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Author(s)	Fukuhara, Nobuyoshi
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The Phonetic Shift of Sibilants in Arabic

Nobuyoshi FUKUHARA

Then they said to him, say now Shibbolet: and he said Sibbolet:
for he could not frame to pronounce it right. Then they took him,
and slew him at the fords of the Jordan. (Judges 12 : 6)

In the field of historical studies of the internal linguistic development in Arabic phonology there is only a few work worth while mentioning as yet. This fact may partially be caused by the fiction that so called '*Arabiyya*' is a synchronic rather than diachronic unity. As a matter of course Arabic study in this field is not only important for the history of Arabic itself but also indispensable for the comparative phonology of Semitic languages. For Arabic is the only language that has, since early times and in nearly all dialects, exhibited a general development of Semitic phonology in every respect, and throughout its long history there is no lack of phonetic data for any period, for example, descriptions of pronunciation by Arab grammarians, scribal errors, treatment of loan-words and so forth. As for other Semitic languages, rich as their materials are, the documented period is comparatively short to trace their histories.

What follows represents an attempt to trace the phonetic shift of Arabic sibilants, evaluating as many materials concerning these phonemes as available and to comment upon the reconstruction of sibilants in Proto-Semitic.¹⁾

I

The sibilants of Semitic languages have bedevilled scholars and been much discussed for over a century. It is generally assumed that reduction of the ternary opposition of the sibilants /s/ (dental fricative), /š/ (alveolar fricative) and /ś/ (laterized fricative ?) which belong to the most ancient phonological system of Proto-Semitic took place in every language except in Modern South Arabic.²⁾ The opposition š/ś was neutralized in the Phoenician, Ugaritic, Amorite and Akkadian; the opposition s/ś in Hebrew and Aramaic and the opposition s/š in Arabic, Ge'ez and in later dialects of Epigraphic South Arabic. Though the process of the tendency took place in different ways in various areas, the final result in Hebrew, Aramaic and modern Arabic dialects of all types is an opposition

[s]/[š].

Regarding Arabic it is often maintained that this shift took place so long ago that /š/ and /ś/ had already acquired their present-day values [s] and [š] respectively in the documented period, leaving only /s/ unchanged, namely [s].³⁾ According to this formulation, the present-day phonetic situation seems to have succeeded immediately, without any intermediate stages, to the earlier situation in which three sibilants were conserved. The evidences from old sources, however, demonstrate that the phonetic shift of sibilants did not take place so simply as it is believed and that between two situations existed an intermediate stage of considerable duration. In the following chapters we will make an observation on the old materials.

II

The earliest systematic account of the Arabic consonantal system is that of Sibawayhi (d. 793 A.D.); his study on the phonetics of Arabic is contained in his famous *al-Kitāb* "the Book," chapter 565 *al-'idğām* "phonetic assimilation."⁴⁾ Earlier or contemporary descriptions are largely lost, and later ones are largely derivatives of or commentaries upon Sibawayhi's. Having been rather thoroughly studied on his description, it is fairly well understood now, but certain points in detail still need elucidation. His phonetics may be prescriptive, but only in the sense that he chiefly describes usage that he considers acceptable. Far from being rigid or puristic, he frequently mentions equally acceptable and unacceptable variants *hurūf furū'* besides basic sounds *hurūf 'usūl*.⁵⁾ Consequently his phonetics seems to be done in a strikingly descriptive rather than prescriptive tone.

Concluding that the real phonetic situation of Classical Arabic of eighth century must be reflected in Sibawayhi's work, we will undertake to make an analytical study on his description concerning the two sibilants /s/ and /š/ in question. Due to the relatively precious description we may rightly expect a conclusive result from this observation. First of all, he classifies all basic sounds into sixteen groups according to their points of articulation. As for /š/ he groups it with two other consonants, namely /ğ/ and /y/, for he considers it as having its point of articulation the same as for /ğ/ and /y/. Here is Sibawayhi's text as it appears in *al-Kitāb*, II p. 435:⁶⁾

Min wasaʿi l-lisāni baynahu wa-bayna wasaʿi l-ḥanaki l-'alā maḥrağū l-ğimi wa-š-šini wa-l-yā'i.

(From the center of the tongue, between it and the center of the palate lies the point of articulation of the ġim, sin and yā'.)

