ Yahyā Ṣālih, *Athar ikhtilāf al-lahjāt al-ʿArabiyyah fi an-naḥw*, 528-530.

²⁰ *Sirr ṣināʿat al-irāb*, 1 / 196.

with violent love).

b. *al-Ḥurūf al-laṯawīyyah* (interdentals / ḥ, ṯ, ṯ /):

Arabic has three interdental sounds which are:

1. voiceless non-emphatic interdental fricative: ṯ
2. Voiced non-emphatic interdental fricative: ḥ
3. Voiced emphatic interdental fricative: ṯ̣

A regressive assimilation is optionally applied whenever one of the three interdental sounds follows another. Here are some examples:

ṯ → ḥ : *ʔib ṯaṯ ḥālika* → [*ʔib ṯaḥḥālika*] (send that).

ṯ → ṯ̣ : *ʔib ṯaṯ ṯāliman* → [*ʔib ṯaṯ̣ṯāliman*] (send an unjust man).

ḥ → ṯ : *xuḥ ṯawbaka* → [*xuṯṯawbaka*] (take your clothes).

ḥ → ṯ̣ : *xuḥ ṯāliman* → [*xuṯ̣ṯāliman*] (take an unjust man).

ṯ̣ → ḥ : *ʔiḥfaṯ̣ ḥālika* → [*ʔiḥfḥḥālika*] (keep that).

ṯ̣ → ṯ : *ʔiḥfaṯ̣ ṯawbaka* → [*ʔiḥfaṯṯawbaka*] (keep your clothes).

The most interesting coincidence within this group of sounds is that they all assimilate to non-sonorant coronals optionally whenever these sounds are at the end of the word and a non-sonorant coronal sound follows at the beginning of the next word. The following are examples of such assimilations:

ṯ → t : *labiṯum* → [*labittum*] (you stayed).

ṯ → d : *ʔib ḥaṯ dūnaka* → [*ʔib ḥaddūnaka*] (look below you).

ṯ → ṭ : *ʔib ḥaṯ ṭalabaka* → [*ʔib ḥaṭṭalabaka*] (look at your

request).

ə → j : *lam yalbaə jālisan* → [*lam yalbajjālisan*] (he is still sitting).

ə → ɖ : *ʔib^caə ɖayfaka* → [*ʔib^caɖɖayfaka*] (send your guest).

ə → s : *lam yalbaə sākitan* → [*lam yalbassākitan*] (he is still silent).

ə → š : *ʔib^caə šayxan* [*ʔib^caššayxan*] (send an old man).

ə → ʃ : *ʔib^caə ʃābiran* → [*ʔib^caʃʃābiran*] (send ʃābir).

ə → z : *ʔib^caə Zaydan* → [*ʔib^cazzaydan*] (send Zayd).

$$\left[\begin{array}{l} + \text{coronal} \\ + \text{interior} \\ - \text{sonorant} \\ - \text{voiced} \end{array} \right] \xrightarrow{\text{ə}} \left[\begin{array}{l} \propto \text{coronal} \\ - \text{sonorant} \end{array} \right] / \text{---} (\text{---}) \left[\begin{array}{l} \propto \text{coronal} \\ - \text{sonorant} \end{array} \right] \quad \text{(optional)}$$

ǰ → j : *ʔiǰ ja^cala* → [*ʔijj^cala*] (when he made).

ǰ → t : *ʔittaxaǰtu* → [*ʔittaxattu*] (... (would that) I had taken..).

ǰ → d : *ʔiǰdakara* → [*ʔiddakara*] (he remembered).

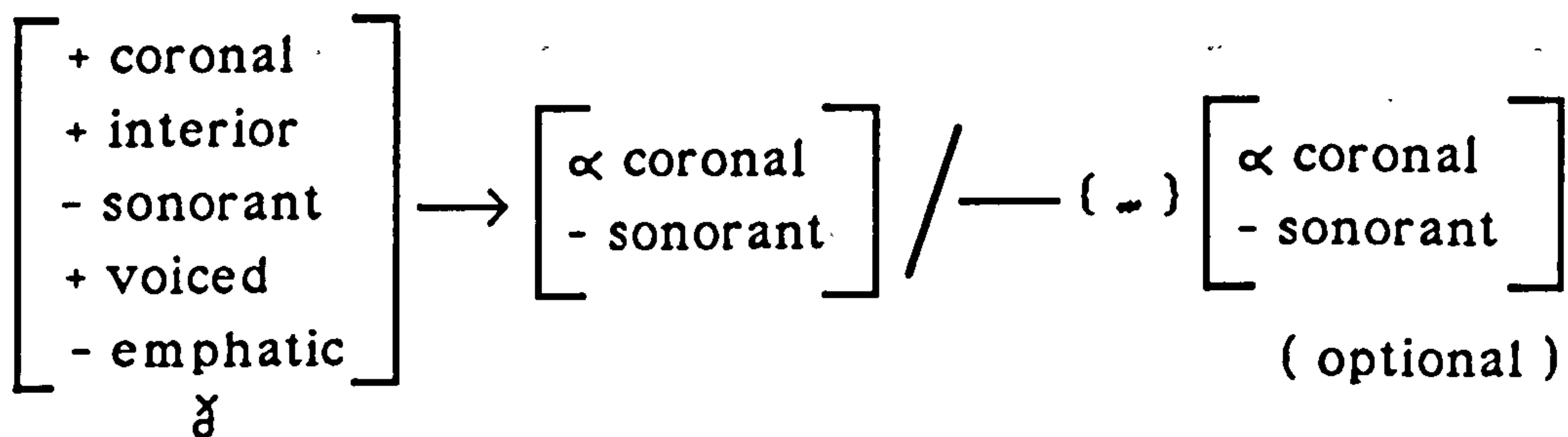
ǰ → ɬ : *xuǰ ɬayran* → [*xuɬɬayran*] (take a bird).

ǰ → š : *xuǰ šayʔan* → [*xuššayʔan*] (take a thing).

ǰ → s : *muǰ sā^cah* → [*mussā^cah*] (an hour ago).

ǰ → ʃ : *xuǰ ʃābiran* → [*xuʃʃābiran*] (take Sabir).

ǰ → z : *xuǰ Zaydan* → [*xuzzaydan*] (take Zayd).



ḫ → t : ʔawa^caḫta → [ʔawa^catta] (do you preach).

ḫ → d : ʔiḥfaḫ dīnaka → [ʔiḥfaddīnaka] (keep your religion).

ḫ → ṭ : ʔiḥfaḫ ṭarīqan → [ʔiḥfaṭṭarīqan] (keep a way).

ḫ → ḍ : ʔiḥfaḫ ḍayfaka → [ʔiḥfaḍḍayfaka] (keep your guest).

ḫ → š : ʔiḥfaḫ šayxan → [ʔiḥfaššayxan] (keep an old man).

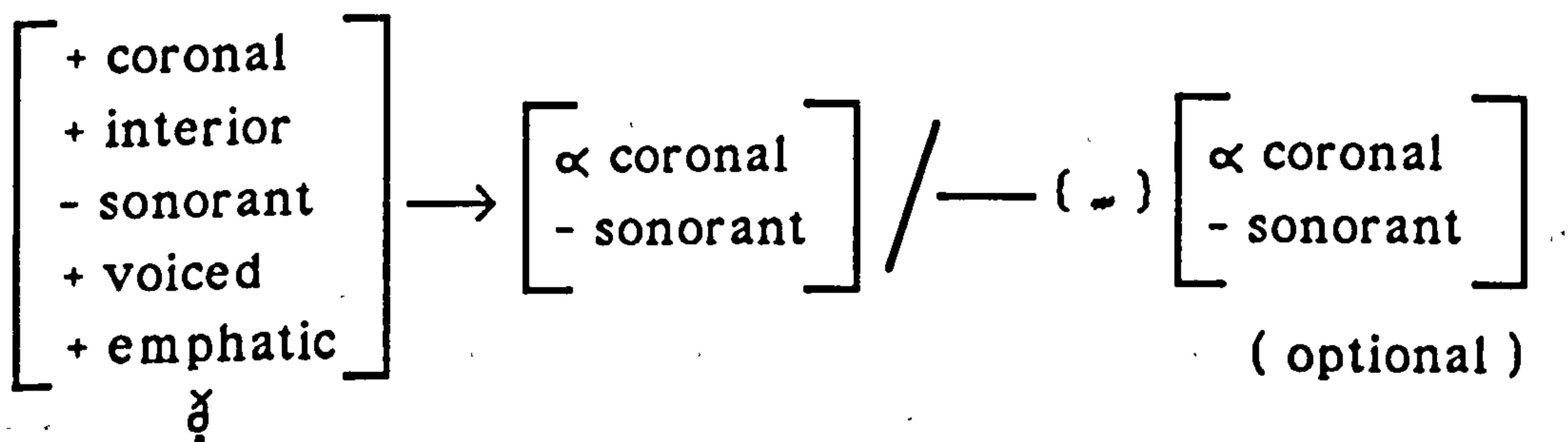
ḫ → s : ʔiḥfaḫ Sālīman → [ʔiḥfassālīman] (keep Sālīm).

ḫ → ṣ̌ : ʔiḥfaḫ šābiran → [ʔiḥfaššābiran] (keep šābir).

ḫ → z : ʔiḥfaḫ Zaydan → [ʔiḥfazzaydan] (keep Zayd).

ḫ → j : ʔiḥfaḫ jāraka → [ʔiḥfajjāraka] (keep your neighbor).

However, the feature of *isti^clā^ʔ* (emphaticness) is optionally retained when assimilating / ḫ / to non-emphatic sounds. Indeed it is recommended in some cases, as in example ʔawa^caḫta above.



A suitable rule to cover this type of assimilation of interdental sounds may be represented as:

$$\left[\begin{array}{l} + \text{ interior} \\ + \text{ coronal} \\ \text{e, ʕ, ʔ} \end{array} \right] \rightarrow \left[\begin{array}{l} \propto \text{ coronal} \\ - \text{ sonorant} \end{array} \right] / \text{---} (\text{---}) \left[\begin{array}{l} \propto \text{ coronal} \\ - \text{ sonorant} \end{array} \right] \\ \text{(optional)}$$

C. The sound / ɖ /:

The sound / ɖ / is one of the most difficult sounds in Arabic. It contains two strong features : *iṭbāq* and *istiṭālah* (elongation). This is why it is considered as one of the sounds that do not assimilate to others although it does act as a conditioning sound. / ɖ / is a homorganic of / s / and / ʂ / and / z /, although it does not assimilate to any of them.

There has long been some uncertainty, even in the early period, concerning the precise distinction between / ʕ / and / ɖ /; however, / ɖ / does not assimilate to what / ʕ / assimilates to. This is because the feature of elongation prevents it acquiring the features of other sounds.

Many Arabic linguists have devoted works in both prose and verse, to the confusion of / ɖ / and / ʕ / in pronunciation, writing, or both. M. al-Muaibid lists eighty such works, of which some have been printed, some are still in manuscript, and a few are not known to be extant.²¹

The sound / ʂ / shares with / ɖ / the feature of *tafašši* (spreading), as some linguists believe²². This sharing explains

²¹ " Kutub aḍ-ḍād waḍ-ḍā' ind ad-dārisin al-ʿArab", *Majallat maḥad al-makhṭūṭāt al-ʿArabiyyah*, Kuwait ,30, 2, July , Dec. 1986 , 575- 634.

²² *Ibrāz al-maʿāni min ḥirz al-ʿamāni*, 753. In fact, *istiṭālah*, a feature associated with / ɖ /, and *tafašši*, a feature associated with / ʂ /, are close to one another.

why / ɖ / assimilates only to / š / in Abū ʿAmr's reading of *liba^cɖ ša^ʔnihim* as [liba^cšša^ʔnihim] (for some of their activities).

The word *iḍṭaja^ca* (to lie down or sleep) is reported as having been pronounced, much less commonly, as *iṭṭaja^ca* with / ɖ / assimilating to / ṭ /. Ibn Jinnī regards this as an exception²³. In fact, it is not an exception because it also occurs in Ibn Muḥayyis's reading *ʕumma ʔaṭṭarruhu* (then I force him...) ²⁴ The same word *iḍṭaja^ca* is reported to have been pronounced exceptionally, as *ilṭaja^ca* with / ɖ / changing into / l /. This does not occur in similar words such as:

muḍṭarib → [* *mulṭarib*] (confused),

muḍṭajir → [* *mulṭajir*] (worried), and

muḍṭabiṭ → [* *mulṭabiṭ*] (careful).

3. *Bayna shadīdah wa rikhwah* (sonorants):

Arabic has three sonorant consonants, / l /, / n / and / r /. They are among the six *ṣalāqah* sounds, which have been described as the most frequently used in Arabic. They are all articulated homorganically on the alveolar ridge. / n / is a nasal sonorant or resonant, / l / is a lateral sonorant, and / r / is a trill sonorant. Both / l / and / r / are liquids.

a. / n /:

This sound is one of those that act as both assimilating and conditioning sounds. For details of the assimilation of this sound

²³ *Sirr ṣināʿat al-irāb*, 1 / 214.

²⁴ *al-Muḥtasab*, 1 / 106.

to others, see [2.2.2.3] above.

b. / l /:

The Arabic linguists and the scholars of *tajwīd* have discussed the various types of the sound / l / in different positions. They discuss separately the / l / of the definite article from / l / that is found as the final consonant in words such as *hal*, *bal*, and *i^cmal*, and so on. The / l / of the definite article is the same phonetically as the other / l / but phonologically different.

The / l / of the definite article assimilates to thirteen consonants that necessarily share with it the feature of coronality. (See 2.2.2.2 above)

The other / l / assimilates to all homorganic consonants except / ʂ / and / d /. It also assimilates to all interdental sounds articulated contiguously forward of its place of articulation, but not to any sounds articulated backward of its place of articulation, including / ʃ /. These types of assimilation are optional and not as in the case of the / l / of the definite article in spite of the similarity of its position particularly with the / l / of *hal* and *bal*. / l / does occur before both sounds / ʂ / and / d / in the *Qurʾān* across word boundaries, both contiguously and non-contiguously. Some examples are:

qul ʂadaqa Aļļāh (say Allah is right),

wa ya^cmal ʂāliḥan (... and work righteousness ...),

na^cmal ʂāliḥan (we work righteousness ...),

rabbanā wa taqabbal du^cāʾ (Our Lord, accept our prayer),

wa qatala Dāwūdū Jālūtā (and Dāwūd killed Jālūt), and

ʔan yubaddila dīnakum (he may change your religion).

In none of these examples, nor in any others, is assimilation reported as occurring.

The assimilation of / l / to sounds that are homorganic to it and to interdentals occurs across word boundaries, but not within the same word. Some examples of such assimilation are:

ṭ : *bal ṭabaʿa* → [baṭṭabaʿa] (nay, (God) hath set the seal ...).

s : *bal sawwalat* → [bassawwalat] (nay, but your minds have made up a tale ...).

ḍ : *bal ḍallū* → [baḍḍallū] (yet they stray).

r : *bal rafaʿahu* → [barrafaʿahu] (yet (Allah) has raised him up).

n : *hal nadullukum* → [hannadullukum] (shall we point out to you).

ṣ : *bal ṣanantum* → [baṣṣanantum] (yet you think).

ḏ : *yafʿal ḏālika* → [yafʿaḏḏālika] (let him do that).

ə : *hal əuwwiba* → [haəəuwwiba] (will not (the unbelievers) have been paid back ...).

z : *bal zayyana* → [bazzayyana] (... their pretence seems pleasing ...).

The assimilation of / l / to / r / may occur whenever / l / is preceded by a short or a long vowel, except when preceded by a long vowel and followed by a *fatḥah* / a / marking *naṣb*. Here are some examples :

1. *ʔanzala rabbukum* → [ʔanzarrabbukum] (... that your lord has revealed ...),

2. *rusulu rabbika* → [rusurrabbika] (we are messengers from

your lord),

3. *qāla rabbunā* → [*qārrabbanā*] (he said: " our lord ... "),
4. *yaqūlu rabbanā* → [*yaqūrrabbanā*] (that they say: "our lord (is God)"),
5. *sabīli rabbika* → [*sabīrrabbika*] (the path of your lord),
6. *subula rabbika* → [*suburrabbika*] (the paths of your lord),
7. *qul rabbī* → [*qurrabbī*] (say: " my lord").
8. *fa yaqūla rabbī* → * [*fa yaqūrrabbī*] (and he should say, O my lord ! ...), and *rasūla rabbihi* → * [*rasūrrabbihi*] (the messenger of their lord)

Compare these environments:

1. *a + l + a* ≠ *r* → *arr*
2. *u + l + u* ≠ *r* → *urr*
3. *ā + l + a* ≠ *r* → *ārr*
4. *ū + l + u* ≠ *r* → *ūrr*
5. *ī + l + i* ≠ *r* → *irr*
6. *u + l + a* ≠ *r* → *urr*
7. *u + l* ≠ *r* → *urr*
8. *ū + l + a* ≠ *r* → * *ūrr*

A question that may be raised is why Abū ʿAmr should differentiate between the eighth example and the rest, assimilating / l / to / r / in all except this one.

The answer to such a question is not easy. However, the following points may provide some hints.

1. In all of the examples except ≠ 7, the assimilation is in the form of *al-idghām al-kabīr*, which involves vowel deletion.

2. Deletion of the final vowel should only occur when there is no danger of ambiguity in the meaning of the sentence. Therefore, the *naṣb* marker will perhaps tend to be retained as having more necessity for grammatical discrimination than the other endings. On the other hand, no. 6 involves the deletion of a *naṣb* marker.

C. / r /:

The sound / r / is one of the sounds that do not assimilate to others, although it does act as a conditioning sound. To Sībawayh, this assimilation does not occur even with its homorganic sonorants / l / and / n /, on account of its being *mukarrarah* (a trill) ²⁵. However, Abū ʿAmr in his reading assimilates / r / to / l / in both *al-idghām aṣ-ṣaghīr*²⁶ (contiguous assimilation) and *al-idghām al-kabīr*²⁷ (non-contiguous assimilation). Some examples of his reading are:

yaḡfir lakum → [*yaḡfillakum*] (He will forgive you ...),

ʾiṣkur lī → [*ʾiškullī*] (show gratitude to me),

ʾaṭharu lakum → [*ʾaṭhallakum*] ((they are) purer for you),

and

lī yaḡfira laka → [*lī yaḡfillaka*] (that God may forgive you).

If the sound / r / occurs after a short or a long vowel and is followed by / a / which is not acting as a *naṣb* marker, Abū ʿAmr assimilates / r / to / l /, in the same way as / l / to / r /. Some examples are:

²⁵ *al-Kitāb*, 2 / 412.

²⁶ *an-Naṣhr*, 2 / 12-13.

²⁷ *an-Naṣhr*, 1 / 292, *Kitāb at-taysir*, 27.

1. *sakhkhara lanā* → [*sakhkhallanā*] ((who) has subjected these to our use ...),
2. *li yaghfira lanā* → [*li yaghfillanā*] (may he forgive us ...),
3. *al-fujjāri lafī Sijjīn* → [*al-fujjāllafī Sijjīn*] (surely the record of the wicked is in Sijjīn),
4. *wal-ḥamīra li tarkabūhā* → * [*wal-ḥamīlli tarkabūhā*] (...and donkeys for you to ride), and
5. *ʔinna al-ʔabrāra lafī naʕīm* → * [*ʔinna l-ʔabrāllafī naʕīm*] (truly the righteous will be in bliss).

IV. *Shafawiyyah* (labials):

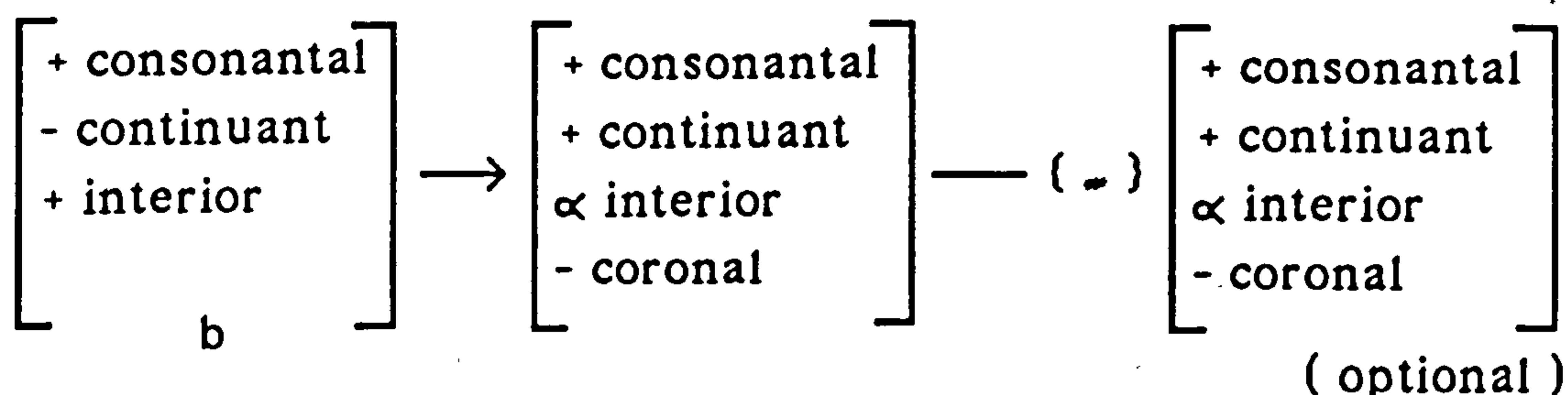
Labial consonants in Arabic are three: two bilabials and one labiodental. This group of sounds does not have assimilation in common. In fact, two of them are sounds that do not assimilate to others although they do act as conditioning sounds. These two are / m / and / f /. However, it is reported that al-Kisāʔi read *nakhsif bihim* (we could cause the earth to swallow them), assimilating / f / to / b /; all other readers however, read it without assimilation.

However, *ikhfāʔ* (a partial assimilation) is applied to the sound / m / occurring before / b / — / m / does not occur vowelless before / b / in the same root —, as in *yaʕtaṣim billāhi* (... holds firmly to Allah). The feature of nasality remains. On the other hand, when occurring before other sounds, dissimilation is applied. But again, it is reported that al-Kisāʔi assimilated / m / completely.

The sound / b / assimilates only to two front sounds, namely / m / and / f / such as *ʔirkab maʕanā* →

[ʔirkammaʕanā] (ride with us), and ʔaw yaḡlib fa sawfā →
[ʔaw yaghliffasawfa] (..... or gets victory — soon shall (we)).

A suitable form for the representation is:



Qalqalah always occurs when the sound / b / is *sākin* (vowelless); otherwise, the secondary rejected sound would result ²⁸.

When / b / occurs adjacent to emphatic sounds, as in *baṣal* (onion), *baṭal* (hero) and *baxila* (to be stingy); it may be pronounced with some emphaticness by some people; however, this is not accepted. When it occurs initially, as in *būra* (pore)²⁹, and before / t /, it may be pronounced with some voicedlessness by some people; however, this is not accepted either.

V. General remarks:

We have established so far that the behavior of different sounds, with regard to assimilation, is not the same. Some sounds act as both assimilating and conditioning. Some do not assimilate to others although they do act as conditioning sounds. Some assimilating sounds assimilate to more sounds than do others. Some assimilating sounds assimilate to sounds articulated

²⁸ See (1.2.2. 8 above).

²⁹ *Ibid.*

backward of their place of articulation, but they do not assimilate to those articulated forward of their place of articulation.

