

# ʔidyām ‘Assimilation’, mud‘āraṣah ‘Resemblance’ and Phonetics in Sībawayh

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## ABSTRACT

Sībawayh characterized assimilation in Classical Arabic of the 8<sup>th</sup> century under two modalities, ʔidyām ‘total assimilation’, which occurs in segments that share the same cavity and exit or adjacent exits, and mud‘āraṣah ‘resemblance’, which occurs in segments that share only some features but all their features.

## 2.1 THROAT CAVITY

cavity	muxrag ‘exit’
throat 01	ʔ, h, A / ʕ, ʕ, ʔ, ʕ
02	ʕ, ḥ / ʕ, ḥ
03	ʕ, x / ʕ, ḥ

Throat Cavity

## 1 INTRODUCTION

In pushing back the attempts of linguists at descriptions of sound systems, one is pleasantly surprised to read in the treatises of the Arab linguists their contributions to this endeavor. The linguistic movement among the Arabs started, seriously, in the 8<sup>th</sup> century, in the southern part of modern Iraq, principally in city of Basrah and its outskirts. The amount of linguistic literature from that locale of that time is abundant and variant. The linguistic activity, not unexpectedly, focused exclusively on Arabic. These descriptions took into account its phonetics. The abundance of literature on linguistic analyses of Arabic from this period is only matched by the meticulous details that these phoneticians included in their treatises. In this presentation the focus will be on the phonetic treatise or treatment of Arabic by Sībawayh (177H/793 A.D.), the most eminent linguist. He is the linguist who wrote the first analysis of Arabic in all its detailed linguistic aspects. His analysis takes into account the fulness of the language from syntax to phonetics. In his ʔal-kitāb ‘the book’.one finds detailed analyses of almost all aspects of Arabic, This presentation will look at the material that deals with the phonetics of Arabic assimilation.

## 2 SPEECH CAVITIES AND EXITS

The exits play a crucial part in the processes of articulation and the constraints and freedoms of assimilation that are part of the sequential execution of speech. Let us take the exits in each cavity separately in order to be able to notice the peculiarities of each.

Each cavity had a certain number of exits, and within each cavity, the segments produced at all exits, or even within one exit, were not all equally rated. The throat cavity had three exits, the lowest exit, i.e. the farthest from the mouth cavity, the middle and the highest, i.e. th closest to the mouth cavity. The segments of the lowest exit [ʔ, h, A / ʕ, ʕ, ʔ, ʕ], according to Sībawayh, do not assimilate to each other, nor do other segments assimilate to them. If there is any assimilation at all, it would be a member of this class of segments that may assimilate to a segment on the next higher exit, i.e. to one of the segments of the middle exit [ʕ, ḥ / ʕ, ḥ]. The direction of assimilation is in favor of the higher exit than the lower exit. In this case there is no assimilation in the reverse order.

### 1. [h] → [ḥ]

ʔigbah ḥamalan → ʔigbaḥ- ḥamalan ‘confront Hamal’  
Derenbourg[1] (Vol. II. p. 462, L.7)

The reverse is not acceptable:

ʔigbah ḥamalan → \*ʔigbah-hamalan (Vol. II. p. 462, L.8)

### 2. [ʕ] → [ḥ]

ʔigtaṣ ḥamalan → ʔigtaḥ-ḥamalan ‘cut Hamal’(Vol. II. p. 463, L.3)

The [ḥ], however, does not assimilate to the [ʕ] as in:  
ʔimdaḥ ṣarafah → \*ʔimdaṣṣarafah ‘praise ṣarafah’

3. [ʏ] [x]

*ʔidmaʕ xalafa* → *ʔidmax-xalafa* ‘strike Khalafa’ (Vol. II. p. 463, L.10)

4. *ʔislax ʕanamaka* → *ʔislaʕ-ʕanamaka* ‘slaughter your sheep’ (Vol. II. p. 463, L.15)