This description can be interpreted as indicating for the point of articulation of the three phonemes /ğ/, /š/ and /y/ the soft palate or at least the back part of the hard palate joining the soft palate. By the way, Arabic has exhibited a fronting of Semitic /*g/ to [g'], [d'], [ğ], [ž] and the like with the passing of time.⁷⁾ It was clarified by some scholars that the outcome of Semitic /*g/ which the Arab grammarian considered correct had not yet acquired its present-day value [ğ] and seems to have been realized by a medio-palatal stop, viz., [g'] at his time. This postulation is exactly identical with the result based on the observation of Sibawayhi's description. Therefore we can conclude that the point of articulation of the phoneme /š/ which Sibawayhi describes approximated rather back to the post- or medio-palatal.

The other sibilant /s/, which is the result of falling together of original /*s/ and /*š/ into a single phoneme, is classified with /z/ and /ṣ/ and their point of articulation is described as follows:

*Mimmā bayna ʔarafi l-lisāni wa-fuwayqi t-ṭanāyā maḥraḡu z-zāyi wa-s-sini wa-ṣ-ṣādi.*⁸⁾

(Between the tongue-tip and the part a little above the incisors lies the point of articulation of the zāy, the sin and the ṣād.)

This description can be interpreted as indicating that Sibawayhi's /s/ was articulated by raising the tongue-tip toward the alveolus. That the phrase *fuwayqa t-ṭanāyā* 'a little above the incisors' points to the alveolus may be adjusted with the description of the neighbouring phonemes /n/, /r/, /t/, /d/ and /ṭ/. Before describing about /s/, Sibawayhi says:

*Min ʔarafi l-lisāni baynahu wa-baynamā fuwayqa t-ṭanāyā maḥraḡu n-nūni wa-min maḥraḡi n-nūni ḡayra 'annahu 'adḡalu fī ṣahri l-lisāni qalilan l-inḥirāfihi 'ilā l-lāmi maḥraḡu r-rā'i wa-mimmā bayna ʔarafi l-lisāni wa-'uṣūli t-ṭanāyā maḥraḡu t-ṭā'i wa-d-dāli wa-t-tā'i.*⁹⁾

(Between the tongue-tip and the part a little above the incisors lies the point of articulation of the nūn. And the rā' is articulated at the same point as for the nūn except that it is a little inner on the tongue-plain with its obliquity toward lateralization. Then from what is between the tongue-tip and the bases of the incisors come out the ṭā', the dāl and tā'.)

It is observable from this description that the point of articulation of /s/ is identical with that given for /n/ and /r/, except that /r/ has obliquity toward lateralization; but that it is remarkably different from the place described for /t/, /d/ and /ṭ/, in which the tongue-

tip touches actually the bases of the incisors. Accordingly Sibawayhi's /s/ was not dental but alveolar, in which its point of articulation was a little further back than that of true dental /t/ articulated at the bases of the incisors.

While Sibawayhi's /š/ and /s/ differed in point of articulation, they were both similar with respect of manner of articulation, for by the foregoing criteria *ğahr/hams*¹⁰⁾ and *sidda/riḥāwa*, they are both classified among the *mahmūsa* and *riḥwa*. Classification by the criterion *ğahr/hams* has bedevilled scholars for over a century but Sibawayhi knew that, whereas the *mağḥūra* are not always voiced, the *mahmūsa* are always voiceless.¹¹⁾ The opposition *sidda/riḥāwa*¹²⁾ corresponds exactly to the distinction between occlusion and fricatism in modern phonetics. Therefore they are both easily identifiable as voiceless fricatives.

Summing up the result from this observation, we can describe Sibawayhi's consonants in question with terms of modern phonetics as follows: /š/ was voiceless post- or medio-palatal fricative; /s/ voiceless alveolar fricative; /ğ/ post- or medio-palatal affricate; /n/ and /r/ alveolars; /t/ dental stop.

In Modern Arabic, as described by Gairdner, /ğ/ is true pre-palatal [ǧ], in which the front of tongue touches the hard palate, midway between the contact points of [d] and [g];¹³⁾ whereas /s/ is alveolar [s], being classified with /n/ and /r/ as having their point of articulation at the hard palate a little behind the teeth.¹⁴⁾ As for /š/, admitting the difficulty to describe the exact position of the tongue-point in making this strong hiss,¹⁵⁾ he, nevertheless, classifies it with true dentals /t/, /d/ and /ṭ/.¹⁶⁾ Its phonetic value is dental fricative [ʃ]. The following is a comparative table of these consonants setting Sibawayhi's basic sounds *hurūf 'uṣūl* over against Gairdner's phonemes of Modern Arabic.