Concerning these differences in the behavior of different sounds, we shall here consider the views of the early Arabic linguists.

1. Sībawayh makes some statements concerning the fact that *famawī* sounds assimilate more readily than do *ḥalqī* sounds.

a. "*mā kāna ʔaqraba ʔilā ḥurūfi al-fam kāna ʔaqwā ʕalā al-idghām*"³⁰ (Sounds closer to the mouth are more inclined to assimilate),

b. "*ʔaṣlu al-idghāmi li ḥurūfi al-fami li ʔannahā ʔaktharu*"³¹ (Assimilation originates with the oral sounds because they are greater in number), and

c. "*lam takun ḥurūfu al-ḥalqi aṣlan lil-idghāmī*"³² (Assimilation does not originate with throat sounds).

How accurate are these statements?

It is clear that the *famawī* sounds are greater in number and assimilate more frequently than the *ḥalqī* sounds. The statistics are as follows:

a. Only 6 consonants out of 26 are *ḥalqī*, and only 7 cases of assimilation out of the total number of 98 occur among the *ḥalqī* sounds;

b. 17 consonants out of 26 are *famawī*, and 89 cases of

³⁰ *al-Kitāb*, 2 / 412.

³¹ *al-Kitāb*, 2 / 415.

³² *al-Kitāb*, 2 / 413.

assimilation out of the total number of 98 occur among the *famawī* sounds, ³³

- c. 3 consonants out of 26 are *shafawī*, and 2 cases of assimilation out of the total number of 98 occur among the *shafawī* sounds.

Sībawayh's statements appear quite consistent with those statistics.

2. Regarding the direction of assimilation and the place of articulation of assimilated and conditioning sounds:

- a. The predominant direction of complete assimilation is regressive, which seems to support Sībawayh's statement: "*ʾaṣlu al-idghāmi ʾan yudghama al-awwalu fī al-ʾākhar*"³⁴ (Basic assimilation is that of the first to the second) .
- b. A sound may assimilate to homorganic sounds, sounds articulated forward of it, or sounds articulated backward of it.

From the material that we have examined, it appears that: In 17 cases out of a total of 98, the direction of assimilation is forward (←).

In 35 cases out of a total of 98, the direction of assimilation is backward (→)

In 42 cases out of a total of 98, assimilation is homorganical.

This result contradicts Sībawayh's statement that: "*al-aqrabu ʾilā al-fami lā yudghamu fī allaḏī qablahu*"³⁵. (a front

³³ The *ikhfāʾ* (partial assimilation) of / n / is not counted here.

³⁴ *al-Kitāb*, 2 / 421.

³⁵ *al-Kitāb*, 2 / 413.

sound does not assimilate to one articulated backward of it). An example of sounds not assimilating to those articulated backward of themselves is:

$h \longrightarrow \text{ḥ}$ but not $* \text{ḥ} \longrightarrow h$.

The result, showing that assimilation is greater between homorganic sounds, supports ad-Dānī's statement: "*wa kullamā taqārabat al-makhāriju wa tadānat kāna al-idghām u ʔaqwā*"³⁶ (The closer the places of articulation, the stronger the assimilation).

Again, it is clear that back *famawī* sounds (*aqṣā al-lisān*) do not assimilate to *ḥalqī* sounds at all. Sībawayh says: "*ḥurūfu al-lisāni lā tudghamu fī ḥurūfi al-ḥalqi*"³⁷ (Back [tongue] sounds do not assimilate to *ḥalqī* sounds).

3. According to ad-Dānī³⁸, the sounds that do not accept assimilation to others are eight in number, namely *s, ṣ, š, ḍ, r, f, m*, and *w*. He probably meant that these sounds do not commonly accept assimilation, since, as we have seen earlier,³⁹ some examples are reported.

In fact, it is not easy to give the reason behind the behavior of certain sounds with regard to assimilation. The principle of phonological strength, that stronger sounds are not affected by weaker ones, provides an explanation in some cases.

"Strong" features are plosiveness, voicedness, *istiʿlāʔ*

36 *Kitāb al-idghām*, folio 6.

37 *al-Kitāb*, 2 / 415.

38 *Kitāb al-idghām*, folio 7.

39 Sībawayh mentions only four of them, namely - *r, š, f*, and *m*-. *al-Kitāb*, 2 / 412.

(velarisation, i.e. emphaticness), *tafaššī* (spreading), *istiṭālah* (lengthening), and *qalqalah*. The opposites of these features are continuousness, voicelessness, *istifāl* (non-emphaticness), non-*tafaššī*, non-*istiṭālah*, and non-*qalqalah* respectively.

Phonological strength, however, does not always apply in assimilation. For instance, the sound / ṭ / is the strongest sound among the emphatic sounds, having all the strong features. Despite this, it does assimilate to other sounds, as well as being a conditioning sound. On the other hand, the sounds / s / and / š /, for example, although weaker than / ṭ /, have nonetheless been listed among sounds that do not accept assimilation to others.

It is true that the features *tafaššī* (spreading), *takrīr* (trillity), and *istiṭālah* (lengthening) of / š /, / r / and / ḍ / respectively, provide good protection for these sounds against the acquisition of the features of others.

Another explanation may be the "difficulty" of certain sounds that tends to give them power over others. / ḍ / for example, is described as a "difficult" sound.

4. In comparing the influence of the place and the manner of articulation on assimilation, it is clear that the influence of the former is greater than that of the latter. Sounds that assimilate to each other may be articulated homorganically or contiguously. It is less common for non-contiguously articulated sounds to assimilate. However, the assimilation of the definite article and the assimilation of final *sākin* / n / are exceptions to this.

However, the influence of the manner of articulation is greater than that of the place of articulation in preventing assimilation. One reason for this is that no two sounds are the same in all features, although they may share the same place of articulation.

It is noteworthy that, of the 98 instances of assimilation referred to, most of which are taken from *Qurʾānic* examples in works on *qirāʾāt*, 68 occur with six sounds only, namely t, d, ʔ, ǧ, ʕ, and l. Each of the first five assimilates to eleven other consonants, and / l / assimilates to thirteen consonants.

Why does this group of sounds assimilate to more sounds than others ?

It is difficult to categorize them as one group since they have no distinguishing features common to all of them. However, a fairly obvious explanation may be offered for the frequency of some of them:

Four of the sounds occur frequently in a final position, with *sukūn*, in Arabic:

1. / t / as a *tāʾ at-taʾnīʔ* (the feminine marker / t /) in the 3rd person singular of the *māḍī* of the verb.
2. / d / in the particle *qad* (of different meanings).
3. / ǧ / in the conjunction *ʔiǧ* (since, when).
4. / l / in the particles *hal* (interrogative) and *bal* (no, rather).

/ l / as an element in the definite article, of course, accounts for a great deal of its frequency, in any case.

Some of these, notably *qad*, *ʔiǧ*, *hal*, and *bal* occur with

particular frequency in the *Qurʾān*.

It is difficult to provide an explanation for the frequency of assimilation of the remaining two sounds / ʕ /, and / ʔ /.

In fact it is strange for the sound / ʔ / to assimilate at all, since it has the feature of emphaticness. The fact that it does assimilate runs counter to the tendency in behavior of emphatic sounds noted previously.

5. The behavior of Arabic sounds with regard to assimilation is unlike that of English even within the same phonetic environment. For example, the alveolar stops in Arabic / t /, / d / and / ṭ / do not assimilate to non-coronal stop sounds [d / t / ṭ * → b / k] while on the other hand, the English / d / and / t / assimilate in rapid speech to labial / b / and velars / k / and / g / as in:

Good-bye → Goob-bye

Good boy → Goob-boy

Right corner → Righk-corner⁴⁰.

6. *Istiʿlāʾ*: (raising, velarisation, i.e. pharyngealisation)

Istiʿlāʾ sounds are / ʕ /, / ɖ /, / ṭ /, / ʔ /, / q /, / x /, and / ʁ /. The first four are called *iṭbāq* sounds.

The feature of *istiʿlāʾ* is a strong one that influences the neighboring sounds. As an example, the vowel / a / and its counterpart long vowel / ā / may be pronounced as *mufakhkham* / ɔ / and / ɔ̃ /, when articulated adjacent to

⁴⁰ See C.J. Bailey "A possible Explanation for an Assimilation Curiosity", *Working Papers in Linguistics*. University of Hawaii, 1970, p.187.

emphatic sounds as in the word / *ṣalāt* / (prayer) → [ṣaɫɫ].

The strength of the emphatic sounds decreases in the following progression: ṭ, ḍ, ṣ, ṣ̣, q, ʁ, and x ⁴¹. The first four, which are called *muṭbaqah*, have complete emphaticness, while the remaining three have only partial emphaticness. On the other hand, all *mustafil* (lowered) sounds are non-emphatic, except for / l / and / r / which are emphasized sometimes in certain circumstances.

The feature of emphaticness is a distinguishing one especially in the *Iṭbāq* consonants where a non-emphatic counterpart is found for three out of four.

emphatic

non-emphatic

ṣ

s

ṣ̣

ṣ̣

ṭ

d

The only *muṭbaq* sound that has no non-emphatic counterpart is / ḍ /.

The degree of emphaticness among the emphatic consonants depends on the environment. There are five degrees of emphaticness, in descending order:

1. Emphatic consonants + ā : as *Ṭāriq* (a man's name),
2. emphatic consonants + a : as *ṣaluḥa* (to be good),
3. emphatic consonants + u : as *qutla* (he was killed),
4. emphatic consonants + c : as *ṣiṣbir* (be patient), and
5. emphatic consonants + i : as *ṣidq* (truth) .

⁴¹ Ibn Jinni's view is that / ḍ / is stronger than / ṭ /. (See *al-Munṣif*, 2 / 328).

/ l /:

/ l / is a *mustafil* sound (lowered, i.e. non-emphatic). However, it becomes an emphatic consonant in certain circumstances:

1. In the word *Allāh* and *Allāhumma*, except when preceded by / i / or / ī /. Some examples are:

Allāhu rabbī (God is my lord),
hāḡā ʿAbdu-ḡlāh (this is Abdullah),
ʔiʿbudū-ḡlāh (worship God),
raʔaytu ʿAbda-ḡlāh (I saw Abdullah),
hāḡāni ʿAbdā-ḡlāh (these are Abdullahs),
min ʿAbdi Allāh (From Abdullah), and
min ʿābidī Allāh (from the worshippers of Allah).

2. Warsh read it as emphatic / ḡ / when followed by / a / or / ā / and preceded by ṣ, ṭ, or ḡ whether immediately or separated by the short vowel / a / ⁴², as in the following examples:

muṣallā → [muṣaḡḡā] ⁴³ (a place of prayer),
ʔaḡlama → [ʔaḡḡama] (to become dark), and
ʔaṭ-ṭalāqu → [ʔaṭ-ṭaḡḡqu] (divorce).

The remaining *qurrāʔ* read / l / in this case as a non-emphatic sound.

3. It is reported that / l / was read with emphaticness when occurring between two high consonants as in these examples:

⁴² *an-Nashr*, 2 / 111, and *at-Taysir*, 58.

⁴³ The doubling of the / l / makes no difference to the effect.

ʔaḡlaḡa → [ʔaḡlaḡa] (ruder),

ʔal-xuḷaṭāʔ → [ʔal-xuḷaṭāʔ] (partners), and

ʔal-muxlaṣīn → [ʔal-muxlaṣīn] (sincere) ⁴⁴.

Ibn al-Jazarī said: "It is better to pronounce / l / as *muraqqaqah* (non-emphatic) particularly when adjacent to an emphatic phoneme" ⁴⁵. He cites some examples:

jaʕala Allāhu (God made),

al-laṭīf (the polite one), *ʔixtalaṭa* (to be mixed up), and *lasallaṭahum* (you have given them power over you ..) .

Concerning the function of the emphatic / l̤ / in classical Arabic, and whether it is an independent phoneme or just an allophone of the normal / l /, C. Ferguson and S. Al-Anī hold the view that the emphatic / l̤ / is an independent phoneme and not an allophone of the phoneme / l / ⁴⁶. Ferguson came to this conclusion through using minimal pairs with the word *Allāh* and phonologically similar words. However, he ignores morphological functions in his examples . The two minimal pairs he cites are:

1. *waḷḷāhu* (and God),

wallāhu (he appointed him).

The two units seem to be the same in shape, although they are not, since each of them in fact contains two separate words, which are completely different in either case. The first consists of *wa-* (and) and *-Allāh* (God). The second consists of *wallā-* (he

⁴⁴ *an-Nashr*, 2 / 115.

⁴⁵ *an-Nashr*, 1 / 221.

⁴⁶ See " The Emphatic l in Arabic", *Readings in Arabic Linguistics* (1978), pp. 157- 166 , and *Arabic Phonology*, 29.

appointed) and *-hu* (him). So in this minimal pair, there is no evidence that the emphatic / ɖ / is an independent phoneme as Ferguson claims.

2. *waɖɖāhi* (by God),

waɖɖāhī (and the one who amuses).

Again these words are not minimal pairs. The two words differ in two sounds since their final sounds also are different.

We may conclude that the emphatic / ɖ / is an allophone of the actual / ɖ /. The word *Allāh* is an exception.

Pronouncing the / ɖ / of *Allāh* as non-emphatic is a kind of assimilation. This is because of the fact that *kasr* (i sound) and *tafkhīm* (emphaticness) are opposed. This is why the emphatic consonants have a lesser degree of emphaticness when followed by / i / ī / than when followed by other sounds, as we have seen previously. Furthermore, we will see later in the subchapter on *imālah* how the emphatic consonants prevent *imālah*.

/ r /:

Unlike / ɖ /, / r / is an emphatic sound in most cases. It is pronounced as a non-emphatic sound in the following cases only:

1. When followed by *kasrah* / i / or / ī /, no matter what the preceding sound is. The Arabic linguists and the *qurrā'* agree in this case. Some examples are:

rijzan (a plague),

bariḥa (to remain), and

būrika (to be blessed).

A suitable form for this case may be represented as:

$$\left[\begin{array}{c} + \text{trill} \\ + \text{emphatic} \\ \text{ʀ} \end{array} \right] \rightarrow \left[\begin{array}{c} + \text{trill} \\ - \text{emphatic} \\ \text{r} \end{array} \right] / \text{---} \left[\begin{array}{c} \text{i} \\ \text{i} \end{array} \right]$$

2. When it occurs after / i / or / ī / and is not followed by an *istiqlāʾ* sound. Some examples of this *muraqqaqah* / r / are: *miryah* (doubt), *širʿah* (a law), and *Firʿawn* (Pharaoh) .

However, when an *istiqlāʾ* sound occurs after it in the same word, this / r / is pronounced as *mufakhkhamah* (emphatic) as in : *qirṭās* (paper), and *miṣṣādan* (a watch-tower) .

The form for this case may be represented as:

$$\left[\begin{array}{c} + \text{trill} \\ + \text{emphatic} \\ \text{ʀ} \end{array} \right] \rightarrow \left[\begin{array}{c} + \text{trill} \\ - \text{emphatic} \\ \text{r} \end{array} \right] / \left[\begin{array}{c} \text{i} \\ \text{i} \end{array} \right] \text{---} \left[\begin{array}{c} + \text{consonantal} \\ - \text{high} \end{array} \right]$$

3. When it occurs finally after / i / or / ī / as in: *xabīr* (well acquainted), and *munhamir* (pouring forth) .

The *istiqlāʾ* sound does not influence / r / when it occurs initially in the following word as in *faṣbir ṣabran jamīlan* (...maintain a patience that is beautiful).

The form for this case may be represented as:

$$\left[\begin{array}{c} + \text{trill} \\ + \text{emphatic} \\ \text{ʀ} \end{array} \right] \rightarrow \left[\begin{array}{c} + \text{trill} \\ - \text{emphatic} \\ \text{r} \end{array} \right] / \left[\begin{array}{c} \text{i} \\ \text{i} \end{array} \right] \text{---} (-)$$

4. When it is separated by one or even more consonants from a

preceding / i /. This case is mostly associated with the reader Warsh in the following circumstances:

a. The separated consonant is not an *istiʿlāʾ* one, as in:

ʾiṣṣāhum (their heavy burdens), and miṣṣan (Egypt); with the exception of the sound / x /, as in ʾixrājā (taking something away), which he reads with *Tarqīq* (non-emphaticness).

b. It is not followed by an *istiʿlāʾ* sound, even distantly, as in ʾiṣṣādan (shunning);

c. It is not repeated, as in midṣṣāran (in abundance) and ʾiṣṣāran (insistence);

d. It is not in an ʾaʿjamī word (foreign), as in Ibṛāhīm (Abraham) and ʿImṣān (Imran).

This case has also some exceptions, according to Makki Ibn Abi Ṭālib⁴⁷, such as: ʿiṣṣūn (twenty), ʿibṣah (example instructive), wizṣ (heavy load), and ḥiṣṣāhum (their warning).

The sound / r / is pronounced as emphatic elsewhere, such as when followed by / a /, / ā /, / u / or / ū /: as in qaṣaʾa (to read), qaṣuba (to be near), and ḡuṣūṣa (deception).

The *muraqqaqah* (non-emphatic) / r / is an allophone of the emphatic / ṣ / and not a separate phoneme.

Finally, all other *mustafil* (non-emphatic) consonants are pronounced as *muraqqaq*. The scholars of *tajwīd*, according to Ibn al-Jazarī, advise all readers not to emphasize *mustafil* sounds even when they occur close to emphatic sounds.

47 *Kitāb al-kashf ʿan wujūh al-qirāʾāt as-sabʿ*, 1 /211-212.

3. 2. Vowels

3.2.1. Introduction:

The vowels of Arabic will, in general, be discussed here alongside the two semi-vowels, i, e. glides, / y, w /, because vowel and semi-vowel are discussed together in classical Arabic, and because of the interchangeability between the two, especially between glides and long vowels.

Arabic has three primary long vowels and three primary short vowels, in both deep and surface structures. The claim made by M. Brame that: "There do not exist long vowels in underlying representations" ¹ is not entirely correct. Most long vowels are indeed the result of regular phonological changes. However, there still remain some long vowels that may be considered as purely long in surface structure as well as in deep structure. This is supported by the fact that the long vowel / ā / for example, occurring in some bi-radical roots, is a purely long one in deep as well as in surface representation. Ibn Jinni says: " In most *ḥurūf* where *alif* (ā) is the last letter, as in *mā*, *lā*, *hayā*, *ʿillā*, *ḥattā*, *kallā*, and so on, such *alifs* are *ʾuṣūl*, not *zawāʾid* (appendages) or the result of changes from other letters. The indication that they are not appendages is the fact that appending constitutes some form of *taṣarruf* or of *ishtiḳāq* in a word; none of these *ḥurūf* is *mutaṣarrif* or *muṣtaqq*.²

The long vowel / ā /, when occurring as a second or third

¹ *Arabic Phonology : Implications for Phonological Theory and Historical Semitic*. Ph. D. Thesis , 431.

² *Sirr ṣināʿat al-iʿrāb*, 2 / 653.

radical in words that are *mutaṣarrif*, derives from an original / w / or / y /. The likelihood of its originating from / w / is much greater than from / y /. Ibn Jinni says: " The *alif* is regarded as coming from *wāw* when occurring as *ʿayn* (second radical) in default of the other evidence to prove that it comes from *ya*. Do you not see how frequent is the type of *ṭawaytu*, *ṣawaytu*, *rawaytu*, *ḥawaytu*, and *zawaytu* (I folded, roasted, brought water, collected, and contracted respectively) and how rare is that of *ḥayaytu* (I lived) and *ʿayaytu*. (I was unable to...)"³.

Here are some notes regarding the vowels in Arabic:

1. There is some dispute among Arabic linguists as to whether the short vowels derived from the corresponding long vowels or vice versa. Most hold the former view.

Vowels do not occur in certain environments:

- a. Four short vowels never occur within the same root: * Cv Cv Cv Cv. However, they do occur across morpheme boundaries, as in *ḍarabahu* (he hit him). They also occur in a few words when the long vowel is shortened for some reason such as metrical license, as in *ʿulabiṭu* from *ʿulābiṭu*.
- b. Vowels never occur initially: * ~~ʾ~~ v * ~~ʾ~~ \bar{v} .
- c. Two vowels never occur contiguously. * $\bar{v}\bar{v}$ * vv * $\bar{v}v$ * $v\bar{v}$.

2. The long vowel / \bar{u} / does not occur in the final radical position in noun forms. The only exception is / $\mathfrak{J}\bar{u}$ / (the one who) in the dialect of Ṭayṣ and the so called "six nouns" [$\mathfrak{P}ax\bar{u}$ (brother), $\mathfrak{P}ab\bar{u}$ (father), $\mathfrak{H}am\bar{u}$ (father-in-law), $f\bar{u}$ (mouth),

³ *al-Munṣif*, 2 / 140-141.

ṣū (possessor), and hanū (penis), in *idāfah*. Abū as-Sammāl's reading of *alif at-tafkhīm* / 5 / as in [ar-rib5] for / ar-ribā / ⁴ may be included here. On the other hand, / ū / occurs frequently in the final radical position in verbs, as in *yad^cū* (to pray), *yakhlū* (to be alone).

3. The ease of articulation does not necessarily influence the frequency of vowels. The vowel / i / is easier to articulate than the vowel / u /. However, trilateral words having two / i /s, such as *ṣibil* (camels) are less common than trilateral words having two / u /s, such as *cunuq* (neck), *ṭunub* (tent rope) and *suhud* (insomniac) .

4. In roots that have a *ḥalqī* sound as second or third radical, the vowel following the second radical in the *muḍāri^c* is generally / a /, as having a similar place of articulation, as in *yasʿalu* (to ask), *yaqraʿu* (to read), *yas^caru* (to fire), *yaqra^cu* (to hit), and *yasbaḥu* (to swim) ⁵

Regarding the occurrence of glides in Arabic, the following conditions obtain:

A. Glides may occur:

1. initially as in *wa^cada* (to promise) *yabisa* (to be dry),

2. finally as in *dalw* (bucket) *ṣaby* (gazelle),

3. intervocalically as in *da^cawāt* (invitations), *laqiya* (to

⁴ *aL-Muḥtasab*, 1 / 142.

⁵ *al-Khaṣā'iṣ*, 2 / 143.

meet),

4. between vowel and consonant as in *Fir^cawn* (Pharaoh), *sayr* (walking), except for the sequences - iw+ C - and - uy + C :

* *qiwl* (saying),

* *muysir* (wealthy).

However, when the combinations / iw and uy / are followed by another vowel, this occurrence is accepted as *ḥiwal* (change) and *ʿuyabah* (faulty);

5. between consonant and vowel as in *ʾa^cwar* (one-eyed) and *ʾabyaḍ* (white).

B. When a vowel precedes its corresponding glide, the result is a long vowel.

i + y → ī

u + w → ū

C. Because the long vowel / ī / is not identical with the glide / y /, or / ū / with / w /, gemination does not take place when the long vowel precedes its corresponding glide either within the same word or across word boundaries, e. g. *yu^cṭi* *Yāsir* (Yāsir gives) and *yad^cū* *Wājīd* (Wājīd invites).

Assimilation takes place between the three types of sound, long vowels, glides, and consonants, as follows:

1. long vowels assimilate to vowels,
2. long vowels assimilate to glides,
3. glides assimilate to long vowels,

4. glides assimilate to glides,
5. glides assimilate to consonants,
6. consonants assimilate to glides, and
7. consonants assimilate to long vowels.