## 2.2 LIP CAVITY

cavity		<i>muxrag</i> ‘exit’
lips	04	f/ف
	05	b,m,w/ب, م, و

The Labial Cavity

The division of lip cavity into two exits here provides the foundation for degrees of the acceptability of assimilation, non-assimilation and the direction of assimilation between the labial sounds. [m] does not assimilate to any other sounds. The discussion will focus on the segments of the same exit and those of adjacent/different exits, i.e. is about the two segments that are produced at two different exits. i.e. [f] and [b]. In keeping with the principle that the segments closer to the mouth will not assimilate to the segments that are farther away from the mouth, in this case the [f] will not assimilate to the [b], but if there is any assimilation, it will be the [b] that will assimilate to the [f]. This process parallels what occurs in the throat cavity which had greater number of exits than the labial cavity.

5. [m] does not assimilate to any other sounds

[b] → [m] (Vol. II. p. 461, L. 12),

*ʔiṣḥab maṭaran* → *ʔiṣḥam maṭaran* ‘accompany Matar’

6. [f]

[b] → [f] (Vol. II. p. 461, L. 16)

*ʔiḍḥab fiy* → *ʔiḍḥaf- fiy* ‘take away, remove’

The principle of assimilation of the farther to the closer to the mouth exits is maintained and the pattern of considering some segments heavier than others due to their exits or their feature composition is manifest in the assimilation of segments in the throat and lip cavities.

## 2.3 MOUTH CAVITY

cavity		<i>muxrag</i> ‘exit’
	06	ʕ/ق
<b>m</b>	07	k/ك
	08	g,ṣ,ʕ/ج, ش, ڭ
<b>o</b>	09	dʕ/ض
	10	l/ل
<b>u</b>	11	n/ن
	12	r/ر
<b>t</b>	13	ʔ,d,t/ط, د, ت
	14	z,s,ʕ/ز, س, ڭ
<b>h</b>	15	ḏ,ḥ,θ/ظ, ذ, ث

Mouth Cavity

The assimilation that occurs between the letters of the mouth at different exits is a great deal freer than what occurs at the exits of the other two cavities. There is, first of all, the freedom to assimilate among all the segments of the same exit in either direction. There is also freedom to assimilate to the letters of the adjacent exits within the mouth cavity with equal freedom and in both directions. This freedom of assimilation is greater than in the other two cavities. As Sībawayh will state so often throughout this treatise: that assimilation, in principle, is for the letters of the mouth, (Vol. II. p. 461. L. 14) and the letters of the throat are not in principle for assimilation (Vol. II. p. 462. L. 8). This, of course, does not mean absolute freedom, since exit is not the only phonetic parameter that is relevant to these process. Assimilation between the letters of the mouth at the same exit: e.g.

7. [ʔ] → [d] (Vol. II. p. 468, L.3)

*ʔiḏbiṭ dalama* → *ʔiḏbid-dalama* ‘grab Dalama’

8. [d] → [t] (Vol. II. p. 468, L.11)

*ʔunʕud tuṭama* → *ʔunʕut-tuṭama* ‘criticize Toama’

9. [t] → [ʔ], e.g. (Vol. II. p. 468, L.12)

*ʔinṣat ṭāliban* → *ʔinṣaṭ-ṭāliban* ‘describe a student’

Assimilation between the letters of the mouth at different exits:

10. [t] → [θ] (Vol. II. p. 470, L.8)

*ʔinṣat θābitan* → *ʔinṣaθθābitan* ‘describe Thabit’.

11. [θ] → [t] (Vol. I. p. 470, L.8)

*ʔibṣaθ tilka* → *ʔibṣattilka* ‘send that-f’.