Sibawayhi's <i>hurūf</i>		Gairdner's phonemes
post- or medio-palatal (at the center of palate)	— { /ğ/	—pre-palatal [ǧ]
	— { /š/	—alveolar [s], [n], [r]
	— { /n, r/	
alveolar (a little above the incisors)	— { /s, z, ṣ/	—dental [s, z, ʃ] [t, d, ṭ]
dental (at the bases of the incisors)	— { /t, d, ṭ/	

It is observable from this comparative table that the points of articulation of Sibawayhi's sibilants /š/ and /s/ differ remarkably from those of Modern Arabic described by Gairdner and that not only /ğ/ but also /š/ and /s/ have exhibited a general fronting of articulation, leaving /n/, /r/ and /t/ unchanged. Regarding sibilant /š/, while it is a alveolar

fricative [š] according to Gairdner, Sibawayhi describes it as a post- or medio-palatal fricative. Such a phoneme as Sibawayhi's /š/ cannot be interpreted as having any phonetic value else than a fricative [ç] or [c̥]. If we consider for a few minutes the proposition of Sibawayhi's grouping of /s/, /n/ and /r/ as alveolars (pronounced a little above the incisors) and /t/, /d/ and /ṭ/ as dentals (pronounced at the bases of the incisors) in contrast with Gairdner's grouping of /š/, /n/ and /r/ as alveolars and /s/, /t/, /d/ and /ṭ/ as dentals, we can easily deduce an equality Sibawayhi's /s/=Modern Arabic /š/(=[š]) by Gairdner. Accordingly to Sibawayhi's /s/ is attributed the phonetic value [š].

According to our result from the observation of Sibawayhi's description, the present day situation of the sibilants was not yet fully established during the earlier period of Classical Arabic and the phonemes /š/ and /s/ described by Sibawayhi were represented by post- or medio-palatal fricative [ç] or [c̥] and alveolar fricative [š] respectively at that time.

III

The question may be asked whether the phonetic situation of Sibawayhi's sibilants can be adjusted in such materials as we have for pre-Islamic Arabic. In the last two or three centuries before Islam both inside and outside evidences for Early Arabic (3th-6th cent. A. D.) are very scanty, but it is during this period that hundreds of Aramaic loan-words entered the language through Christian and Jewish contacts. The phonetic adaptation of loan-words, generally, may furnish clues to the pronunciation in two languages, the original and borrowing one. Therefore in spite of our restricted knowledge of Early Arabic, the observation of these loan-words may rightly be expected to throw some light on the phonetic status of this period and to give the answer to the above question.

Concluding that Sibawayhi's stage of sound shift must be reflected in the loan-words adapted by Arabic during this period, we will undertake an examination on the correspondences in Arabic to Aramaic sibilants, based on Fraenkel's study of Aramaic loan-words in Arabic.¹⁷⁾ It must be assumed that these loan-words originally entered some specific dialects separately in contact with neighboring culture and gradually spread into Classical Arabic. But owing to the scarce material for this period the date of their introduction into Arabic can not be always clarified. However, in the vast majority of Aramaic loan-words in Arabic, specifically those words which we have a good right to believe have passed to Arabic in the earlier period, we may observe that Aramaic /š/ corresponds to Arabic /s/ which is normally considered to have been pronounced [s.]

Examples for Arabic /s/=Aramaic /š/:

<i>siyā'</i>	"mixture of clay and strow"	ŠY"
<i>sirā</i>	"garment striped with yellow"	ŠYR'H
<i>'āsiyat</i>	"column"	ŠYT'
<i>sirbāl</i>	"cloth, shirt"	ŠRBL'
<i>fiṭṭis</i>	"hammer"	PTYŠ
<i>sirāğ</i>	"lamp"	ŠRE'
<i>rawsam</i>	"seal, tablet"	RWŠM'
<i>qasb</i>	"tough date"	QŠB'
<i>sāriyat</i>	"mast of ship"	ŠRYT'
<i>qudās</i>	"breast plate"	QDŠ'
<i>saffūd</i>	"spit"	ŠPWD'
<i>nibrās</i>	"lantern"	NBRŠT'
<i>rasama</i>	"to draw"	RŠM
<i>si'r</i>	"current price"	Š'R'
<i>maras(at)</i>	"rope"	MRŠ'
<i>sūr</i>	"wall"	ŠWR'
<i>sūrat</i>	"chapter, sura"	ŠWR'
<i>ğāsūs</i>	"spy"	GŠWŠ'
<i>kanīsat</i>	"church"	KNYŠT'
<i>naqūs</i>	"gong, bell"	NQWŠ'
<i>sunnār/sinnawr</i>	"cat"	ŠWNR'
<i>qissis/qass</i>	"priest, monk"	QŠYŠ'

But in the loan-words which were seemingly taken over in the later period, perhaps after Islam the phonetic treatment is completely different. Aramaic loan-words with /s/ are always represented by Arabic /s/.