1. Long vowels assimilate to vowels:

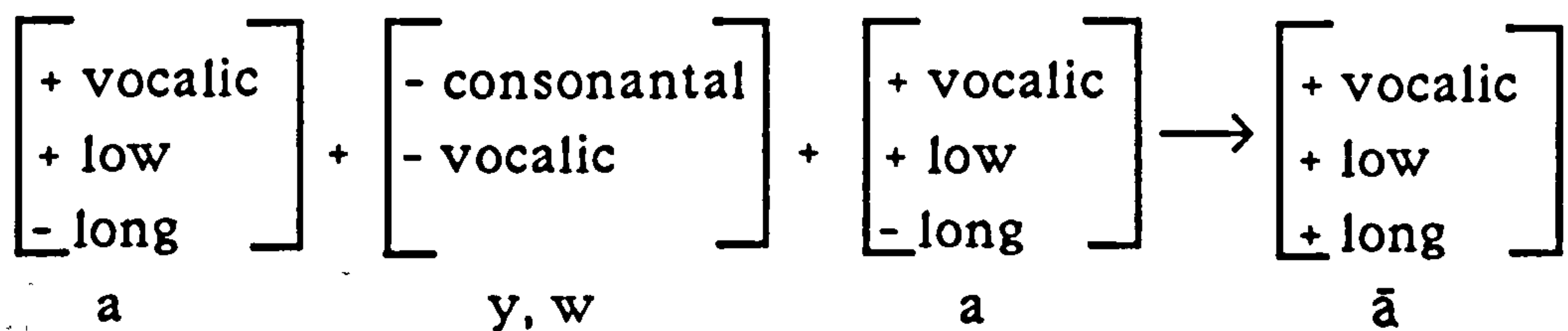
1. / ā / in the active form of *fāʿal* becomes / u / in the passive form of it, such as in: *bāyaʿa* (accept someone to be a leader) → *būyiʿa* (to be accepted as a leader), and *ḍāraba* (to fight with someone) → *ḍūriba* (to be fought) .
2. / ū / assimilates to / i / in diminutive form, such as: *ʿuṣfūr* (sparrow) *ʿuṣayfīr* (a small sparrow).

2. Long vowels assimilate to glides:

A final high long vowel becomes a corresponding short vowel plus glide: * *marmūy* → *marmiyy* (thrown, shot); the dual form of *yaḥzū* (to fight) is *yaḥzuwān* (they fight), and the *naṣb* of *yaḥzū* is *yaḥzuwa*. The dual form of *yarmī* (to throw) is *yarmiyān*, and the *naṣb* of *yarmī* is *yarmiya*. Likewise, nouns ending in / ī / such as *al-qāḍī* (the judge), change to / iya / in the *naṣb*, as *al-qāḍiya*.

3. Glides assimilate to long vowels:

1. When a glide occurs between two identical short low vowels, it combines with the two vowels to form a long low vowel. This may be represented in the following form:



These are some examples :

- * *qawala* → *qāla* (to say),
- * *baya^ca* → *bā^ca* (to sell),
- * *ʔi^ctawada* → *ʔi^ctāda* (to become accustomed), and
- * *ʔinqawada* → *ʔinqāda* (to obey).

There are two exceptions to this rule:

a. when the glide is the central radical in a noun form:

hayaf (slenderness),

ḥawal (squint), and

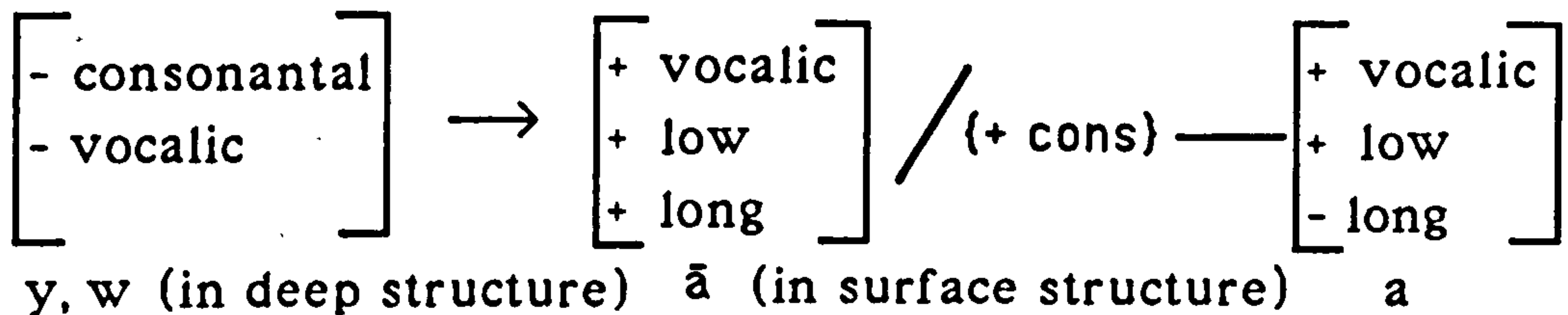
ᶜawar (being one-eyed) .

b. (only with / w /) when the glide is the central radical in the *ifta^cala* form of verbs indicating shared activity, as in:

ʔijtawarū (to be neighbors), and

ʔihtawašū (to fight each other).

2. When a glide occurs between a consonant and a short low vowel, it combines with that vowel to form a long low vowel. Again, this may be represented in the following form:

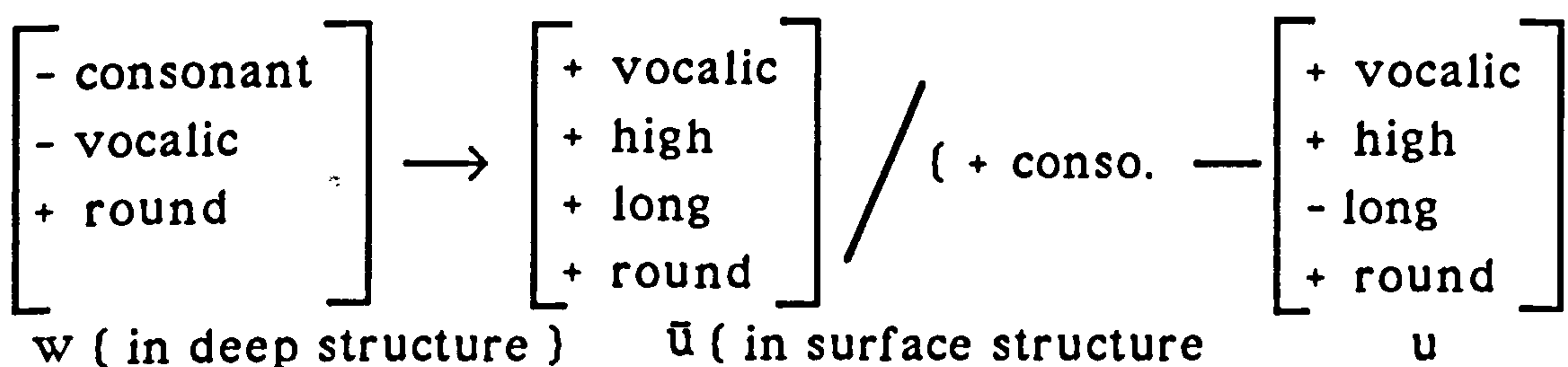


The following are some examples:

- * ʔaqwama → ʔaqāma (to raise),
- * ʔistaqwama → ʔistqāma (to be straight),
- * ʔibyanah → ʔibānah (clearness).

The only exception is ʔaf^cal at-tafḍīl (the ʔaf^cal of superiority), e. g. ʔabyanu (more clear), and ʔahwanu (easier).

3. A round glide combines with the short vowel following it to form a long high round vowel when occurring between a consonant and a short high round vowel. This may be represented in the following form:

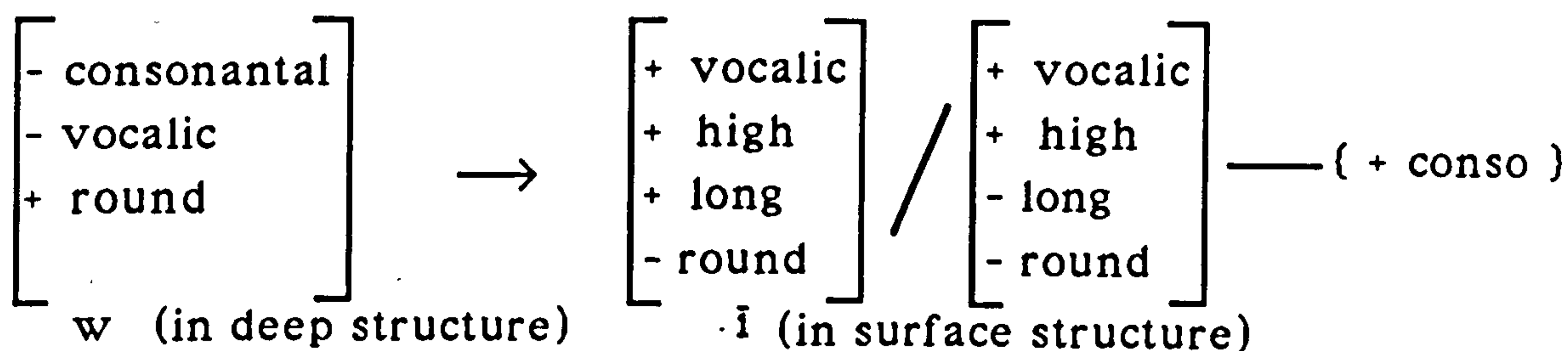


Some examples are:

- * yaqwulu → yaqūlu (to say),
- * yaşwumu → yaşūmu (to fast).

4. A round glide combines with the short vowel preceding it to

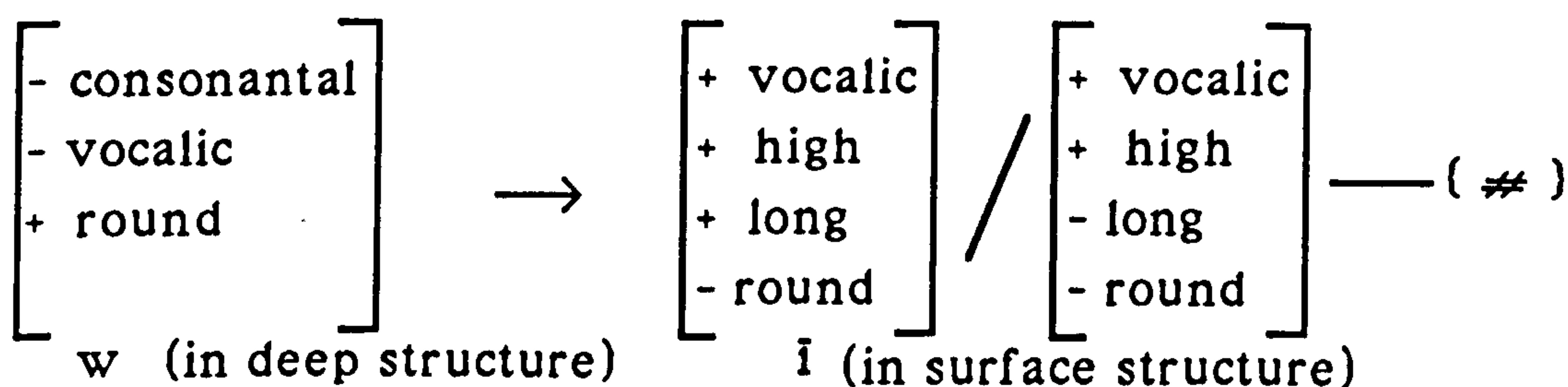
form a high non-round long vowel when preceded by a high non-round short vowel and followed by a consonant. This may be represented in the following form:



These are some examples:

- * *miwqāt* → *mīqāt* (season),
- * *miwzān* → *mīzān* (balance),
- * *diwmah* → *dīmah* (continuous rain).

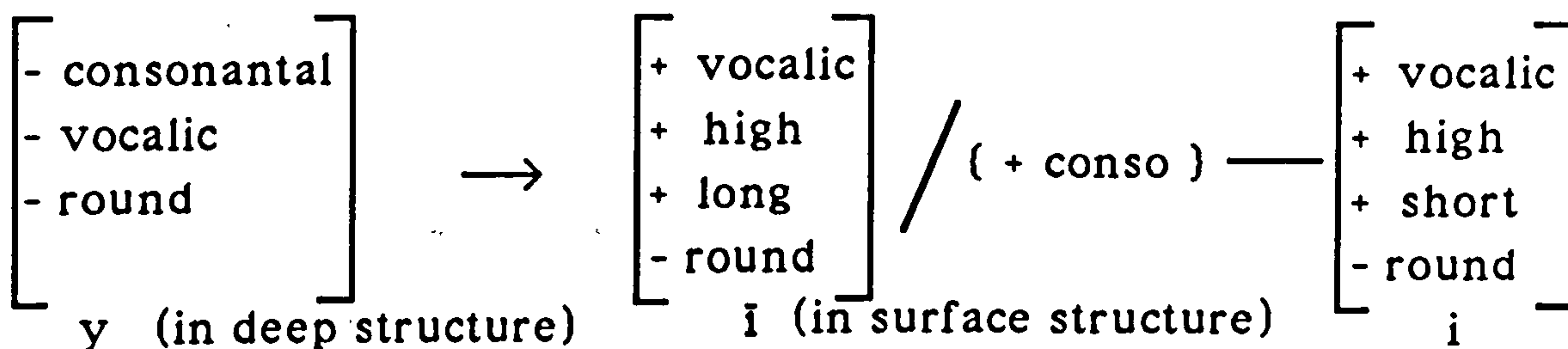
5. A round glide becomes a high non-round long vowel when it occurs finally, preceded by a high non-round short vowel. This may be represented in the following form:



Here are some examples:

- * *ḡāziw* → *ḡāzī* (fighter),
- * *dāʕiw* → *dāʕī* (inviter).

6. A non-round glide becomes a high non-round long vowel when preceded by a consonant and followed by a high non-round short vowel. This may be represented in the following form:

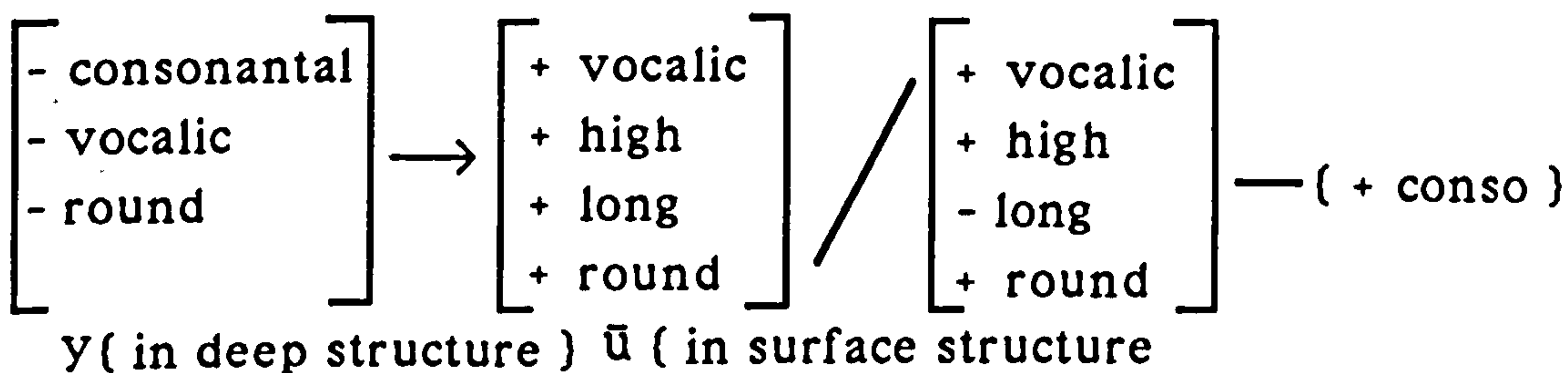


Here are some examples:

* *yabyi^cu* → *yabī^cu* (to sell),

* *yahyimu* → *yahīmu* (to fall in love) .

7. A non-round glide combines with the short vowel preceding it to form a high round long vowel when preceded by a high round short vowel and followed by a consonant. This may be represented in the following form:



These are some examples:

* *muyqin* → *mūqin* (sure),

* *muysir* → *mūsir* (wealthy),

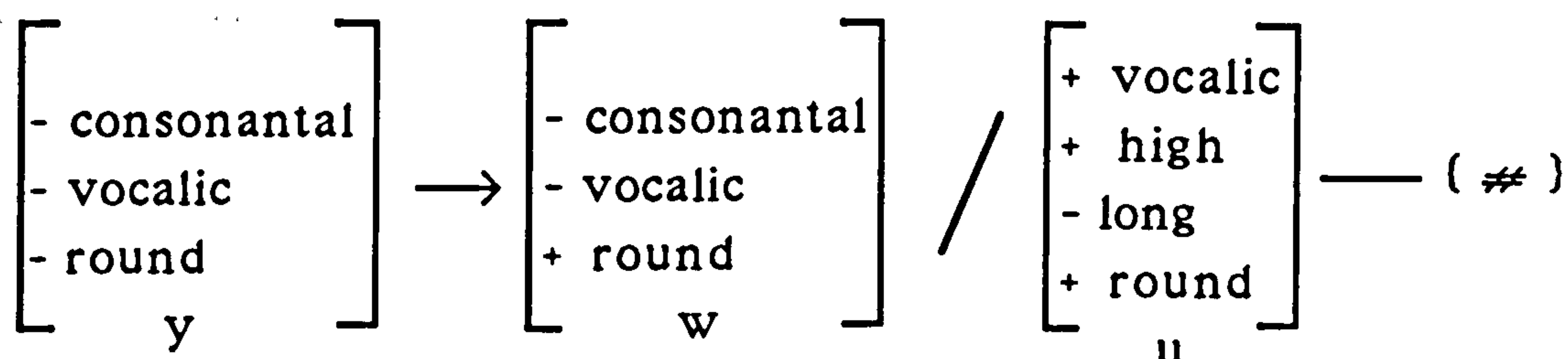
* *ṭuybā* → *ṭūbā* (gladness).

4. Glides assimilate to glides:

1. A non-round glide becomes a round glide in these cases:

- a. When a non-round glide occurs as the final radical in the *fa'ula* form and is preceded by a high round short vowel.

This may be represented in the following form:



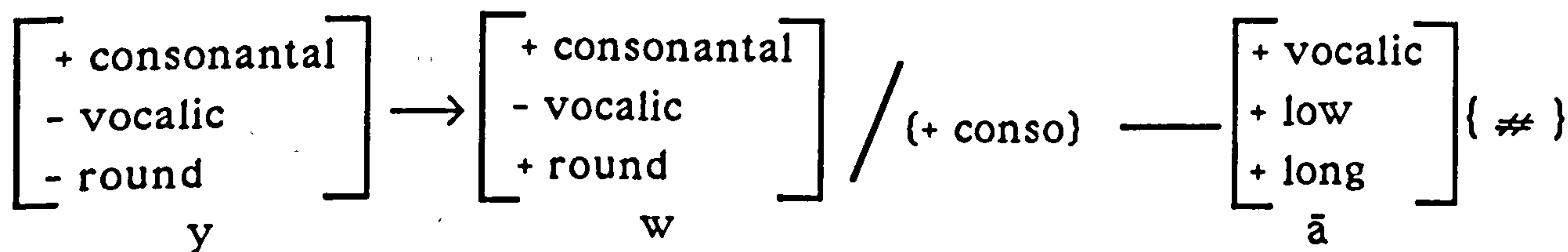
Here are some examples:

* *nahuya* → *nahuwa* (to be intelligent),

* *qaḍuya* → *qaḍuwa* (to be a judge).

- b. When a non-round glide as the final radical is preceded by a consonant and followed by a low non-round long vowel.

This may be represented in the following form:



Here are some examples:

* *taqyā* → *taqwā* (godliness),

* *šaryā* → *šarwā* (likeness),

* *fatyā* → *fatwā* (fatwa; formal legal opinion),

* *dunwā* → *dunyā* (near),

* *ʿulwā* → *ʿulyā* (high).

However, a few exceptions are reported:

saʕyā (a name of place),

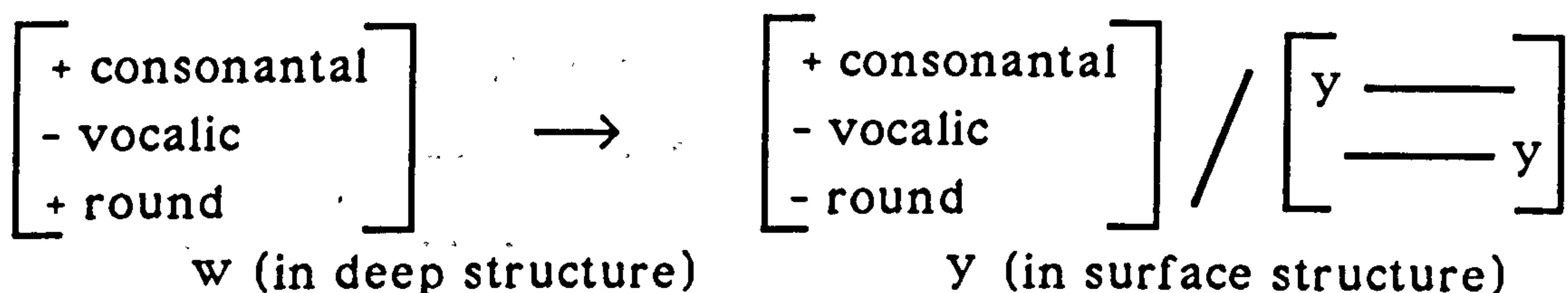
rayyā (fresh, plump, (f.) of *rayyān*),

ṭaṣyā (oryx calf)⁶,

quṣwā (distant).

2. A round glide becomes non-round glide in these cases:

a. When the two glides occur continuously regardless of their order. This may be represented in the following form:



Here are some examples:

* *saywid* → *sayyid* (leader),

* *maywit* → *mayyit* (dead),

* *ṭawy* → *ṭayy* (concealment),

* *šawy* → *šayy* (grill).

A few exceptions are reported, among which are:

Ḥaywah (a name of a man),

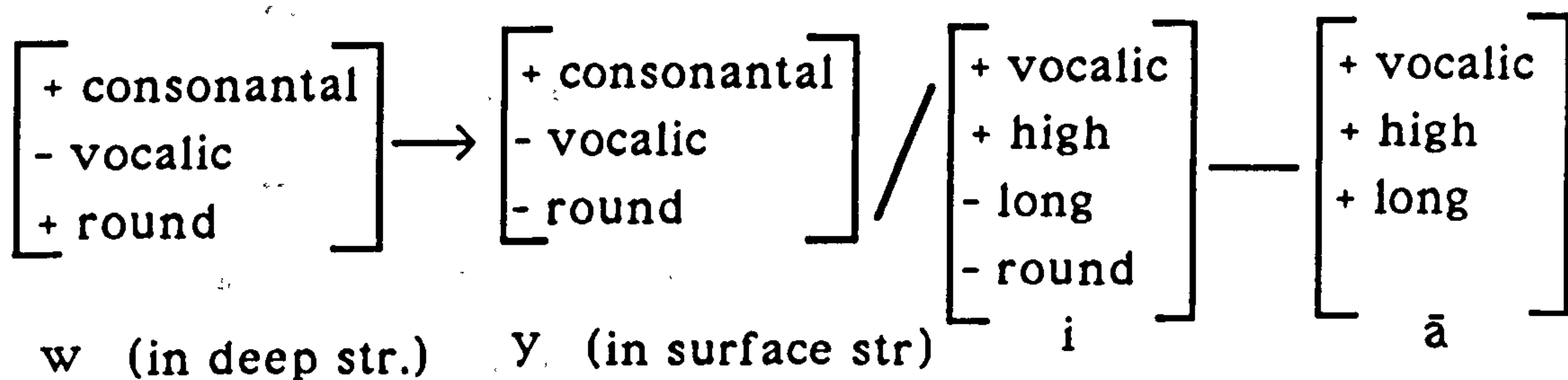
ʕawyah (howling),

ḡaywin (male cat),

ḡaywam (long or hard day).

b. When a round glide is preceded by a high non-round short vowel and followed by a low long vowel. This may be represented in the following form:

⁶ *Ḍiyā as-sālik*, 4 / 282.