There are, then, different degrees of acceptability of an assimilation depending on its exit, e.g. whether it is closer to the throat or farther inside the mouth cavity. At the exit farthest in the mouth, assimilation is more acceptable when the farther letter assimilates to the more interior letter, and the *mahmuus* assimilates to the *maghuur* at this exit. e.g. [G] → [k] is more acceptable than [k] → [G]. In brief then, there are two polarities to the assimilation, there is a greater force towards assimilation the closer one gets to the mouth cavity letters, and there is a weaker one for assimilation the farther one gets from the mouth cavity and towards the lip or throat cavities. Thus:

Assimilation:     **lip** → **mouth** ← **throat**  
 Less Assimilation:     **lip** ← **mouth** → **throat**

### 3. FEATURES

Features have become the common currency in contemporary phonetic and phonological discussions since the publication of Jakobson, Halle Fant [2] and Chomsky and Halle[3]. This was not the case until very recently. Lest we overlook what the more ancient traditions have said and contributed to this area of phonetics, for Arabs, it was the 8<sup>th</sup> century. here is the list of Sībawayh's sixteen features that characterize the letters of Arabic: *maghuwr* 'loud', *mahmuws* 'muted', *šadiyd* 'tight', *rixw* 'loose', *munħarif* 'deviant', *ħunnah* 'nasality', *mukarrar* 'repeated', *layyin* 'soft', *ħāwi* 'falling', *muṭbāG* 'covered', *munfatih* 'opened', *mustaħliy* 'raised', *mustaħiy* 'extended', *šafiyir* 'whistle', *bayna bayna* 'in between', *tafaššiy* 'spread'.

#### 3.1 *muḏāraħah* 'resemblance'

The sharing of one or several features among a class of segments across cavity and exit boundaries, provides a basis for the or partial assimilation that is observed to occur in the sequences of Arabic, it is called *muḏāraħah* 'resemblance'. In the sequences of the language, segments adjust to their contexts by sharing an articulatory feature that they did not share before. That is to say the sharing of features contributes to the ease of articulation, like two *mahmuws* 'muted' segments in a cluster are easier to pronounce than two *maghuwr* 'loud' segments. *maħahum* → *maħħum* 'with them'. Segments are made *muṭbāGah* 'covered' due to the context, e.g. [s] → [š] when occurring, in a word that has [t] a segment from a different but adjacent exit, in a word that has a [G], a segment in the same cavity, but of a different and distant exit, and also when occurring in a word that has either [x] or a [y] segments considered of a different cavity:

12. *muṣṭabirin* → *muṣṣṭabirin* 'patient', (vol 2. p. 478, L.10)

13. *suGtu* → *ṣuGtu* 'I drove',

In cases of non-total assimilation then, Sībwayh invokes one or another features or a constellation of features that are somehow instrumental in causing changes in segments that are not total, but attain the ultimate purpose of ease of articulation by way of partial assimilation. Examples of such a change;

14. *ħiṣṭabara* → *ħiṣṣṭabara* 'he persevered' (II p. 476, L22)

15. *ħal-taṣṣdiyir* → *ħal-taḏdiyir* 'the export' (II p. 477, L3)

#### 3.2. *ħiG* 'heaviness'

This is not an easy concept to capture abstractly. Those that never assimilate or put restrictions on their assimilation are considered heavier than those that do not put such restrictions. there are segments that are called heavy.

##### 3.21. *Hamzah* [ʔ] and *ħalif* [A]

Are heavy segments, and do not assimilate to any other segment (vol 2. p. 460, L.9 & 12). They are from the deepest exit in the throat.

##### 3.22 *maghuwr* 'loud' and *mahmuws* 'muted'

are the major phonetic distinctions *Mahmuws* is lighter than *maghuwr*. So the two [ħħ] are lighter than two [ħħ].

16. *maħa + hum* → *maħħum* 'with them' (vol 2. p. 462, L.18)

17. *maħa + hum* → \**maħħum* 'with them'

##### 3.23 *mukarrar* 'repeated'

Is a features of [r] which is a member of the class [r,l,n] But due to its repeated nature, it will not assimilate to the members of its class but they assimilate to it.: (vol 2. p. 470, L.18.