Here are some examples:

* *əiwāb* → *əiyāb* (clothes),

* *riwāḍ* → *riyāḍ* (lands),

siwāt → *siyāt* (whips),

ṣiwām → *ṣiyām* (fasting).

Some exceptions are reported, such as:

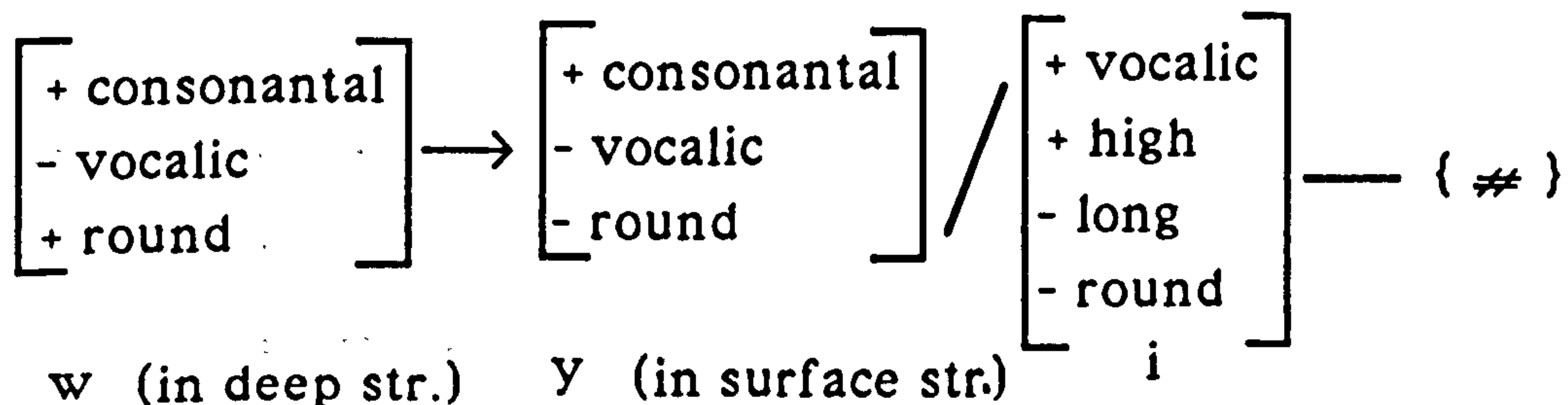
siwār (bracelet),

siwāk (a small stick used to clean the teeth),

jiwār (neighborhood),

liwāḥ (refuge).

c. Again, when a round glide occurs as a final radical and is preceded by a high non-round short vowel. This may be represented in the following form:



Here are some examples:

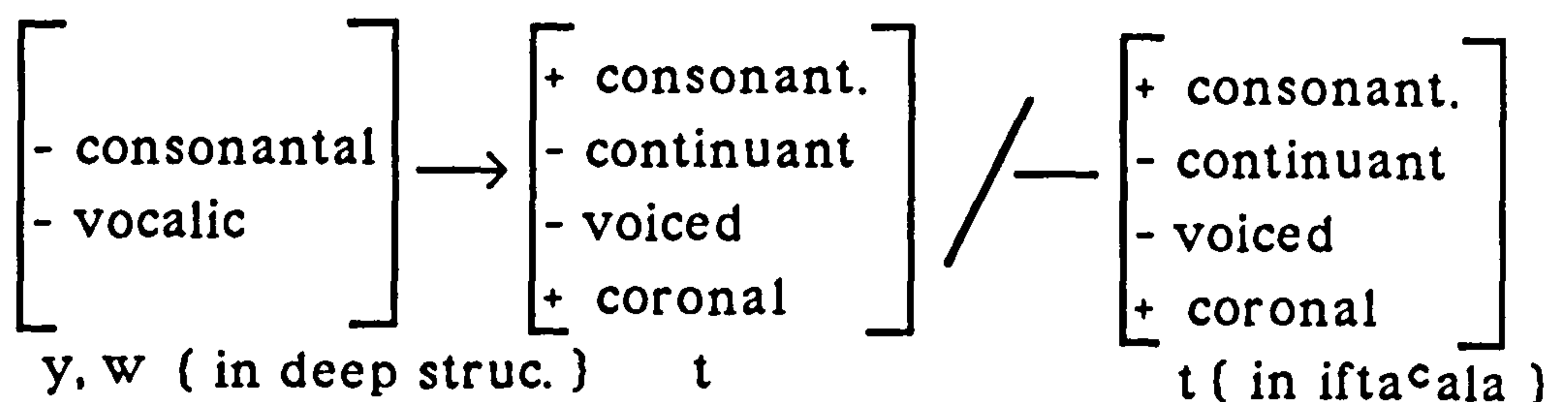
- * *raḍiwa* → *raḍiya* (to be satisfied),
- * *ʿufiwa* → *ʿufiya* (to be excused),
- * *ḡuziwa* → *ḡuziya* (to be fought),
- * *šajiwwah* → *šajiyyah* (worried (f.)),
- * *ḡāziwah* → *ḡāziyah* (to strive).

d. The two glides may occur in a free variation, as in these examples:

ṣuwwām / *ṣuyyām* / *ṣiyyām* (fasting (pl.)),
nuwwām / *nuyyām* / *niyyām* (sleeping (pl.)),
maḥawtu / *maḥaytu* (I deleted),
ḡazawtu / *ḡazaytu* (I fought).

5. Glides assimilate to consonants:

- 1) Both glides assimilate to / t / when they occur before it in the *iftaʿala* form. This may be represented in the following form:



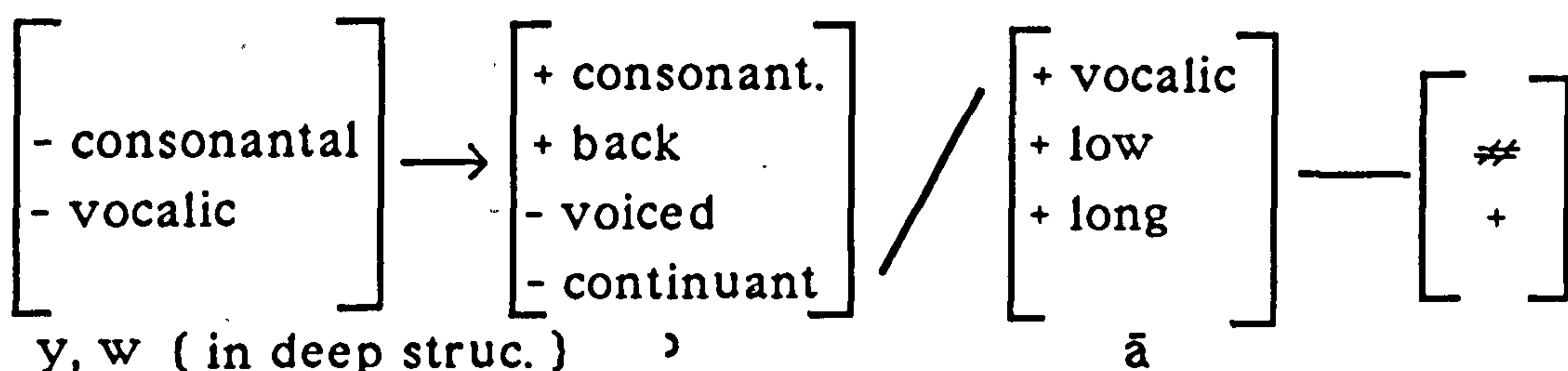
Here are some examples:

- * *ʔiwtaṣala* → *ʔittaṣala* (to be connected),
- * *ʔiwtaṣafa* → *ʔittaṣafa* (to be characterized by),
- * *ʔiwtazana* → *ʔittazana* (to be consistent),
- * *ʔitasara* → *ʔittasara* (to be easy) ⁷

⁷ In fact, this type involves a vowel assimilating a consonant. However, it

2. Glides are changed to / ʾ / in two circumstances:

- a. When the glides / w / or / y / occur finally after / ā /, they may be changed to / ʾ /. Again, this may be represented in the following form:



Some examples are:

1. * *samāw* → *samāʾ* (sky),
* *bināy* → *bināʾ* (building).
 2. * *samāwa + kum* → *samāʾakum* (your sky),
* *bināya + hu* → *bināʾahu* (his building).
 3. * *samāwan* → *samāʾan* (a sky),
* *bināyan* → *bināʾan* (a building)⁸.
- b. Likewise, these glides may change to / ʾ / when they occur after / ā / and are followed by / i /, as in the *ism al-fāʿil* of hollow verbs, and of some plurals of nouns the singular of which doubles a second-radical glide. e.g.
- * *qāwil* → *qāʾil* (a speaker),
 - * *bāyi^c* → *bāʾi^c* (salesman),
 - * *ʾawāwil* → *ʾawāʾil* (first people),
 - * *nayāyif* → *nayāʾif* (excesses).

It is also claimed that the same thing occurs in the

is listed here because *yasara* in the root the first radical is a glide,

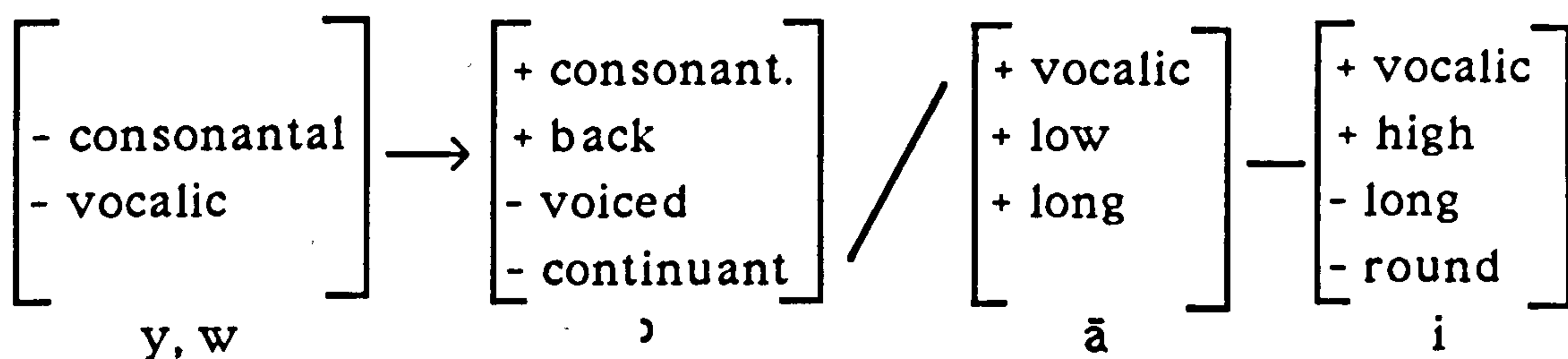
⁸ Glides, followed by a short vowel and *tanwin*, are still considered to be finals.

formation of the plural of nouns in the singular of which the glide is an element lengthening the second syllable, and not a radical, and which generally end in *tā' marbūṭah*, e. g.

ʿajūz * *ʿajāwiz* → *ʿajāʾiz* (old people),

ṣaḥīfah * *ṣaḥāyif* → *ṣaḥāʾif* (newspapers).

This may be represented in the following form:



However, it appears that this change is not attributable solely to the phonetic environment, since, in exactly similar circumstances, the glides may remain unchanged, e. g. :

ḥāwil (imper. of *ḥāwala*), (try),

ʿāwir (one-eyed),

ʿāyin (imper. of *ʿāyana*) (inspect),

compare of :

ḥāʾil (barrier),

ʿāʾir (ohpthalmia),

ʿāʾin (flowing).

- 3) When the glide / w / occurs initially and is followed by *Kasrah* / i /, it changes to / ʾ / in some Arabic dialects, according to Ibn Jinnī⁹. Some examples are:

wisādah / *ʔisādah* (a pillow),

wiḥāʔ / *ʔiḥāʔ* (receptacle),

wifādah / *ʔifādah* (delegation),

wikāf / *ʔikāf* (a drip).¹⁰

This dialectal variation or free variation, as we may call it, also occurs, but less frequently, when / w / is followed by / u / or / a /. Some examples are:

a. *wujūh* / *ʔujūh* (faces)

wuḥida / *ʔuḥida* (to be promised)

wuqqitat / *ʔuqqitat* (... are appointed a time)

b. *wajama* / *ʔajama* (to be silent)

waḥada / *ʔaḥada* (one)

wanāt / *ʔanāt* (weakness).

The two forms may coexist with somewhat different meanings, e. g. *muwaqqat* (timed) / *muʔaqqat* (temporary).

It is also quite possible that the alternative root to which a variation is attributed may be an invention attributable to it, as with *muwakkad* / *muʔakkad* (sure).

6. Consonants assimilate to glides :

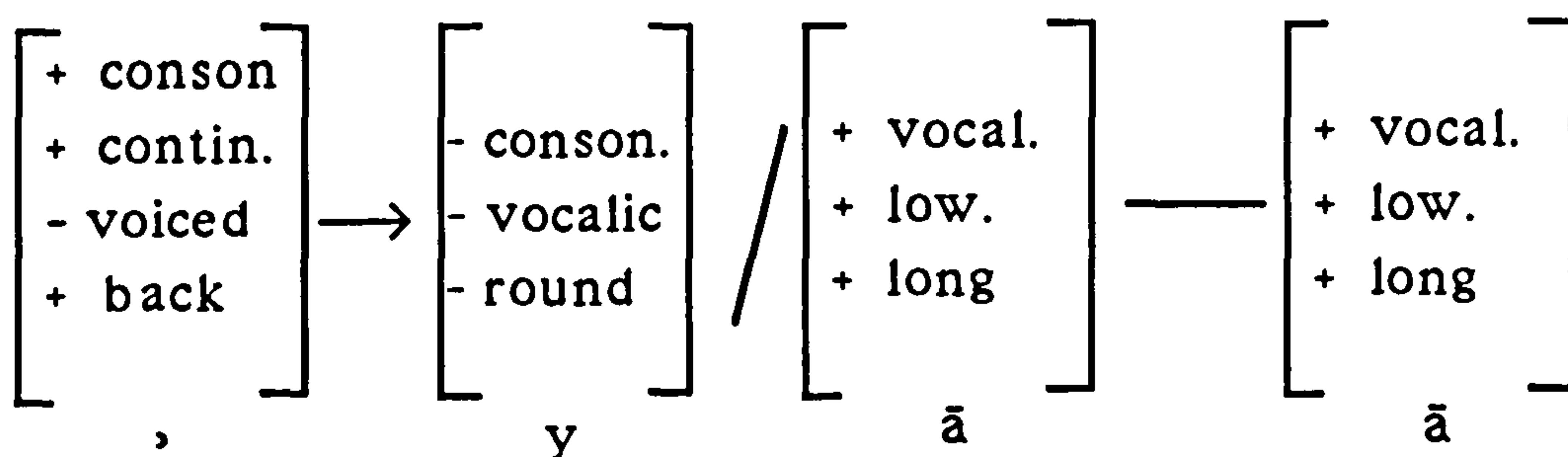
1. When two *hamzahs* occur initially and are separated by a short vowel, the second / ʔ / assimilates completely to / w / before / a / or / ā / in the plural form and in the diminutive form, e. g. :

⁹ See *al-Munṣif*, 1 / 228.

¹⁰ This is supposed to occur in the dialect of *Tamimi*. (See Y. ʔĀl Suwār, *Athar ikhtilāf al-lahajāt al-ʔarabiyah fi an-naḥw*, MA thesis, 548-551.

- ʾādamī * ʾaʾādim → ʾawādim (humans),
 ʾūqiyyah * ʾaʾāqī → ʾawāqī (weights),
 * ʾuʾaydim → ʾuwaydim (a small human).

2. When *hamzah* / ʾ / occurs between two / ā /s, it assimilates completely to a glide / y /, as in : * *xaṭāʾā* → *xaṭāyā* (mistakes). This may be represented in the following form:



7. Consonants assimilate to long vowels:

When a word begins with two *hamzahs*, the vowel in between and the second *hamzah* become a long vowel corresponding to the short vowel. These are some examples:

1. * ʾaʾmana → ʾāmana (to believe),
 * ʾaʾdam → ʾādam (Adam).
2. * ʾiʾmān → ʾimān (belief),
 * ʾiʾlāf → ʾilāf (covenants).
3. * ʾuʾtiya → ʾūtiya (to be given),
 * ʾuʾtumina → ʾūtumina (to be trusted).

However, when the function of the first *hamzah* is to indicate the *muḍāric* or *istifhām*, optionally the second / ʾ /

assimilates to / \bar{v} /, as in the following examples:

ʔaʔinnu / ʔayinnu (I groan)

ʔaʔanǵartahum / ʔānǵartahum (whether you warn them).

3. 2. 2. *Imālah* (Inclination):

3. 2. 2. 1 : Definition and Introduction:

Imālah as defined by Ibn al-Jazarī as well as by other scholars of *tajwīd* and grammarians is "ʾan tanḥuwa bil-faṭḥati naḥwa al-kasrati wa bil-ʾalifi naḥwa al-yāʾi"¹ (*imālah* is the shift of / a / to be close to / i / and the shift of / ā / to be close to / ī /). In other words, to pronounce / a / and / ā / as between actual low vowels / a / and / ā / and the high vowels / i / and / ī / respectively, producing central front vowels as a result.

The *alif* of *imalāh* / ā / is regarded by both Arabic linguists and scholars of *tajwīd* as one of the most *mustaḥsan* (acceptable) secondary sounds; it is in fact, the most frequently occurring.

The *faṭḥah* of *imālah* / a / is not listed among acceptable secondary sounds; however, it is accepted alongside its corresponding long vowel *alif al-imālah*. The reason for this omission is that the Arabic linguists speak about *ḥurūf* (consonants, glides, and long vowels) but not about *ḥarakāt* (short vowels). To them, the latter sounds are just parts of the former.

It has already been suggested that the *imālah* sounds may be transcribed as / e / ē and / E / Ē /.

The *imālah* with / e / ē / is called *imālah shadīdah* or *maḥḍah* (heavy or pure). The *imālah* with / E / Ē / is called *imālah khafīfah* or *imālah bayna bayna* (light *imālah*, or

¹ *an-Nashr*, 2 / 30. See also *al-Kitab*, 2 / 293 and *Sharḥ al-mufaṣṣal*, 9 / 53.

imālah in between)². ad-Dānī prefers *al-imālah al-khafīfah*³.

The *imālah* sounds are not independent sounds. They are only allophone of the low vowels / a, ā /. *Imālah* is optional; thus a speaker may pronounce the low vowels as middle vowels in specific circumstances, or not, as he wishes. To quote Ibn Yaʿīsh: "The circumstances of *imālah* make it optional and not compulsory... So all sounds occurring in *imālah* circumstances may be pronounced without *imālah*"⁴. The optional nature of *imālah* suggests that the / a, ā / sound is indeed the original sound, rather than the / e, ē /.⁵

This question is widely discussed by scholars of *tajwīd*, most of them inclining to the view that *fath* or *tafkīm* is the original. Ibn Yaʿīsh says: "*at-tafkīm* is the original, and the *imālah* is *ṭārīḥ* (derived)"⁶. This view is supported also by the a / ā sound's not being restricted to particular circumstances, as is the case with *imālah*. Thus, the a / ā sound is acceptable in all circumstances, but the e / ē sound is not. However some writers believe both *fath* and *imālah* to be original, and others,

² / e / ē / in this chapter should hereafter be taken to cover both kinds of *imālah*.

³ *an-Nashr*, 2 / 30.

⁴ *Sharḥ al-mufaṣṣal*, 9 / 55.

⁵ As well as being called *al-fath*, the a / ā sound is sometimes called *at-tafkīm* or *an-naṣb* (emphatic or accusative).

⁶ *Sharḥ al-mufaṣṣal*, 9 / 54 See also *an-Nashr*, 2 / 32, where Ibn al-Jazari speaks about those who believe that the *fath* is the original. However, Ibn al-Jazari himself does not give his *tarjīḥ* (preponderance) to either side, according to Makki Ibn Abi Talib, *al-Kashf*, 1 / 198.

mostly modern, believe that *fath* is the original in some cases and *imālah* is the original in others ⁷. They generally restrict the originality of *e* / *ē* to cases in which *alif* stands for *yā*, in deep structure, as, for example *bā^ca*, from the root *by^c*.

Imālah does not involve any semantic or syntactic variation. *Imālah* results from the adaptation of articulation of a low vowel to a high vowel, under the influence of a preceding or following high vowel; it also results from the representation by *alif* of an original / *y* /. As will be seen later, the Arabs tend to pronounce / *ā* / with *imālah* if it represents / *y* / in deep structure and with pure / *ā* / if it represents / *w* / in deep structure.

Imālah is discussed by most Arabic grammarians and scholars of *tajwīd*. Some devote whole books to this field, among whom are ad-Dānī, Makki Ibn Abi Ṭalib, Abū Shāmah, Abū al-Ḥasan al-Qāṣiḥ, and ʿAbd al-Fattāh Shalabī⁸; others merely include a chapter on *imālah* in their more general works, among whom are Sibawayh⁹, Ibn al-Jazarī¹⁰, az-Zamakhsharī¹¹, and Ibn Yaʿīsh¹². Abū ʿAmr ad-Dānī falls into both categories.

Ibn Jinnī does not have a separate chapter on *imālah*, nor does he go into detail concerning it; he is, however the first

⁷ See for example Makki Ibn Abi Ṭalib, *al-Kashf*, 1 / 198, Ibrāhīm Anīs, *Fi al-lahajāt al-ʿarabiyyah*, 47, and ʿAbd al-Fattāh Shalabī, *al-Imālah fi al-qirāʾāt wal-lahajāt al-ʿarabiyyah*, 97.

⁸ For more details see *al-Imālah fi al-qirāʾāt wal-lahajāt al-ʿarabiyyah*, 19-22.

⁹ *al-Kitāb*, 2 / 262-271.

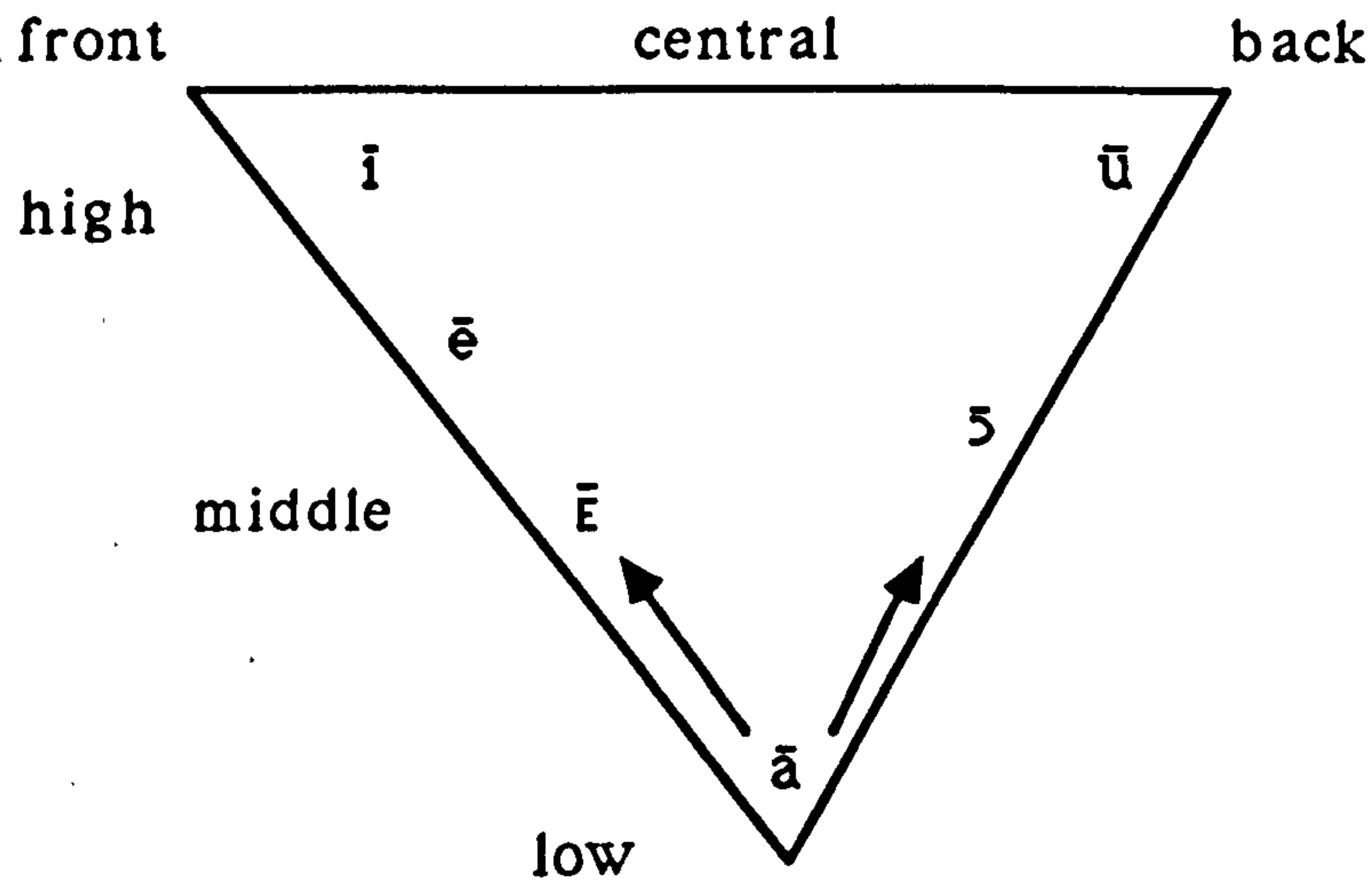
¹⁰ *an-Nashr*, 2 / 29-90.

¹¹ *Sharḥ al-mufaṣṣal*, 9 / 53-66.

¹² *Ibid.*

Arabic linguist to mention *imālah* as a part of *al-idghām al-aṣghar*¹³.

A shift of the low vowels / a, ā / towards the middle vowels may take place in either of two directions. It may be forwards, to approximate to / ī / (*imālah*), or backwards to approximate to / ū /. This backwards shift is known as *tafkhim*¹⁴. These shifts may be represented thus:



These two phenomena are opposites, that is to say that they cannot occur at the same time. This opposition may explain the tendency of *imālah* not to occur in the dialect of Ḥijāz, which is the dialect best-known for frequency of occurrence of *tafkhim*.

3.2.2.2. *Asbāb al-imālah* (The circumstances of *imālah*):

The shift of / ā / upwards towards / ī / is generally

¹³ *al-Khaṣā'is*, 2 / 141.

¹⁴ See (2.6.2.5 below).

conditioned by / i /, / ī / or / y /. These dominating sounds may appear in surface structure, in deep structure, or in both. This shift is a kind of vowel harmony, especially in surface structure. The direction of influence in this type of assimilation may be either regressive or progressive. However the influence of the preceding high front vowel is greater than that of the following high front vowel".¹⁵

The following circumstances of *imālah* are listed:

1. $\bar{a} \longrightarrow \bar{e}$ / i — :

When *kasrah* / i / occurs¹⁶ before / ā /, it may cause *imālah*. The separating segment/s between the two vowels may be:

- a. one segment as in : $\text{ʿimā}d \longrightarrow \text{ʿimē}d$ (support), and *Nihād* \longrightarrow *Nihēd* (a girl's name),
- b. two segments as in : $\text{šimlāl} \longrightarrow \text{šimlēl}$ (small amount), and $\text{ʔinsān} \longrightarrow \text{ʔinsēn}$ (human being).

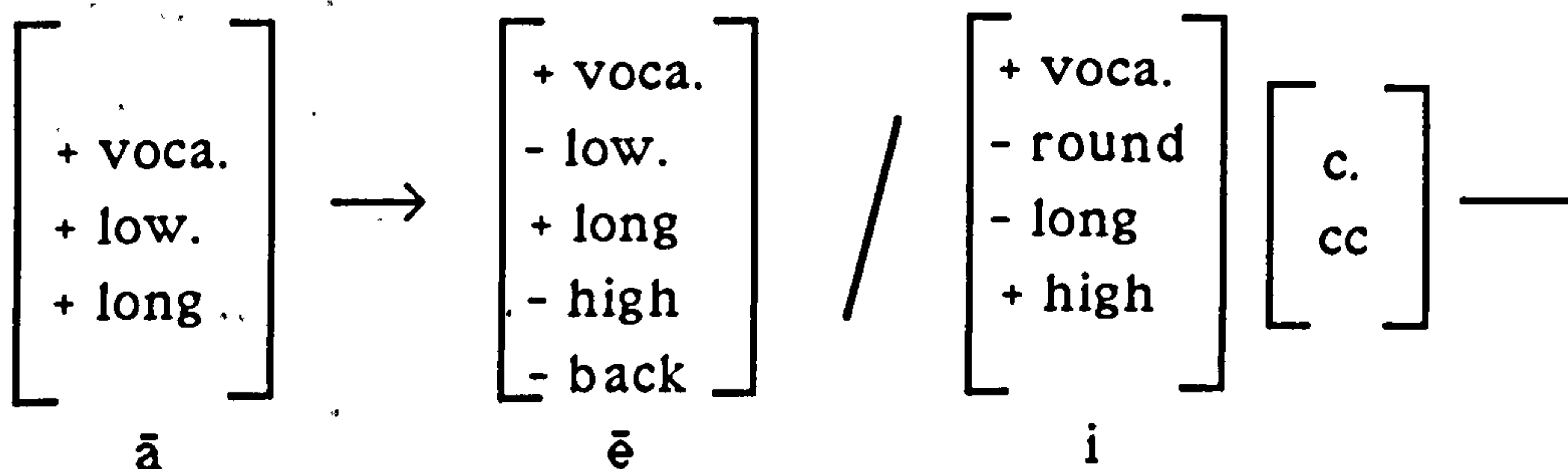
In fact, an example with three separating segments is given by Sībawayh and his followers: $\text{yaḍribahā} \longrightarrow \text{yaḍribahē}$ (that he hit her). This; however, is a *samāʿī* case, not *qiyāsī*. The reason for his accepting assimilation here is that / h / is *khafiyyah* (not clearly heard). He accepts this *imālah* only with an intervening / a / sound (i.e. the *naṣb*). He says: " There is no case of *imālah* of the *alif* when the verb is in *rafʿ* (with the vowel / u /) as $\text{yaḍribuhā} \longrightarrow *$ $[\text{yaḍribuhē}]$ "¹⁷. Later Ibn Yaʿīsh considers *imālah* in

¹⁵ *Sharḥ al-mufaṣṣal*, 9 / 56.

¹⁶ Contiguous occurrence of two vowels is not found in Arabic.

/ yaḍribahē / as *shāḍḍ* (exceptional) ¹⁸.

From the previous discussion, it is clear that the separating segments may not be more than two, with the exception of the example given by Sībawayh. A form for this circumstance of *imālah* may be represented as:



In this circumstance, the scholars of *tajwīd*, in theory, follow the dictates of the grammarians. In practice, however, they do not always follow them. For instance, Ibn al-Jazarī gives / ʔinsān / as an example of the intervention between / ā / and / i / of two segments, which, according to the grammarians, should produce *imālah*. In practice, the word occurs 65 times in the *Qurʾān*, but in no occurrence is it reported to have been read with *imālah* by any reader ¹⁹. Ibn al-Jazarī could, however, have found words of similar form in the *Qurʾān* that are pronounced with *imālah* by some *qurrāʾ*, for example, ʕimrān which is pronounced by Ibn ʕakwān with *imālah* [ʕimrēn]²⁰. Many similar examples may be given of words that, according to the grammarians, are pronounced with *imālah*, but are

¹⁷ *al-Kitāb*, 2 / 262.

¹⁸ *Sharḥ al-mufaṣṣal*, 9 / 56.

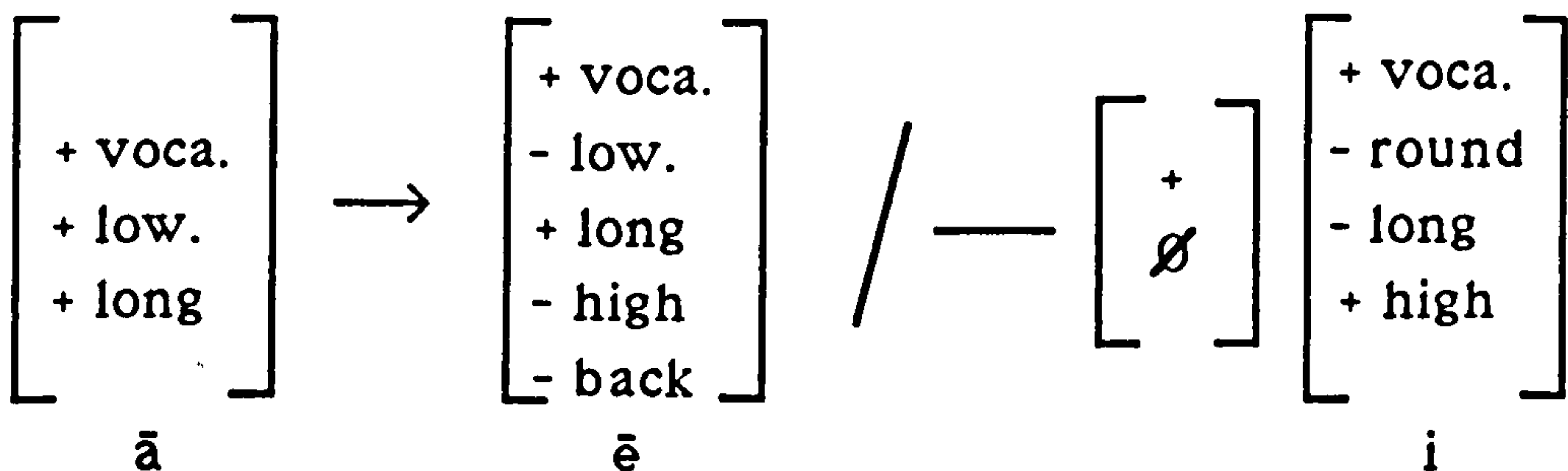
¹⁹ *al-Imālah fi al-qirāʾāt wal-lahajāt al-ʿarabiyyah*, 214.

²⁰ *at-Taysir fi al-qirāʾāt as-sabʿ*, 52.

pronounced by the *qurrā'* without *imālah*. Among these words are: *bilād* (countries), *ḥisān* (beautiful (girls)), and *ʿibād* (human beings / servants).

2. $\bar{a} \rightarrow \bar{e} / \text{---} i$:

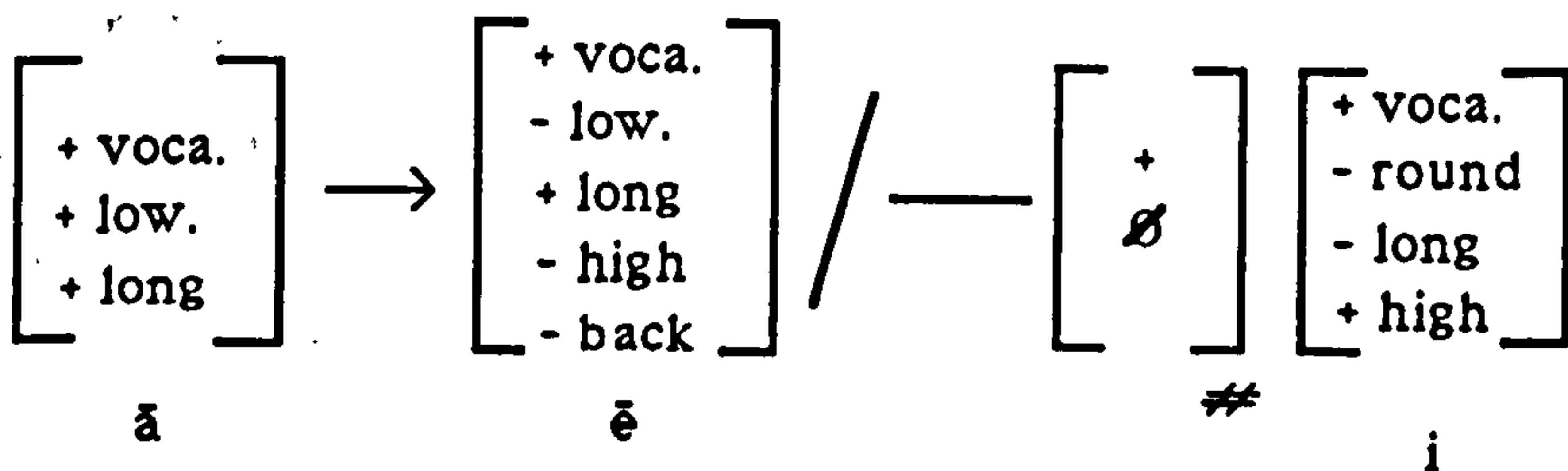
When / \bar{a} / occurs before / i /, it may be pronounced as / \bar{e} /. Not more than one segment may separate the two vowels, e. g. $\text{ʿ}\bar{a}lim \rightarrow \text{ʿ}\bar{e}lim$ (a scholar), $\text{ʿ}\bar{a}bid \rightarrow \text{ʿ}\bar{e}bid$ (worshipper), $fī\ an\text{-}nāri$ (in hellfire), and $min\ an\text{-}nāsi \rightarrow min\ an\text{-}nēsi$ (from the people). The *kasrah* in the first two examples is an internal vowel of the word, while in the last two it is a genitive marker. Either position is a circumstance of / \bar{e} /. This circumstance may be presented in this form:



21

Neither grammarians nor scholars of *tajwīd* allow more than one separating segment in this case. However, *qurrā'* do

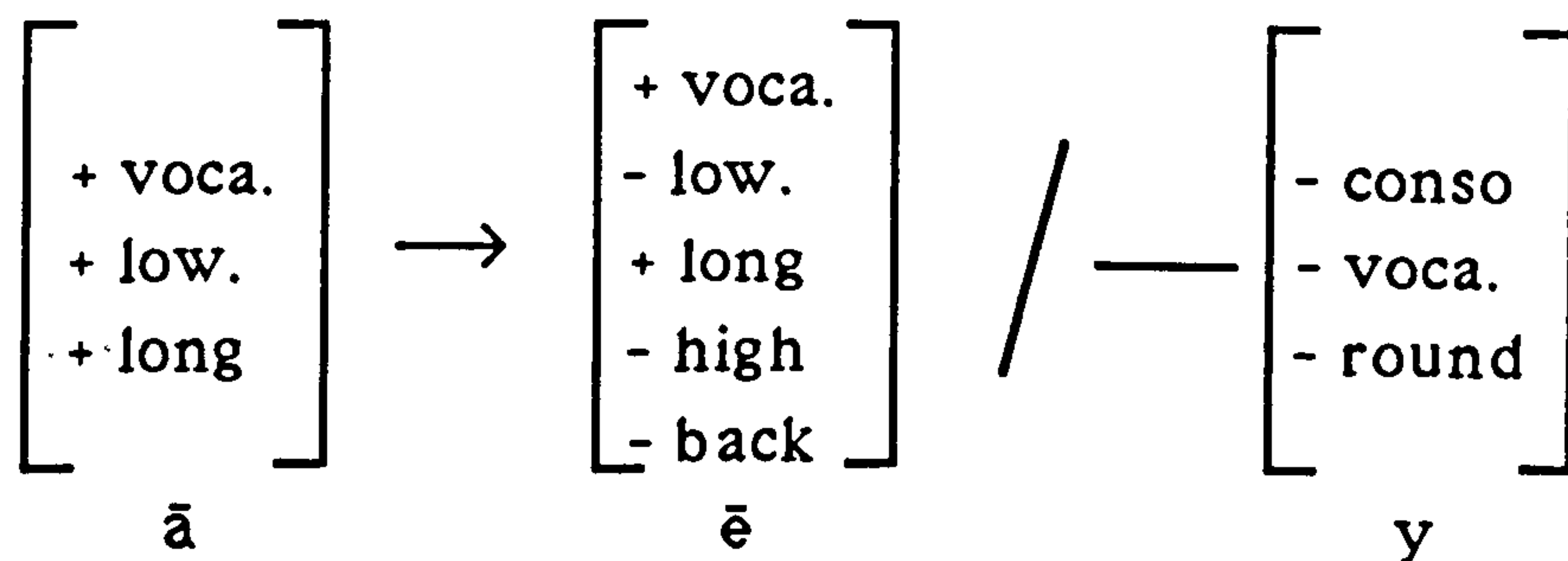
²¹ An alternative form may be:



not always follow the theory of either grammarians or scholars of *tajwīd* in practice. Some examples that have *imālah* in the theory of the grammarians but not in the practice of the *qurrā'* are: *biṭārid* (driven away), *mārid* (obstinate), and *mārij* (fire free of smoke).

3. $\bar{a} \rightarrow \bar{e} / y \text{ ---} :$

According to Arabic grammarians and theoreticians of the science of *tajwīd*, a preceding / y / is a circumstance of *imālah* in a kind of progressive assimilation²². A suitable form may be represented as:



In this case, the conditioning / y / and assimilating / \bar{a} / may occur:

- a. contiguously as in: *bayyā^c* \rightarrow [*bayyē^c*] (salesman), *kayyāl* \rightarrow [*kayyēl*] (one who weighs), and *bayān* \rightarrow [*bayēn*] (report).
- b. separated by one segment as in: *šaybān* \rightarrow [*šaybēn*] (an Arab tribe's name), and *^cAylān* \rightarrow [*^cAylēn*] (an Arab tribe's name).
- c. separated by two segments as: *ḥayawān* \rightarrow [*ḥayawēn*]

²² See *al-Kitāb*, 2 / 280 (1885), *Sharḥ al-mufaṣṣal*, 9 / 56, and *an-Nashr*, 2 / 33 .

(animal), and *mayalān* → [*mayalēn*] (deflection).

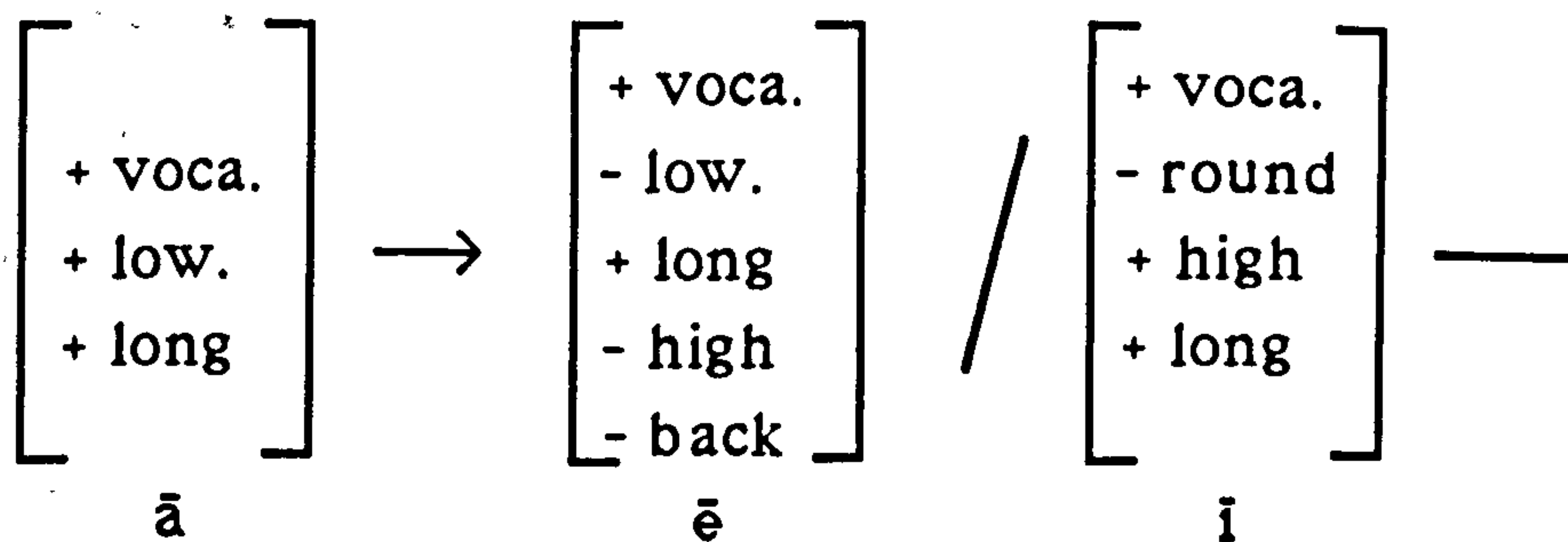
d. separated by four segments as: *yadahā* → [*yadahē*] (her hand), and *yadanā* → [*yadanē*] (our hand). However, Ibn al-Jazarī considers it as being separated only by two segments; to him and other grammarians *ḥarakāt* (short vowels) do not count.²³

Qurrā' do not follow this theory. To them / y / does not cause *imālah*. Thus they do not pronounce with *imālah* many such words, e. g.: *bayān* (report), *ḥayāt* (life), *ṣayyām* (days), and *bayātan* (at night).²⁴

On the other hand, when / y / occurs after / ā /, it does not influence the pronunciation of it.

4. ā → ē / ī _____ :

When / ā / occurs after / ī / it may be pronounced with *imālah*. The influence of the long vowel / ī / here is greater than that of the short vowel / i / and that of the semi-vowel / y / ²⁵. This circumstance may be represented in the following form:



²³ *an-Nashr*, 2 / 33.

²⁴ *al-Imālah fi al-qirā'at...*, 234.

²⁵ *Sharḥ al-mufaṣṣal*, 9 / 56.

The conditioning and assimilating sounds here may be separated by one segment as in / *dībāj* / → [*dībēj*] (silk brocade), and may be separated by more than one segment as in *yakīlahā* → [*yakīlahē*] (he weighs it) .

5. ā → ē / r ____ :

It is claimed by both grammarians and scholars of *tajwīd* that the *muraqqaqah* / r / has a strong tendency to cause the occurrence of *imālah*. al-Kisā'i says: "*lil-ʿArab fī kasr ar-rāʾ raʾyun laysa lahā fī ḡayrihī*"²⁶ (to Arabs the occurrence of *imālah* in the neighborhood of / r / is more likely than with other sounds). In their view, the reason is that "/ r / is close to *yāʾ*."²⁷ and also / r / acts as if it were two because of its trillity and the *kasrah* acts as if it were two too.²⁸

The question is: is the dominant influence here that of / i / or that of / r / ?