18. *ħal raħayta* → *ħarraħayta* 'Did you see?' (Vol. 2. p. 461, L.23)

19. *man raħayta* → *marraħayta* 'Whom did you see?' (Vol. 2. p. 462, L.1)

### 3.24. *ṣafīyr* ‘whistle’ feature

Characterizes [s,z,ʃ]. Because of this feature these segments will not assimilate to the other segments of the adjacent exits,

20. *Ṭā?* ‘[Ṭ]’ to *siyn* ‘[s]’

*ḷibṣaṬ salamata* → *ḷibṣassalamata* ‘send Salamata’ (Vol. 2. p. 470, L.3)

21. *ḍā?* ‘[ḍ]’ to *siyn* ‘[s]’

*ḷihfaḍ salamata* → *ḷihfassalamata* ‘protect Salamata’ (Vol. 2. p. 470, L.3)

22. *ḍāl* ‘[ḍ]’ to *ṣād* ‘[ʃ]’.

*xuḍ ṣābiran* → *xuṣṣābiran* ‘take ṣābir’ (Vol. 2. p. 470, L.3)

### 3.25. *ḷistiṭālah* ‘extendedness’

Characterizes the segment [ṣ, ḍ], this allows them to mix with the apical segments, and apical segments may assimilate to them, but not the reverse. (vol 2. p. 471, L.1,2, 13).

A. Lateral [ḍ] is an ‘extended’ letter..

23. *ḷihfaḍ ḍaramata* → *ḷihfaḍḍaramata* ‘protect ḍaramata’,

B. The palatal *ṣiyn* ‘[ʃ]’ is an ‘extended’ letter.

24. *ḷafriṣ gabalata* ‘spread the hide’ \**ḷafriḡ gabalata* (Vol. 2. p. 462, L.4)

C. The *giym* ‘[g]’ assimilates to the *ṣiyn* ‘[ʃ]’

25. *ḷaxriḡ ṣabaṬa* → *ḷaxriṣṣabaṬa* ‘expel Shabatha’ (Vol. 2. p. 462, L.5)

### 3.26. *ḷiṭbāḡ* ‘covering’

Is a feature that characterizes segments [ ḍ, ḍ', ʃ, ṭ ]

26. *faṣḍun* → *fazḍun* ‘bleeding’, (vol 2. p. 477, L.4)

27. *ḷaṣḍartu* → *ḷazḍartu* ‘I exported’. (vol 2. p. 477, L.15)

### 3.27. *tafaṣṣy* ‘spread’

Is a features that is shared by the covered, nasal, extended and repeated segments. It is shared with other segments when in the context of one of these spread segments in a variety of ways.

28. With nasalization:

*min rāšidin* → *miṭṭāšidin* ‘ from Rashid’ (Vol. 2. P.464, L.4)

29. Without nasalization

*min rāšidin* → *mirrāšidin* ‘ from Rashid’ (Vol. 2. P.464, L.4)

The *ḷiṭbāḡ* ‘covering’ is another feature that spreads to the adjacent segments, as indicated above.

## 4. CONCLUSIONS

The analysis of Sībawayh postulates four constituents of the phonetic system of Arabic: cavity, exit, segment and feature. None of these constituents is otiose or redundant to the analysis. Each constituents is unique and exercises its proper constraints, consonant with its nature on the phonetic processes of the language. There is no constituent that is postulated that may be left out of consideration without serious, deleterious effects on the phonetic system of Arabic.

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## REFERENCES

- [1] Sībawaihi, 1970. ed. Derenbourg. Le Livre de Sibawaihi: Traite de grammaire. Arabe. Georg Olms Verlag: Hildesheim. 2 Vols.
- [2] Jakobson, Halle, Fant, 1952. Preliminaries to Speech Analysis. Cambridge, Mass. MIT. Press.
- [3] Chomsky, N. And Morris Halle, 1968. The Sound Pattern of English. New York. Harper and Row, Publishers.