Some examples may help to indicate whether / r / in itself causes *imālah* or not:

1. a. *ṭārid* → *ṭērid* (driven away),
 b. *ṭāʾif* → * *ṭēʾif* (migrant),
 a. *ḡārim* → *ḡērim* (one who pays),
 b. *ḡāʾib* → * *ḡēʾib* (absent).²⁹

From these examples, it is clear that / r / causes *imālah* since both (a) and (b) have the same circumstances; however,

²⁶ *Ibrāz al-maʿāni min ḥirz al-ʿamāni*, 219.

²⁷ *al-Kitāb*, 2 / 268.

²⁸ *Sharḥ al-mufaṣṣal*, 9 / 61.

²⁹ *Sharḥ al-mufaṣṣal*, 9 / 61.

imālah occurs where / r / occurs and not when it does not.

However the influence of / r / on *imālah* only functions where / r / is *muraqqaqah*. Compare these examples:

2. a. *ḥimārika* → [*ḥimērika*] (with genitive case),
- b. *ḥimāraka* → * [*ḥimēraka*] (with accusative case),
- c. *ḥimēruka* → * [*ḥimēruka*] (with nominative case).

6. The *alif* in *mutaṣarrif* (conjugated) verbs and *mu^crab* (inflective) nouns where there is no neighboring / i, ī, or y / in the surface structure:

When there is no neighboring / i, ī, or y / , / ā / itself is taken in consideration, whether it occurs in the middle or finally, whether it represents an original / y / or / w /, what its function is, and whether it occurs in a noun or in a verb. The different types of *alifs* are represented in a tree form:

Some observations and examples concerning the occurrence of *imālah* may be offered on the basis of this tree:

- a. The final augmentative *alif* accepts *imālah* whether it is appended or a feminine marker. Some examples are:

ḥublā → [*ḥublē*] (pregnant),

Su^cdā → [*Su^cdē*] (a woman name),

ʔarṭā → [*ʔarṭē*] (a kind of tree).

- b. The *alif* that is / y / in underlying structure may be pronounced with *imālah*³⁰ whether it occurs in a noun or in a verb, as in:

ramā → [*ramē*] (to throw),

qaḍā → [*qaḍē*] (to judge),

fatā → [*fatē*] (young man) [in pause],

raḥā → [*raḥē*] (mill) [in pause].

- c. The *alif* that is / w / in underlying structure may be pronounced with *imālah* too except in three positions:

1. As the middle radical in a verb that does not take *kasrah* in the elided forms, e. g.

qāla → * [*qēla*] (to say),

ṭāba → * [*ṭēba*] (to become good).

These verbs take *ḍammah* in these forms, *qultu* (I said), and *ṭubtu* (I became good or well).

However in *ajwaf* (hollow) verbs that do take *kasrah* in the elided forms, *imālah* may occur, as in: *fāza* (to win)

³⁰ *al-Kitāb*, 2 / 92.

and *xāfa* (to fear), which may be pronounced with *imālah* as [fēza] and [xēfa]

2. As the middle radical in a noun, as in:

bāb → * [bēb] (door),

dār → * [dēr] (house).

3. As the final radical in a triradical noun, as in:

ʿaṣā → * [ʿaṣē] (rod),

qafā → * [qafē] (back).

The circumstances of *imālah* given by grammarians and scholars of *tajwīd* concerning / ā / originating as / w /, are not convincing.

The *qurrāʾ*, in practice, do not always follow the theory enunciated by both grammarians and scholars of *tajwīd* in this case. The following examples are pronounced with *imālah* theoretically. However the *qurrāʾ* pronounce them without *imālah*:

daʿā (to call), *danā* (to become close), *zakā* (to become good), *ʿalā* (to become high), and *najā* (to escape).

It is clear that when linguists state the first five circumstances of *imālah*, they mean only one type of *alif*, namely the non-final augmentative such as *ʿālim*, *firāš*, and *samāʿ*. None of them, however, specifies this type of *alif* / ā /; they all appear to refer to it in general terms, which are hardly appropriate.

7. *at-tanāsub* (conformity, e.g. harmony):

/ ā / may be pronounced as / ē / to match another / ē / This circumstance of *imālah* is a kind of vowel harmony.

One of the *alifs* has a real circumstance of *imālah* while the other does not, except in conformity. This type of vowel harmony may occur either regressively or progressively, within the same word or across word boundaries. In words such as *ʿimādā* → *ʿimēdē* (support) and *kitābā* → *kitēbē* (book), in pause, the first *alif* is pronounced with *imālah* because it is preceded by a *kasrah*. The second *alif* is pronounced with *imālah* for the sake of harmony. The above examples represent progressive occurrence in conformity. Examples of regressive occurrence within the same word are in the reading of *yatāmā* (orphans) and *an-naṣārā* (christians) as *al-yatēmē* and *an-naṣērē*, in which the second *alif* accepts *imālah* by virtue of being a fourth or subsequent letter.

Imālah in the circumstance of conformity across word boundaries is found in the *Qurʾān*. Some *qurrāʾ* pronounce with *imālah* all the final / ā /s at the end of verses such as in the *Sūrah Waḍ-ḍuḥā* (by the morning). Another example is found in the *Sūrah Waš-šamsi wa ḍuḥāhā* (by the sun and its morning).

8. before the feminine marker / h / (in pause only):

al-Kisāʾi pronounces with *imālah* the *fatḥah* / a / before *hāʾ* *at-taʾnīth*³¹ (feminine / h /) specifically in a pause on condition of its being not preceded immediately by ḥ, ʿ, or *istiʿlāʾ* sounds. An example in this case is: *raḥmah* → [*raḥmeh*] (mercy). He does not apply this to any other *hāʾ*, e. g:

³¹ Whether it is written as *tāʾ marbūʿah* or *tāʾ maftūḥah*, al-Kisāʾi reads it in pause with *imālah*. (See *Ibrāz al-maʿāni* , 243).

original *hāʾ*, as in: *tawajjah* → **tawajjeh* ≠ (to face),

pronoun *hāʾ*, as in: *ʿilmahu* → **ʿilmeh* ≠ (his knowledge).

Sibawayh says of this phenomenon: "/ a / followed by / h / is analogous to / a / followed by *alif*"³².

9. In *al-Ḥurūf al-muqaṭṭaʿah* at the beginning of some *Surahs*:

- a. *Alif Lām Rāʾ*. This is pronounced by Abū ʿAmr, al-Kisāʾī, Ibn ʿĀmir, Ḥamzah, Khalaf, and Abū Bakr as [ʾ*Alif Lām Rēʾ*]. Similarly with ʾ*Alif Lām Mīm Rāʾ*.
- b. *Kāf Hāʾ Yāʾ ʿAyn Ṣād*. This is pronounced by some *qurrāʾ* as [*Kāf Hēʾ Yēʾ ʿAyn Ṣād*].
- c. *Ṭāhā*, *Ṭāsīn*, and *Ṭā Sīn Mīm* are sometimes pronounced as [*Ṭēhē*], [*Ṭēsīn*], and [*Ṭēsīm mīm*] respectively.
- d. *Ḥā Mīm* is sometimes pronounced as [*Hē Mīm*].

10. *ar-Riwāyah wat-talaqqī* (transmission):

The *qurrāʾ* frequently allege the tradition of the transmission that they have received as a reason for adopting *imālah* in circumstances other than those we have mentioned, and for not adopting it in some of the latter circumstances.

1. There are many cases where *imālah* occurs without any apparent circumstance; these receive only unsatisfactory explanations from the theoreticians. An example of this is the reading of *khāfa* with *imālah*. One reason given here is "that / ā / becomes / ī / in the passive"³³. If this reason

³² *al-Kitāb*, 2 / 270.

were accepted, all *ʾajwaf* verbs would be read with *imālah*, which is not the case.

2. Some words are reported to have been read with *imālah*, whereas similar words in similar circumstances are not. Makki Ibn Abī Ṭālib says: "Some cases of *imālah* may occur by virtue of oral transmission, without any other reason".³⁴
3. Grammarians as well as scholars of *tajwīd* believe that it is obligatory to follow the *qurrāʾ*. Sībawayh says: "The *qirāʾah* (what the *qurrāʾ* say) may not be rejected, because it is a *sunnah*, which should be followed"³⁵. Similar statements are made by Ibn al-Jazarī.³⁶

However in normal speech, one may pronounce / ā / with *imālah* or not because *imālah* is optional. Sībawayh says: "Know that people who pronounce / ā / with *imālah* do not do so in all cases, nor do those who pronounce / ā / without *imālah* always do so."³⁷

***Imālah* as a dialectal variant:**

This issue will be discussed from two different points of view. Firstly, in the language in general as dealt with in works on Arabic grammar and linguistics. Secondly, in the recitation of the *Qurʾān* as laid down in theories of *qirāʾāt* as well as in the actual practice of the *qurrāʾ*.

³³ *Ibrāz al-maʿāni min ḥirz al-ʾamāni*, 231.

³⁴ *al-Kashf*, 84.

³⁵ *al-Kitāb*, (1966) 1 / 391.

³⁶ *an-Nashr*, 1 / 10-11.

³⁷ *al-Kitāb*, 2 / 263.

1. In general:

Imālah is a dialect variant. Tribes having the tendency to pronounce / a / ā / with *imālah* live in the central eastern parts of the Arab peninsula. Ibn al-Jazarī says: "*al-imālah* is a feature of the dialects of all the *Najdī* tribes such as *Tamīm*, *Asad* and *Qays*."³⁸ The tribe that is best known for consistent use of *imālah* is *Tamīm*. However, within these dialects, *imālah* is still only an allophone of / ā /. The tribes having the tendency to pronounce / a / ā / purely live in the western parts of the peninsula. The *fath* is usually associated principally with the dialect of *Ḥijāz*.³⁹

This does not mean that no *Ḥijāzī*, for example, would ever pronounce / ā / with *imālah*. In fact, there was considerable interaction between *Quraysh* and other Arab tribes in the *Jāhiliyyah* as well as in *Islam*, and they were influenced by them. This appears to have confused Ibn al-Anbārī; he says: "It [*imālah*] is the dialect of *ṣahl al-Ḥijāz* and their neighbors such as *Tamīm* and others."⁴⁰

2. In *Qirāʾāt*:

In this particular sphere, the important question appears to be: which of the *qurrāʾ* apply *imālah*?

A statement by Ibn al-Jazarī gives us an idea of how common *imālah* is among *qurrāʾ*: "There is no *qārīʾ* who does not use *imālah* to a greater or lesser extent."⁴¹ Ḥamzah and al-

³⁸ *an-Nashr*, 2 / 30.

³⁹ *al-Kitāb*, 2 / 279-280.

⁴⁰ *Asrār al-ʿArabiyyah*, 160.

Kisā'i are among those use it most. Ibn Kathīr uses it least, according to Ibn al-Jazarī. However, as-Suyūṭī says: "All the ten⁴² *qurrā'* used *imālah*, except Ibn Kathīr, who did not use it at all, throughout his reading of the whole *Qur'ān*."⁴³

3.2.2.4. The inhibition of *imālah*:

The circumstances that inhibit *imālah* are more clearly defined than those in which *imālah* occurs. The following are the circumstances in which *imālah* is inhibited:

1. * ā → ē / emphatic ____ : after emphatic sounds:

When / ā / is preceded by an emphatic sound [ṣ, ḍ, ṭ, ḏ, q, ʁ, x, ḷ, and ṛ], *imālah* does not occur, as in *qā'id* (sitting), *ḡā'ib* (absent), *xāmid* (abating), *ṣā'id* (going up), *ṭā'if* (ambulant), *ḍāmin* (responsible), *ḏālim*, *rāšid*, and *Allāh*. Sībawayh says: "We do not know anyone who pronounces / ā / here with *imālah* except those whose Arabic is not acceptable."⁴⁴ However, according to the grammarians, when the conditioning emphatic sound is preceded or followed by *kasrah*, most people produce *imālah*⁴⁵. Here are some examples:

miṣbāḥ → *miṣbēḥ* (lamp),

ṣi'āb → *ṣi'ēb* (hard (pl.)),

⁴¹ *Munjid al-muqrin wa murshid at-ṭālibin*, 60.

⁴² They are Ibn Kathīr, Nāfi', 'Āṣim, Abū 'Amr, al-Kisā'i, Ibn 'Āmir, Ḥamzah, Abū Ja'far, Ya'qūb, and Khalaf.

⁴³ *al-Itqān*, 1 / 94.

⁴⁴ *al-Kitāb*, 2 / 264.

⁴⁵ *Sharḥ al-mufaṣṣal*, 9 / 60.

miḍḥāk → *miḍḥēk* (laughing),
ḍiḥāf → *ḍiḥēf* (weak (pl.)),
ḡiḥām → *ḡiḥēm* (feeding),
ṭiwāl → *ṭiwēl* (high (pl.)),
ḡiḥlām → *ḡiḥlēm* (darkness),
ḡimāʾ → *ḡimēm* (thirsty (pl.)),
miḡnāj → *miḡnēj* (coquettish (woman)),
ḡilāb → *ḡilēb* (struggle),
ḡixbāt → *ḡixbēt* (humility),
xibāḥ → *xibēḥ* (bad (pl.)),
miqlāt → *miqlēt* (frying pan),
qifāf → *qifēf* (container).

According to the *qurrāʾ*, on the other hand, *imālah* is inhibited here. The only word reported with *imālah* here is *ḍiḥēf* (weak (pl.)), and even this, is read only by Ḥamzah.⁴⁶

There are some exceptions to the influence of the preceding emphatic sounds:

a) *ā* → *ē* / emphatic — (in *ʾajwaf* (hollow) verbs):

When / *ā* / occurs in in *ʾajwaf* (hollow) verbs, as in these examples:

xāfa → [*xēfa*] (to fear),
ḡāba → [*ḡēba*] (to be absent),
ṭāba → [*ṭēba*] (to be good),
ṣāra → [*ṣēra*] (to become)⁴⁷.

⁴⁶ *an-Nashr*, 2 / 63.

⁴⁷ In this example, / *ā* / occurs between two emphatic sounds; however, *imālah* is not inhibited.

b) $\bar{a} \longrightarrow \bar{e}$ / emphatic — \neq :

When / \bar{a} / occurs finally, *imālah* occurs, as in these examples:

$\mathfrak{ṭaṣā} \longrightarrow [\mathfrak{ṭaṣē}]$ (to overflow)

$\mathfrak{ṣaṣā} \longrightarrow [\mathfrak{ṣaṣē}]$ (listen).

$al-mu\mathfrak{ṭā} \longrightarrow [al-mu\mathfrak{ṭē}]$ (the given),

$al-wu\mathfrak{ṣā} \longrightarrow [al-wu\mathfrak{ṣē}]$ (the central).

c) $\bar{a} \longrightarrow \bar{e}$ / emphatic — ri :

When / \bar{a} / occurs before / r / which is followed by / i / ⁴⁸, as in these examples:

$qārib \longrightarrow qērib$ (boat),

$\mathfrak{xārim} \longrightarrow \mathfrak{xērim}$ (debtor),

$\mathfrak{ṭārid} \longrightarrow \mathfrak{ṭērid}$ (driving away).

2. * $\bar{a} \longrightarrow \bar{e}$ / — emphatic : before emphatic sounds:

When / \bar{a} / is followed by an emphatic sound, *imālah* is inhibited even when the emphatic sound is separated from / \bar{a} / by one or more other sounds:

$nāqid \longrightarrow * [nēqid]$ (critic),

$\mathfrak{cāṭis} \longrightarrow * [\mathfrak{cēṭis}]$ (sneezing),

$nāfix \longrightarrow * [nēfix]$ (blowing),

$nāhiḍ \longrightarrow * [nēhiḍ]$ (rising),

$manāšiṭ \longrightarrow * [manēšiṭ]$ (pleasant things),

$manāfix \longrightarrow * [manēfix]$ (bellows).

The emphatic sound is strong enough to inhibit *imālah* even across word- boundaries:

$\mathfrak{ʔatā} Qāsim \longrightarrow * [\mathfrak{ʔatē} Qāsim]$ (Qasim came).

⁴⁸ *al-Kitāb*, 2 / 268.

The following are important observations on the inhibition of *imālah*:

1. Why do *istiʿlāʾ* sounds inhibit *imālah*?

Pronouncing / ā / as pure *alif* with neighboring *istiʿlāʾ* sounds is a kind of assimilation. Sībawayh explains this: "*Istiʿlāʾ* sounds inhibit *imālah* only because they are sounds that rise to the upper palate, and *alif* rises to the upper palate when it is produced at its (true) place of articulation."⁴⁹ This is made clearer by Khālīd al-Azharī: "The *mustaʿlī* sounds inhibit *imālah* in a search for harmony of sounds."⁵⁰

2. Regressive assimilation is more frequent and less readily inhibited than progressive. Thus, the inhibiting sounds have a greater influence when they occur after / ā / than when they occur before it. This statement may be supported by the following:

a. Preceding emphatic sounds inhibit *imālah* only when occurring contiguously. Following emphatic sounds, on the other hand, inhibit *imālah* even when separated by up to two other sounds:

ṣāʿid → * [*ṣēʿid*] (going up), but

ṭilāb → [*ṭilēb*] (claiming),

xilāf → [*xilēf*] (disagreement).

b. Preceding emphatic sounds inhibit *imālah* only within the same word. This is not the case with following emphatic

⁴⁹ *al-Kitāb*, 2 / 264.

⁵⁰ *Sharḥ at-taṣrīḥ ʿalā at-tawḍīḥ*, 2 / 349.

sounds.

ḍabaṭa ʿālim → [*ḍabaṭa ʿēlim*] (to capture a scholar).

c. Exceptions to the inhibition of progressive assimilation are more numerous than those of regressive. The *alif* in *ʾajwaḥ* verbs and the final *alif* are good examples.

3. The law of assimilation, including *imālah*, does not always apply. An example is the following two readings of Ḥamzah:

a. *zāḡat ʿanhum al-ʾabṣār* (have their eyes failed to preserve them),

b. *ḍēqat ʿalayhim al-ʾarḍ* (the earth seemed constrained to them).

He reads the first example without *imālah* and the second example with *imālah*. However, / ā / in the second example occurs between two emphatic sounds, and *imālah* is still not inhibited. Ḥamzah is definitely following his teachers in both cases.

3.2.3. Vowel harmony:

Vowel harmony may be defined as "a principle which rules that the vowels of neighboring syllables shall have similarity with each other."¹ The best equivalent term for vowel harmony in Arabic is *itbāʿ aṣ-ṣawāʾit*.

In this sub-chapter, the vowel harmony will be limited to that of identicalness between vowels. Applying this limitation, *imālah*, for example, may be excluded from our discussion here, except in a few cases, where a vowel assimilates to another vowel completely. However, in all its types, *imālah*, as we have seen, is a kind of vowel harmony.

There are two types of vowel harmony: progressive and regressive. Some linguists limit vowel harmony to the progressive type and call the regressive one "umlaut" ². However, we shall use the term "vowel harmony" here for both types, as other linguists do, since they both exist in Arabic. The vowels involved, as has been mentioned,³ do not occur contiguously, but rather with one or more consonants intervening.

Vowel harmony may occur across morpheme and word boundaries as well as within the same word. It is one of the most common types of distant assimilation.

Vowel harmony occurs as a systematic feature in a number of languages, such as Turkish and Hungarian. In Turkish, for example, unrounded vowels occur after other unrounded vowels,

¹ C. Ward, *Practical Phonetics for Students of African Languages*, 127.

² For example, see Roger Lass, *Phonology*, 171-172.

³ See (3.2.1. above).

and rounded vowels occur after other rounded vowels.

Systematic vowel harmony occurs in Arabic in a limited number of cases. Thus many Arabic linguists do not discuss it directly in their works.

1. Systematic vowel harmony:

A. *Hamzat al-waṣl*:

This is a sound that is not pronounced when occurring between other sounds. In other words, this sound occurs only at the beginning of utterances.⁴ For example the *hamzah* of the definite article is *waṣl*; it is pronounced initially as in *ʔal-qamar* (the moon) but is not pronounced in *wa ʔal-qamar* (and the moon) → * *wa ʔal-qamar*.

On the other hand, *hamzat l-qatʿ* persists, whatever its position within an utterance, *ʔAḥmad* is pronounced as *wa ʔAḥmad* (and Ahmad) and not * *waḥmad*.

Hamzat-l waṣl may be *maftūḥah* (followed by / a /), as is the case with the definite article / *ʔal-* /, may be *maksūrah* (followed by / i /), as in nouns such as *ʔism* (name), *ʔibn* (son), and *ʔimruʔ* (man) or imperatives such as *ʔiḥab* (go), or may be *maḍmūmah* (followed by / u /), as in imperatives such as *ʔuqtul* (kill).

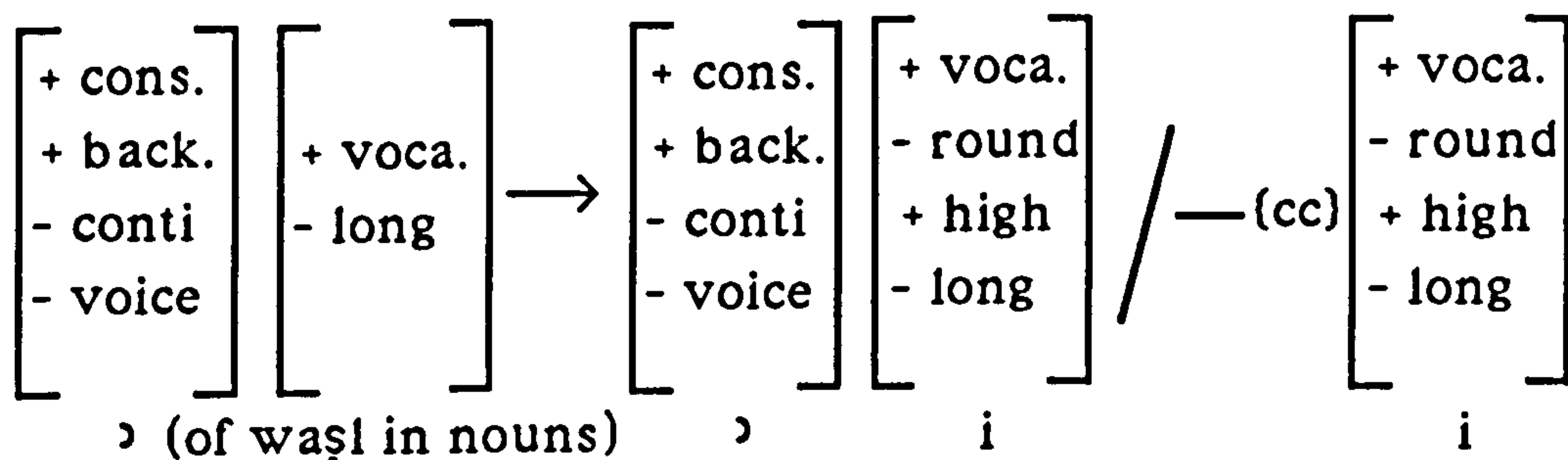
The most important thing in our discussion of *hamzat al-waṣl* in nouns is verbal nouns of quinqueliteral and sexiliteral

⁴ In fact this *hamzah* persists, even in continuous speech, if it is the *hamzah* of the definite article and the preceding sound is *hamzat al-istifhām* (interrogative particle) as in *ʔaʔal bintu maʔaka?* (is the girl with you?). Another situation where *hamzat al-waṣl* persists is in the word *ʔaymun* in oaths, as in *waymu Llāh / waymun*. It is retained in order to avoid ambiguity (*al-Kitāb*, 2 / 297).

forms, as in the following examples:

- a. *ʔinṭilāq* (outbreak),
ʔinḥibās (seclusion),
ʔinfirāj (relaxation),
- b. *ʔistikhrāj* (taking out),
ʔistiʕmāl (using),
ʔistifhām (questioning).

This systematic vowel harmony may be represented in the following form:



However with *hamzat al-qaṭʕ*, there is no vowel harmony, as in these examples:

- ʔaqribāʔ* (relatives),
ʔaqwiyāʔ (strong (pl.)).

When *hamzat al-waṣl* occurs in a verb form, the harmony of vowels is more systematic; the vowel immediately following the *hamzah* is / u / when the following vowel is / u /, and is / i / when the following vowel is an unrounded one. These are some examples:

1. *ʔuʕbud* (worship !),
ʔuqtul (kill !),
ʔunṭuliqa (a setting-off took place !),

ʔustukhrija (it was taken out).

2. a. *ʔiḍrib* (hit !),

ʔijlis (sit down !),

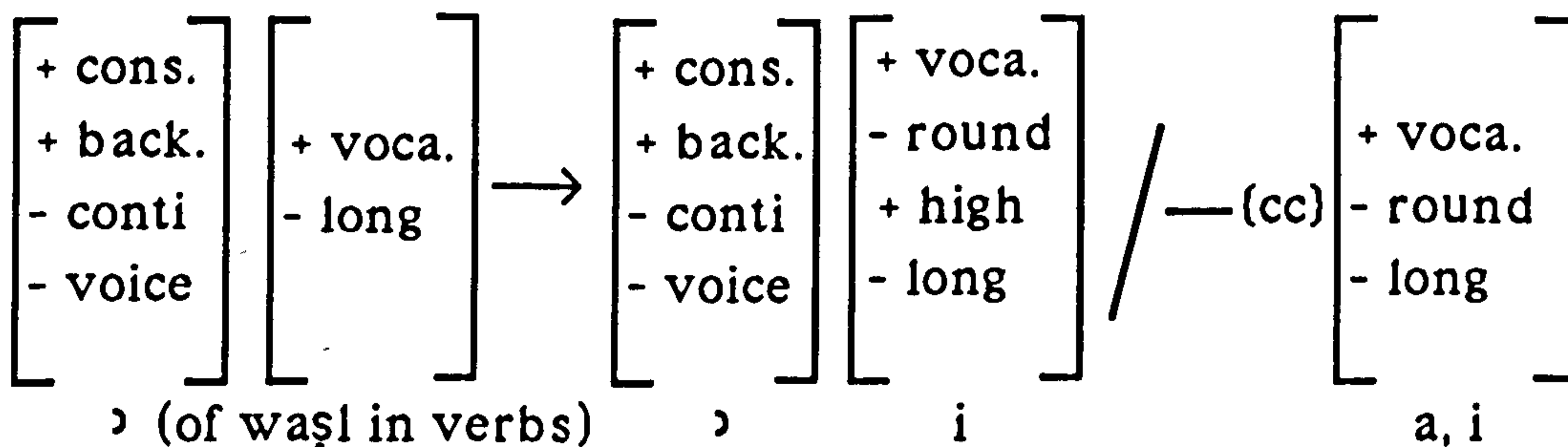
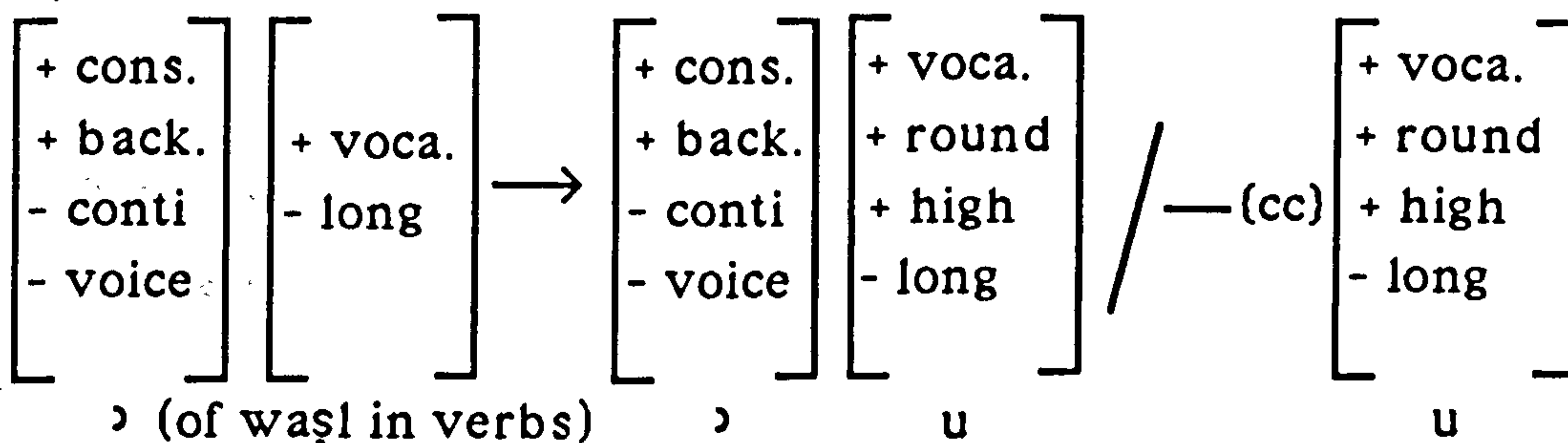
ʔinfir (go away !),

b. *ʔifham* (understand !),

ʔifraḥ (be happy !),

ʔibtaʕid (go away !).

Suitable forms for these types of harmony may be represented as follows:



Again these forms are connected with *hamzat al-waṣl* only. There is no harmony in similar circumstances with *hamzat al-qatʕ*, as in:

ʔaḍribu (I hit), and

ʔajlisu (I sit down).

The Arabic linguists detail the types of verbs in which hamzat *al-waṣl* occurs, as follows:

1. The past tense of a quinqueliteral verb: ʔinʕaṭafa (to turn).
2. The past tense of a sexiliteral verb: ʔistafhama (to ask).
3. The imperative of a triliteral verb: ʔilʕab (to play).
4. The imperative of a quinqueliteral verb: ʔintaḏir (to wait).
5. The imperative of a sexiliteral verb: ʔistaʕmil (to use).

According to az-Zamakhsharī, the pronunciation of *hamzat l-waṣl* as *hamzah* in continuous speech is not Arabic and is *laḥn*.⁵

B. Third person pronouns:

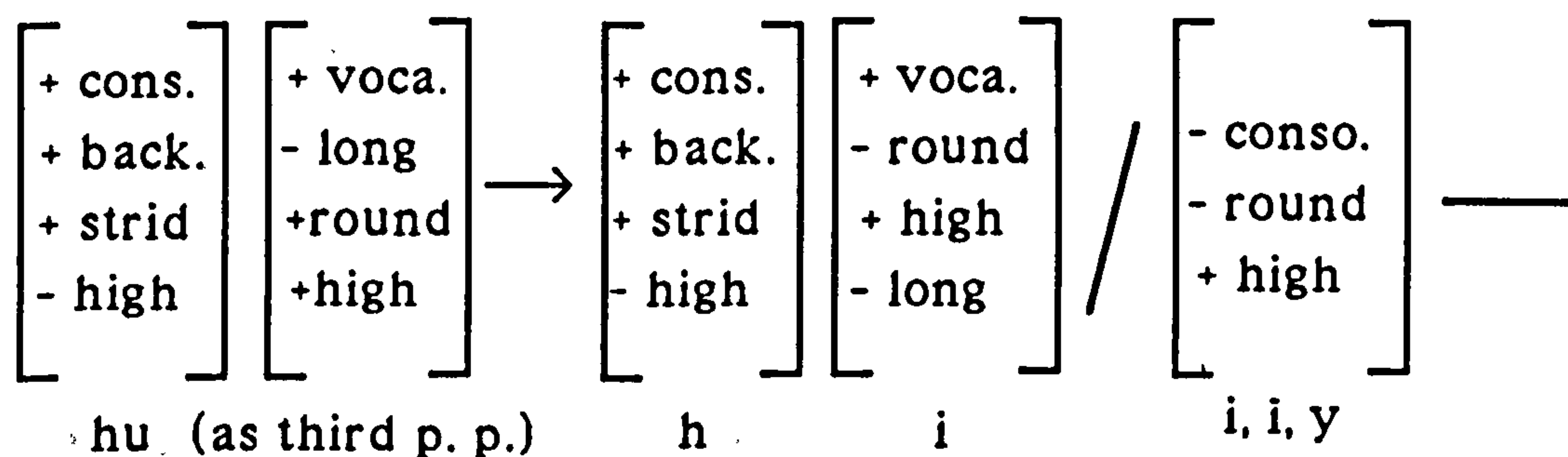
Vowel harmony occurs systematically with the third person pronoun. This pronoun includes all suffixes: *hā* (her): *hu* (him / it), *humā* (them (dual)), *hum* (them (masculine plural)), and *hunna* (them (feminine plural)). The following are some examples:

1. * *biḥu* → *bihi* (in it),
- * *fiḥu* → *fīhi* (in it),
- * *min ʕindiḥu* → *min ʕindihi* (from him),
- * *min kitābiḥu* → *min kitābihi* (from his book),
- * *ʕalayḥu* → *ʕalayhi* (on him / it),
- * *ladayhum* → *ladayhim* (with them),
- * *fī nādīhum* → *fī nādīhim* (in their club),
- * *min qāḏīḥu* → *min qāḏīhi* (from his judge).

⁵ *Sharḥ al-mufaṣṣal*, 9 / 137.

2. *kitābuhu* (his book),
rusūluhum (their (m) messengers),
buyūtuhunna (their (f) houses).
3. *kitābahu*,
rusulahum,
buyūtahunna,
qatalahu (he killed him),
sami'ahum (he heard them).
4. *ʾiqraʾhu* (read it),
lam yasma'hum (he did not hear them),
minhum (from them).

From the above mentioned examples, it is clear that the pronoun / *hu* / becomes / *hi* / if it is immediately preceded by / *i* /, / *ī* /, or / *y* /, without any other consonant intervening. This may be represented in the following form:



Regarding the vowel harmony here, some exceptions are reported, as follows:

- a. Some *Hijāzī* speakers would say: *bihu*, and *ʿalayhu* instead of *bihi*, and *ʿalayhi*. Ibn Kathīr read *fakhasafnā bihu wa*

*bidārihu l-ʔarḍa*⁶ (then we caused the earth to swallow up him and his house).

Some other speakers would extend the vowel harmony to the vowel following / m /, in / hum / in particular. Abū ʕAmr reads: *ʕalayhimi ʕ-ʕillah* (baseness has come upon them), and ...*ʔilayhimi ʕnayn* (... two to them)⁷ This harmony is known as *al-wakam*.

Ḥamzah - an Irāqī reader - reads *ʕalayhim*, *ʔilayhim*, and *ladayhim* as *ʕalayhum*, *ʔilayhum*, and *ladayhum* respectively⁸.

ʕĀṣim, as reported by Ḥafṣ, reads with dissimilation the following two verses:

mā ʔansānihu (did not cause me forget it), and

bi mā ʕāhada ʕalayhu ʔlāh (what God had agreed on).⁹

Regarding the rule of the examples in (≠ 4) above, vowel harmony occurs in some of the utterances of *Rabīʕah*; according to Sībawayh, they would say *minhim*. Sībawayh; however, rejected this kind of vowel harmony and called it bad Arabic. It is known as *al-waham*.

C. *ʔimruʔun* / *ʔimraʔan* / *ʔimriʔin*:

The word for man *ʔimruʔun* represents another type of systematic vowel harmony. The second vowel depends on the

⁶ *al-Lahajāt fi al-kitāb*, 105.

⁷ *al-Hujjah lil-qurrāʔ as-sabʕah*, 1 / 58.

⁸ *Ibrāz al-maʕāni min ḥirz al-ʔamāni*, 72.

⁹ *an-Nashr*, 1 / 305. *Hujjat al-qirāʔat*, 1 / 177.

last one. It becomes a high front before a high front, a high back before a high back, and a low before a low. Here are some examples:

huwa mruʔun samīnun (he is a fat man),

raʔaytu mraʔan samīnan (I saw a fat man),

mini mriʔin samīnin (from a fat man).

This type of vowel harmony is not violated by a pause, since deep representation of the final vowel is considered. The above examples are pronounced in pause as:

huwa mruʔ # (he is a man),

raʔaytu mraʔ #,

mini mriʔ #.

2. Non-Systematic:

A. *Faʕīl* form:

The *faʕīl* form is pronounced as *fiʕīl* by some Arabs as a dialectal variant. Some examples are:

a. *laʔīm* → *liʔīm* (ignoble),

saʕīd → *siʕīd* (happy),

shahīd → *shihīd* (martyr),

naḥīf → *niḥīf* (thin),

bakhīl → *bikhīl* (miserly),

raghīf → *righīf* (loaf of bread),

b. *kabīr* → *kibīr* (big),

karīm → *kirīm* (generous),

jalīl → *jilīl* (great).

Sībawayh¹⁰ and Ibn Jinnī¹¹ limit this phenomenon to cases where the second radical is a *ḥalqī* sound, as in (a) above, while az-Zubaydī¹² and al-Maṭlabī¹³ do not limit it to *ḥalqī* sounds, as in (b) above.

This kind of vowel harmony is associated by Sībawayh with the dialects of *Tamīm*, *Huḏayl* and a few other tribes. In fact, it is still heard in *Najdī* dialects.

Some people assimilate the vowel after the first radical to the vowel after the second radical in forms other than *faʿīl*, as: *ʿuṣiyy* → *ʿiṣiyy* (sticks), and *muntin* → *mintin* (stinking).¹⁴ Ibn Jinnī reports an alternative progressive assimilation in this case: *muntin* → *muntun*.¹⁵

B. C ≠ C → CVC / C ≠ CC (without pause):

When a word ends with a consonant and is followed by a word beginning with two consonants as a result of dropping *hamzat l-waṣl*, a short vowel is inserted at the end of the first word. This is part of the phenomenon of *iltiqāʾ as-sākinayn* (consonant cluster). This insertion is called *at-takhalluṣ min iltiqāʾ as-sākinayn* (avoiding consonant cluster). However, in pause, the contiguity of three consonants across word boundaries occurs, as in: *wal-ʿaṣr ≠ ʾinna* (by the time verily). The three

¹⁰ *al-Lahajāt fi al-kitāb*, 100.

¹¹ *al-Khaṣāʾiṣ*, 2 / 141-145.

¹² *Tāj al-ʿarūs*, 2 / 391.

¹³ *Lahjat Tamim wa ʾatharuhā fi al-ʿArabiyyah al-muwaḥḥadah*, 162-163.

¹⁴ *al-Lahajāt fi al-kitāb*, 101, 102.

¹⁵ *al-Muḥtasab*, 1 / 178.

consonants (š, r, ʾ) are not separated by a vowel; if no pause were made at the end of the first word, the *kasrah* there would be retained.

The separating vowel is most commonly / i /, as in these examples:

qālat ʾidrib → *qālati ʾdrib* (she said: "Hit!"),

min ʾibnika → *mini bnika* (from your son),

ʿan al-ʿilm → *ʿani l-ʿilm* (off / from the knowledge).

However, the separating vowel is not always / i /, it may be:

a. / u / if the first vowel in the second word is / u /, as in:

qālat ʾukhruj → *qālatu khruj* (she said: "go out!"),

ʾan ʾuqtulū → *ʾanu qtulū* (to kill (pl.)),

b. / a / after the preposition *min* when it is followed by the definite article *ʾal* only, as in: *mina l-qamar* (from the moon), even when the next vowel is / i /, as in: *mina l-ʿirqi* (from the root).

However, vowel harmony occurs here in the utterance of the people of *Najrān*, according to Abū ʿAmr and Sibawayh¹⁶, and of *Hawāzin* and *Huḏayl* according to Abū Ḥayyān¹⁷. They would say *mini l-Lāhi* instead of *mina l-Lāhi* (from Allah).

The inserted vowel after *ʿan*, a similar word to *min*, when followed by the definite article is / i /, as in: *ʿani l-qalam* (off...the pen). This difference is not easy to explain.

¹⁶ *al-Muḥtasab*, 1 / 283.

¹⁷ *al-Baḥr al-muḥit*, 3 / 185.

C. Changing the main or inflectional vowel to match other vowels in the neighboring word:

The verse *al-ḥamdu lil-Lāhi* (praise to God) is reported to have been read with both regressive and progressive vowel harmony, as follows: *al-ḥamdu lul-Lāhi* and *al-ḥamdi lil-Lāhi*. The verse *fīhi hudā* (it has guidance) is reported to have been read, with progressive vowel harmony, as *fīhi hidā*¹⁸.

D. Finally, in some words, accepted free variation may occur, as follows:

1. *al- ba^cə / al- ba^caə* (the sending out),
al- baḥr / al- baḥar (the sea),
an- nahr / an- nahar (the river),
aṣ- ṣakhr / aṣ- ṣakhar (the rock),
shibh / shabah (similar),
ʿashrah / ʿasharah (ten),
jahrah / jaharah (loudly),
2. a. *sunan / sunun* (ways),
ʾushar / ʾushur (lively),
 b. *burqa^c / burqu^c* (veil),
ʿunṣal / ʿunṣul (squall),
ʿunṣar / ʿunṣur (origin),
ṭuḥlab / ṭuḥlub (water moss),
3. a. *ḡimr / ḡamar* (flooding),
 b. *rajil / rajal* (walking),
ratil / ratal (elegant),

¹⁸ *al-Ḥujjah lil-qurrāʾ as-sabʿah*, 1 / 207.

- c. *al- kiəkiə / al- kaəkaə (?)*,
al- ʔiəlib / al- ʔaəlab (stones and earth),
jinjin / janjan (?),
- d. *jidad / jadad* (cutting dates from trees),
şirām / şarām (cutting dates from trees),
qiṭāʿ / qaṭāʿ (cutting),
4. *ʔukl / ʔukul* (foods),
rusl / rusul (messengers),
5. *ʕuşiyy / ʕişiyy* (rods),
6. *maysurah / maysarah* (left-side),
7. *subrūt / sibrit* (poor),
zunbūr / zinbīr (hornet),
8. *al- kiṣib / al- kuṣub* (lie),
9. *ḥujurāt / ḥujarāt / ḥajrāt* (rooms),
ḡurufāt / ḡurafāt / ḡurfāt (rooms),
xuṭuwāt / xuṭawāt / xuṭwāt (steps).

3. 2. 4. Vowel lengthening and shortening:

It has already been stated that Arabic has three cardinal short vowels and three cardinal long vowels. However, the short vowels may be pronounced shorter or longer than their normal duration. Likewise, long vowels may be pronounced shorter or longer than their normal duration. This topic is dealt with separately by scholars of *tajwīd* and incidentally by Arabic linguists.

A. Lengthening:

The increasing of vowel duration may take one of the following types:

1. $v \longrightarrow \bar{v}$:

The pronunciation of a short vowel is sometimes made longer to produce the corresponding long vowel. This phenomenon is known as *ishbāʿ* or *tamṭīṭ*¹ (expansion) as opposed to *ikhtilās* (the shortening of an already short vowel; slurring).

This type of increasing of vowel duration is not very common in Arabic. A few examples are reported in works on linguistics. Some of them are:

mina l-ʿayyāmī for *mina l-ʿayyāmi* (from the days) [at the end of a bayt],

lāma lāʿimū for *lāma lāʿimu* (a blamer blamed),

fa ʿanṣūru for *fa ʿanṣuru* (then I look at ...),

bi muntazāḥi for *bi muntazaḥi* (in a distant place),

¹ See for example: *al-Kitāb*, 2 / 297.

laḥmā shātin for *laḥma shātin* (the meat of a sheep).²

Most of the examples reported of this type by Arabic linguists undergo change as a result of metrical exigency. Thus it is not normal Arabic.

In the field of *Qirāʾāt*, also, the changing of the short vowel to its corresponding long vowel is limited, but more systematic.

All *qurrāʾ* pronounce the suffix *-hi* as *hī* and the suffix *-hu* as *hū*, when the sound immediately preceding it is a short vowel.³ This may be represented as follows:

— *hi* → *hī* / v —

Suffix pronoun

— *hu* → *hū* / v —

Suffix pronoun

Some examples are:

ʾummihi → *ʾummihī* (his mother),

ṣāḥibatihi → *ṣāḥibatihī* (his wife),

bihi → *bihī* (in it),

lahu → *lahū* (for him),

ʿindahu → *ʿindahū* (with him),

rusulahu → *rusulahū* (his messengers).

Ibn Kathīr was in the habit of doing this even when the pronoun was preceded by a long vowel,⁴ unless it was followed by a sequence of two consonants CC.

fīhī hudā (has a guidance),

² See for example *al-Muḥtasab*, 1 / 258-259, *al-Khaṣāʾiṣ*, 2 / 318, *Sirr al-faṣāḥah*, 80-81 and *al-Kitāb*, 2 / 328-329.

³ *at-Taysir*, 30.

⁴ *Ibid.* 29.

* *yaʿlamhū Allāh* (God knows it).

The reader Nāfiʿ read *ʿalayhi*, at every occurrence, in the *Qurʾān* as *ʿalayhī* (on him).

2. $v \longrightarrow \tilde{v}$

When the vowel of *hi / hu* is followed by a *hamzah*, the short vowel may not only become a long vowel but even an overlengthened one / \tilde{v} / as in:

ʾanna mālahu ʾakhladahū \longrightarrow *ʾanna mālahū ʾakhladahū*
(his wealth would make him immortal).

3. $\bar{v} \longrightarrow \tilde{v}$:

"A long vowel is considered as equal to a consonant plus a following vowel. That is to say : $\bar{v} = Cv$. This can be interpreted in terms of quantity.⁵ Furthermore, this long vowel may be extended up to six times its length. This over-lengthening is given different names by Arabic linguists and scholars of *tajwīd*.

The linguists call it *ishbāʿ*, which is, as we have seen, also applied to the lengthening of a short vowel. The scholars of *tajwīd* call it *madd*, which to the linguists simply refers to an ordinary long vowel; the latter is called *qaṣr* by the scholars of *tajwīd*. Thus the vowel in *lā* (no/not) is referred to as *madd* by the linguists and *qaṣr* by the scholars of *tajwīd*. Ibn al-Jazarī defines these terms in the following way: "The *madd* in this context is adding more length to that of normal *madd*".⁶

⁵ Bakalla, "The Contribution of The Arabs and Muslims to the study of Vowel Length", *Study of Sounds*, Tokyo: The Phonetic Society of Japan, 18 (1978).198.

⁶ *an-Nashr*, 1 / 313. For a similar description, see *Ibrāz al-maʿāni*

The topic of over-lengthening is not discussed in linguistics in detail. However in *Qirāʾāt* material, a separate chapter is always devoted to it. The following are some environments where a long vowel becomes over-long:

a. $\bar{v} \longrightarrow \tilde{v}$ / before *hamzah*:

When a long vowel occurs immediately before a *hamzah* / ʾ /, it is pronounced with more length, whether the influenced sound and the conditioning sound occur within the same word or across morpheme or word boundaries.. Here are some examples :

1. *shāʾa* (to wish),
sīʾa (grieved),
sūʾ (evil).
2. *yāʾ ukhta Hārūn* (Oh. sister of Harun),
ya banī ʾisrāʾil (Oh. children of Israel),
ʾiʿlamū ʾanna ʾl-ʾāha (know that God).

The lengthening with *al-hamz al-muttaṣil* (/ \bar{v} / and / ʾ / in the same word) is greater than with *al-hamz al-munfaṣil* (/ \bar{v} / and / ʾ / not in the same word). All *qurrāʾ* read with extra-length in both cases, with the exception of Ibn Kathīr ⁷ who reads with extra-length in the first case only.⁸ However Ibn al-Jazarī says: "All scholars agree that the *madd* in both cases is required, although they actually do not agree about how much the extra-length should be. Nonetheless, in these two types (*muttaṣil* and *munfaṣil*), all *qurrāʾ* agree that

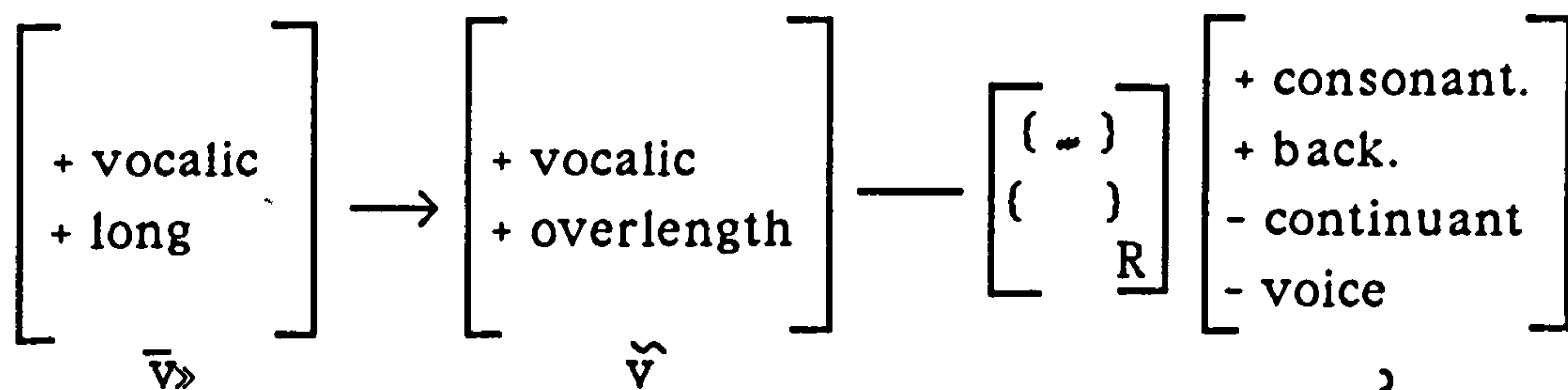
min ḥirz al-ʾamānī, 83, and *al-Kashf*, 1 / 45 , etc.;

⁷ And Abū Jaʿfar, according to Ibn al-Jazari (*an-Nashr*, 1 / 321).

⁸ *al-Kashf*, 1 / 56.

the *qaṣr* (not giving extra-length to the long vowel) is not accepted".⁹

A suitable form for this over-lengthening may be represented as following:



b. $\bar{v} \rightarrow \tilde{v}$ / before *mushaddad* (geminated) consonants:

When a long vowel is immediately followed by a geminated sound, it is pronounced with extra-length¹⁰. Here are some examples:

aḍ- ḍāllīn (who go astray),

dābbah (an animal),

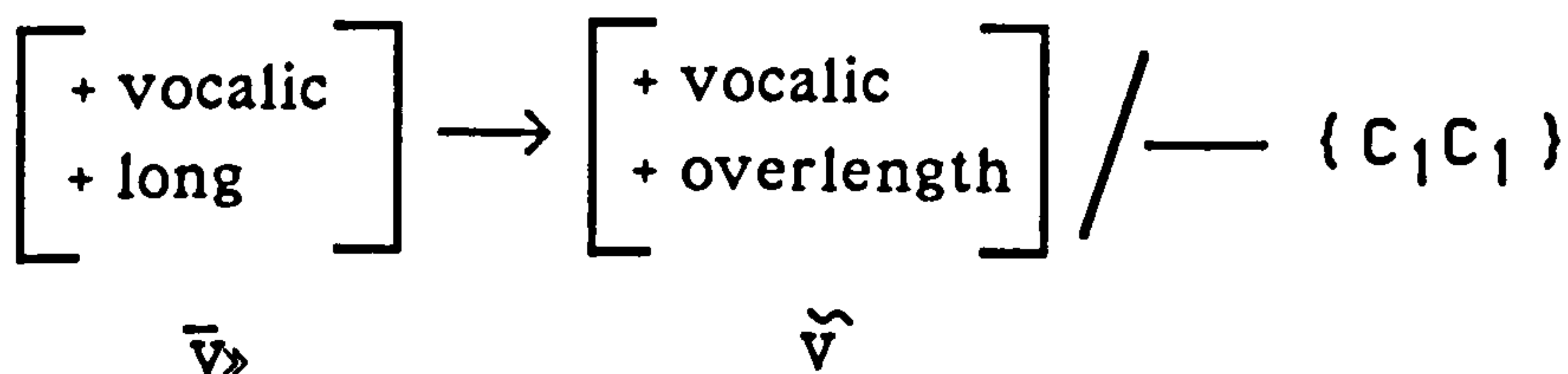
aṣ- ṣāxxah (the deafening noise),

ʔa *tumiddūnnī* ? (do you give me support ?),

ʔa *taʔmurūnnī* ? (do you order me ?).

This type of *madd* is called *al-madd as-sākin al-lāzim*.¹¹

The following form may represent it:



⁹ *an-Nashr*, 1 / 314.

¹⁰ / i / does not occur in this environment.

¹¹ *an-Nashr*, 1 / 317.

c. $\bar{v} \longrightarrow \tilde{v}$ / in pre-pausal position:

When a long vowel occurs in pre-pausal position, the extra-length is applied. This type of lengthening is called *al-madd al-ʿāriḍ lis-sukūn*. It usually occurs at the end of *Qurʾānic* verses but it is not limited to this case. The following are examples of such lengthening :

ar-Raḥmānu \longrightarrow *ar-Raḥmāñ* ≠ (the most merciful),

bi sultānin \longrightarrow *bi sultāñ* ≠ (with a power),

taʿlamūna \longrightarrow *taʿlamūñ* ≠ (you know),

Hūdīn \longrightarrow *Hūd* ≠ ,

al-mustaqīma \longrightarrow *al-mustaqīm* ≠ (the straight (path)),

nastaʿīnu \longrightarrow *nastaʿīñ* ≠ (aid we seek).

Unlike the preceding types of lengthening, this type is not necessarily given extra-length. It may be pronounced with normal length, or with more or less extra-length. A suitable form may be represented as:

$$\begin{array}{c} \left[\begin{array}{l} + \text{vocalic} \\ + \text{long} \end{array} \right] \longrightarrow \left[\begin{array}{l} + \text{vocalic} \\ + \text{overlength} \end{array} \right] / \text{---} (+ \text{consonantal}) \neq \\ \bar{v} \qquad \qquad \qquad \tilde{v} \end{array}$$

d. $\bar{v} \longrightarrow \tilde{v}$ / after *hamzah* in the reading of Warsh only:

He does this only when *hamzah* is not immediately preceded by a consonant.¹² The following examples represent his reading:

ʾāmana \longrightarrow *ʾāñmana* (to believe),

¹² *al-Kashf*, 1 / 46-7.

wa ʾāṭaynā → *wa ʾāṭaynā* (and we gave),
ʾūṭiya → *ʾūṭiya* (he/it was given),
ʾīmān → *ʾīmān* (believing),
muttakiʾīn → *muttakiʾīn* (reclining),
al- Qurʾān → * *al- Qurʾān* (the *Qurʾān*),
masʾūlā → * *masʾūlā* (responsible).

e. $\bar{v} \rightarrow \tilde{v} / \text{---} C$ (restricted to *fawātiḥ as-suwar*):

This is a special case in prolongation, mainly in *al-ḥurūf al- muqattaʿah fī fawātiḥ as-suwar* (the separate phonemes, which have long vowels, at the beginning of some *sūrahs*). They are seven in number and are pronounced with prolongation by all *qurrāʾ*¹³:

1. *ṣād* → *ṣād*,
2. *qāf* → *qāf*,
3. *nūn* → *nūn*,
4. *sīn* → *sīn*,
5. *lām* → *lām*,
6. *kāf* → *kāf*,
7. *mīm* → *mīm*.

f. $y / w \rightarrow \tilde{y} / \tilde{w} /$ before *hamzah*, or before geminated consonants, in pre-pausal position, and in *fawātiḥ as-suwar*:

Prolongation is also applied to glides when they occur in an environment where a long vowel takes extra-length. Here are some examples:

ʿayn → *ʿayn* (the letter / ʿ / in *fawātiḥ as-suwar*,

¹³ *Ibrāz al-maʿāni*, 123.

shay'in → *shaỵ'* ≠ (thing),

Qurayshin → *Quraỵsh* ≠,

ʔas-saw'i → *as-saẉ'* ≠ (disaster),

khawfin → *khaẉf* (fear).

Concerning the prolongation of glides, Abū Shāmah says: "The *lin* letters are not given extra-length when there is no *hamzah* or *sukūn*".¹⁴ He considers those who read the following examples with extra-length as mistaken:

ʕalayhim (on them), *ʔilayhim* (to them), *ladayhim* (with them), *aṣ-ṣayfi* (summer), *al-bayti* (house), *al-mawtu* (death), and *al-khawfu* (fear). However the last four examples may be pronounced with extra-length in pause¹⁵.

But when these glides and / ʔ / occur not in the same word, the lengthening is not accepted, as in:

khalaw ʔilā → * *khalaẉ ʔilā* (be alone with),

ʔibnay ʔā'dama → * *ʔibnaỵ ʔā'dama* (the two sons of Adam).

Regarding the prolongation of vowels, some points may be made:

1. Two questions arise here: how much longer can a long vowel be made? What measurement do the *qurrā'* use to differentiate between the various types of lengths?

The long vowel is regarded as equal to two *ḥarakahs* (movements, short vowels / v /) as the minimum length. The extra length may be the equivalent of two *alifs* (twice the

¹⁴ *Ibrāz al-ma'āni*, 125.

¹⁵ *Ibid.*

normal length of / ā /), four *alifs*, five *alifs*, or six *alifs*; this last is the maximum length, which is sometimes called *ʾifrāṭ* (excess).¹⁶

Qurʾānic teachers sometimes use simple, practical, methods to help learners to recognize and differentiate between the various gradation of vowel-quantity. The time it takes a reader to open and close his hand is equal to the duration of a normal long vowel.

2. Lengthening is more prolonged before geminated consonants than in any other circumstances, then comes lengthening before / ʾ / in the same word. These two types of prolongation are required in the reading of the *Qurʾān*, according to all *qurrāʾ*.¹⁷

3. Elongation of a long vowel after *hamzah*, in the reading of Warsh, is greater than that of a glide before *hamzah*. As a result, / ā / and / ū / in the following two examples are given extra-length, while / w / is not¹⁸:

sawʾātihimā → to Warsh [*sawʾā̃tihimā*] (their (dual) shame),

al-mawʾūdati → to Warsh [*al-mawʾū̃dati*] (the infant female buried alive).

4. When the same type of *madd* occurs twice in the same word, the reader is recommended by some scholars to give extra-length to both of them¹⁹, as in the following examples:

ʾtuḥājjūnni ((come) ye to dispute with me),

¹⁶ See *an-Nashr*, 1 / 321-326.

¹⁷ *an-Nashr*, 1 / 351.

¹⁸ *al-Kashf*, 1 / 49.

¹⁹ *al-Burhān fi tajwid al-Qurʾān*, 70.

alif lāmm mīm (*alif lām mīm*),

ʾāḥl-ʾāḥna (now).

Equal lengthening is applied in similar situations within the same sentence. Therefore, the *alif* after / h / in both words *hā ʾantum* (here you are) and *hā ʾulāʾi* (these) is read with the same degree of length²⁰, for the sake of vowel harmony.

5. If there exist two circumstances of lengthening, in the opinion of the majority the stronger only operates. Some, on the other hand, observe both.

B. Shortening:

A long vowel may be pronounced shorter and thus made into a short vowel. A few words are reported to have been so uttered, in *samāʿi* cases, such as *an-nujum* for *an-nujūm* (the stars) and *al-ḥuluq* for *al-ḥulūq* (throats). Some shortening of vowels is made systematically, and in *qiyāsī* cases. Here are some of them:

1. / *Mā* / (what...) is pronounced / *ma* / when preceded by a genitive particle:

- * *bī mā* → *bī ma* (in what),
- * *ʿan mā* → *ʿan ma* (what),
- * *lī mā* → *lī ma* (why),
- * *ʾilā mā* → *ʾilā ma* (until what),
- * *ḥattā mā* → *ḥattā ma* (until what).

2. When a word ends with a long vowel and is followed by a

²⁰ *an-Nashr*, 1 / 356.

word starting with two consonants, the long vowel is pronounced short to protect the syllabic structure of the language, which prohibits the occurrence of three *sākins* together:

- * *fatā l-mustaqbal* → *fata l-mustaqbal* (the young of the future),
- * *ǧū l-ʿilmi* → *ǧu l-ʿilmi* (the knowledgeable person),
- * *yadʿū ar-rajulu* → *yadʿu r-rajulu* (the man invites),
- * *fī al-ʾarḍi* → *fī l-ʾarḍi* (in the earth),
- * *yamshī aṭ-ṭiflu* → *yamshi ṭ-ṭiflu* (the child walks),
- * *muṣṭafā+wn / yn* → *muṣṭafawn / muṣṭafayn* (Mustafas (plural, dual)).

However, when the long vowel in question is a dual marker, it cannot be shortened because that would give rise to ambiguity in the sense: *qalamā aṭ-ṭālib* (the two pens of the student) is not pronounced *qalama aṭ-ṭālib*, because that would sound identical with the singular.

3. The first person pronoun / ī , nī / at the end of words may be shortened to / i /: *yā ʿibādī* (oh, my servants) may be pronounced as [*yā ʿibādī*], and *fattaqūnī* (fear me) may be pronounced as [*fattaqūni*].
4. A radical may sometimes be shortened , e. g:
 - al-ḡawānī* (the beautiful girls) may be pronounced as [*al-ḡawāni*],
 - al-ʿawālī* (the high places) may be pronounced [*al-ʿawāli*],
 - al-muhtadī* (the guided one) may be pronounced [*al-muhtadi*].

3.2.5. Emphatic / 5 /:

alif at-tafkhīm is a secondary accepted and recommended sound by both Arabic linguists and scholars of *tajwīd*. Its value lies between pure / ā / and / ū /. In other words, it is / a / pronounced with a measure of lip-rounding. Ibn Jinnī says: "As to *alif at-tafkhīm*, it occurs between the *alif* and the *wāw*."¹ It is worth mentioning that *tafkhīm* is used also to describe the pronunciation of *alif* and *fatḥah* without *imālah*, as we have seen earlier; however, this is not meant here. Some examples of *tafkhīm* here are:

ṣalāt → ṣal5t (prayer),

zakāt → zak5t (purity),

ḥayāt → ḥay5t (life).

The question here is: what type of sound is it ? Is it:

1. an independent phoneme ?
2. a free variant of / ā / ?
3. an allophone of the phoneme / ā / ? or
4. a dialectal variant ?

None of the Arabic linguists or scholars of *tajwīd* claim that this sound is an independent phoneme or a free variant of / ā /.

Three possible circumstances may be listed for determining whether / 5 / is an allophone of / ā / or not:

- a. it occurs after emphatic sounds,
- b. it occurs before *tāʾ at-taʾnīth al-marbūʿah*,

¹ *Sirr ṣināʿat al-irāb*, 1 / 56.

c. it is a *wāw* in deep representation.

As to (a), this is not an exclusive circumstance, because such words as *zak5t*, *ḥay5t*, and *sal5m* (peace) may be read with *tafkḥīm*, although no emphatic sound is present. Moreover, many words in which emphatic sounds precede / a / are pronounced with *imālah*, which has been said to be the opposite of *tafkḥīm*. Some of these words are:

qēma (to stand up),

ṭēba (to be good),

Ṭēhē (Taha).

This indicates that *alif* is not necessarily to be emphasized after emphatic sounds. It also indicates that the statement of Ibn al-Jazarī that "*alif* complies with whatever precedes it, so that it [in itself] can be described neither as a mellow nor an emphatic sound"² is not accurate.

As for (b), it is clear that all words reported to have been pronounced with *alif at-tafkḥīm* and written with *wāw* in the *Qurʾān* end with *tāʾ at-taʾnīth al-marbūʿah*, except *ar-ribā* (interest). Concerning the occurrence of / 5 / in the *Qurʾān*, ad-Dānī lists eight words: *ṣal5t*, *zak5t*, *ḥay5t*, *rib5*, *ghad5t* (morning), *mishk5t* (lamp), *naj5t* (safety), and *man5t* (the name of an idol in the *Jāhiliyyah* period).³

Again, it is clear that this circumstance is not exclusive. It is violated by such words as *rib5*, *sal5m*, and *q5ma*.

Orthographically, there appears to be some connection

² *an-Nashr*, 1 / 203.

³ *al-Muqni' fi ras'm maṣāḥif al-amṣār*, 57.

between writing *alif* as *wāw* and the presence of *tā'* *at-ta'nīth al-marbūṭah*, in the *Qur'ān*, except in *ribā*, as stated above. This type of connection is behind writing *alif mamdūdah* in words such as *marḍāt* (satisfaction), since the *tā'* is *maftūḥah* here.

As to (c), this is clearly an exclusive circumstance, because all reported examples have *wāw* in the root, except one word which is difficult to account for, namely *salām*.

<u>Words</u>	<u>Root</u>
<i>q5ma</i>	<i>QWM</i>
<i>ṣal5t</i>	<i>ṢLW</i>
<i>zak5t</i>	<i>ZKW</i>
<i>ḥay5t</i>	<i>ḤYW</i>
<i>rib5</i>	<i>RBW</i>
<i>ḡad5t</i>	<i>ḡDW</i>
<i>mišk5t</i>	<i>ŠKW</i>
<i>naj5t</i>	<i>NJW</i>
<i>man5t</i>	<i>MNW</i>
<i>da^c5</i>	<i>D^cW</i>
<i>ḡaz5</i>	<i>ḡZW</i>
<i>sal5m</i> ⁴	<i>SLM</i>

This indication of its being a conditioned allophone of the phoneme / ā / is accepted by some modern linguists like K. Samaan ⁵. However, to Sibawayh ⁶ and a few modern Arabic

⁴ *Sirr ṣinā'at al-irāb*, 1 / 52.

⁵ *Linguistics in The Middle Ages*, 40.

linguists⁷, the phenomenon is a dialectal variant, which is specifically associated with the *Ḥijāzī* dialect.

As a conclusion, we may say that *alif at-tafkhīm* is a dialectal variant specific to the usage of *al-Ḥijāz*. However, within this dialect, the / 5 / sound is a conditioned allophone of / ā /. That is to say that a speaker from the *Ḥijāz* may pronounce / ā / as / 5 / only if this *alif* is a *wāw* in deep representation.

6 *al-Kitāb*, 2 / 404.

⁷ See as an example Abū Bakr al-Khalīfah, *The Text of the Qurʾān...*, 157.

Conclusion

As a conclusion, the following points may be stated:

1. The description of the point and the manner of articulation of the twenty-eight primary Arabic sounds given by the early Arab linguists is quite accurate. The modern linguists, with advanced machine facilities, arrive at the same description, except of three sounds, for which they have a different description, in the case of voicing. However we have adduced some evidence that the description of the early Arabs is likely to be correct.
2. The term "assimilation" is not exactly equivalent to the Arabic term *idghām*, even though it is the most commonly used approximation. The term *taqārub al-aṣwāt* is a closer term, although, it is not commonly used.
3. The determination of sound changes is not limited to phonetic and phonological rules; morphological and syntactical conditions may also be involved in both causing and inhibiting assimilation.
4. Regarding assimilation between Arabic consonants, 183 examples, used in this thesis, are examined to see which type or types of assimilation occurs more commonly than others. Repetition is avoided in these examples as far as possible. The frequency of these types of assimilation is shown in the following table:

Type of assimilation	Number of frequency
strong → weak	64
weak → strong	119
voiced → voiced	67
voiced → voiceless	57
voiceless → voiceless	18
voiceless → voiced	41
stops → stops	24
stops → continuant	32
continuant → continuant	88
continuant → stops	39
front → back	59
back → front	40
homorganic	84
progressive	20
regressive	163
complete	130
partial	53
compulsory	39
optional	144
within the same word	67
across word boundaries	116
contiguous	163
distant	20

From this table, the dominance of consonants may be restated as follows:

A. Strengthening and weakening:

When two sounds undergo assimilation, the weaker is more commonly changed to the stronger. However the converse also occurs. Out of a total of 183, in 119 cases of assimilation is the sound strengthened, while only in 64 cases is it weakened.

1) Voicing and devoicing:

The behavior of voiced consonants with unvoiced ones is not as was expected, since in 57 cases, voiced consonants are changed to unvoiced consonants and in 41 cases unvoiced consonants are changed to voiced consonants. However in 67 cases voiced consonants are changed to other voiced consonants, and in only 18 cases unvoiced consonants are changed to other unvoiced consonants.

2) Continuant and non-continuant consonants:

In spite of the fact that stops are stronger than non-stops, it is found that in 39 cases consonants are strengthened by changing continuants to stops, and in 32 cases consonants are weakened by changing stops to continuants. However in 24 cases stops are changed to other stops, and in 88 cases continuants are changed to other continuants.

B. Direction of assimilation:

- 1) Consonants assimilate to homorganic consonants more than they do to consonants articulated forward or backward of

themselves. The number of cases in which this occurs is 84. The number of cases of sounds assimilating to other sounds articulated further back is 59, of which 4 involve *ḥalqī* sounds. The number of cases of sounds assimilating to other sounds articulated forward is 40.

2) Progressive and regressive:

The occurrence of regressive assimilation is much more frequent than that of progressive assimilation. The number of cases in which regressive assimilation is involved is 163, while in only 20 cases is progressive assimilation involved.

C. Complete and partial assimilation:

Complete assimilation is more frequent than partial assimilation. The former occurs in 130 cases, and the latter occurs in 53 cases, of which 30 involve the *ikhfāʾ*: the assimilation of the vowelless / n / to fifteen sounds within the same word as well as across word boundaries.

D . Compulsory and optional assimilation:

Optional assimilation occurs more frequently than compulsory in Arabic; therefore, in 144 cases out of 183 assimilation is optional, and in only 39 cases is it compulsory; of them 15 involve the *iftaʿala* form, 13 involve the assimilation of the definite article / al- / to the *shamsi* sounds, and 5 involve the assimilation of the vowelless / n / to sonorant sounds.

E. The assimilation of sounds occurs in across word boundary position more frequently than it does within the same word. 116 cases have the assimilated consonant and the conditioning consonants in two separate words; 67 cases have both consonants in the same word, and only 22 of these are involve radicals; the rest occur across morpheme boundaries.

F . Contiguous and distant assimilation:

The influence of contiguous consonants upon each other is much greater than when they occur distantly. In 163 cases, the assimilating and the conditioning consonants are close to each other, and only in 20 cases are they separated by other sounds; even in this case, 17 of them involve *al-idghām al-kabīr*, which is mostly associated with the reading of Abū ʿAmr.

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