Examples for Arabic /š/=Aramaic /š/:

<i>šaraqraq/širiqraq</i>	"green woodpecker"	ŠRQRQ
<i>šifnīn</i>	"turtle-dove"	ŠPNYN'
<i>šabbūt</i>	"a kind of fish"	ŠYBWT'
<i>qašš</i>	"Christian priest"	QŠ/QŠ'
<i>nataša</i>	"pull out (a thorn)"	NTŠ
<i>minkāš</i>	"hoe, rake"	MNKŠ
<i>mišfal</i>	"pail for dung"	MŠPL

<i>šiṣ(at)</i>	“date(s) of bad quality”	SYṢY
<i>miṣḥal</i>	“filter”	ṢHL'
<i>šaḡala</i>	“to weigh (a coin)”	ṢQL
<i>šamūnat</i>	“(weigh)”	ṢMWN'
<i>'iṣṭiyām</i>	“captain”	'ṢTYM'
<i>šaḡūl</i>	“(weigh)”	ṢQWL'
<i>šaryān</i>	“artery”	ṢRYN'
<i>šiyāf</i>	“medicaments for the eye”	ṢYF'
<i>buršān</i>	“host, wafer”	BWRṢN'
<i>rawšam</i>	“tablet, seal”	RWṢM'

The same picture of correspondence emerges from the Hebrew names and words of cult introduced during this period; for Hebrew /š/ Arabic has /s/ in the earlier loan-words.

Examples for Arabic /s/=Hebrew /š/:

<i>Mūsā</i>	“Moses”	<i>Mōseh</i>
<i>Sulaymān</i>	“Solomon”	<i>Ṣēlōmoh</i>
<i>Samū'il</i>	“Samuel”	<i>Ṣēmū'el</i>
<i>'Alyasa'</i>	“Elisha”	<i>'Ēliša'</i>
<i>'Isma'il</i>	“Ismael”	<i>Yišma'el</i>
<i>sabat</i>	“sabbath”	<i>ṣabbat</i>
<i>masīḥ</i>	“Messiah”	<i>māšīaḥ</i>
<i>Yasū'</i>	“Jesus”	<i>Yašū'</i>
<i>Sawsan</i>	“Susa”	<i>Ṣūšan</i> etc.

But Hebrew names which seems to have been taken over after Islam used to be rendered by Arabic /š/.

Examples for Arabic /š/ Hebrew = /š/:

<i>Ṣayṭ</i>	<i>Ṣēt</i>
<i>'Anūṣ</i>	<i>'Ēnōṣ</i>
<i>Matūšalaḥ</i>	<i>'Mētūšelaḥ</i>
<i>'Arfaḥšad</i>	<i>'Arpakšad</i>
<i>Māš</i>	<i>Maš</i>
<i>Fīšūn</i>	<i>Pīšōn</i>
<i>Balšaṣar</i>	<i>Bēlṭēša'šar</i>
<i>kariš</i>	<i>kērēš</i> “belly”

If the Early Arabic had been in a situation similar to Modern Arabic, the /š/ would

have been used consistently for representing Aramaic /š/ in the loan-words in earlier period.¹⁸⁾ Why, then, were the Aramaic loan-words with /š/ rendered by Arabic /s/ instead of /š/ in the earlier period but by /š/ in the later period? This chronologically fluctuating adaptation, I think, is explicable provided that we assume the existence of Sibawayhi's intermediate stage of phonetic development in which the /š/ and /s/ had not yet acquired the present-day value but were realized by a palatal [ç] or [c̥] and [š] or [s̥] respectively. When the earlier group of loan-words was taken over, Arabic /s/ (= [š]) approximated to Aramaic /š/ and Arabic /š/ had a value acoustically different from that of Aramaic /š/. Accordingly the loan-words with /š/ was represented by the Arabic /s/. Then the sibilants gradually developed closer to the present-day situation. To this fluctuating period may be attributed some words in which Aramaic /š/ was rendered with both /š/ and /s/, e.g., *rawsam/rawšam*, *rasama/rašama*, *maras/maraš*, *qass/qašš*, etc. After the shift reached the stage in which the /š/ was realized by [š] and /s/ by [s], the former was of course, used instead of the latter for expressing Aramaic /š/. This process is quite frequent when one language borrows words from another during the fluctuating period.

Though it is clear from the observation of Aramaic loan-words that in Early Arabic the sibilant /š/ had not yet acquired the present-day value [š], no evidence were reduced as to its real phonetic quality. We can, however, quote some instances of Greek loan-words for its possible pronunciation in the direction of a post- or medio-palatal [ç] or the like. We cannot, of course, expect any instances for [š] in the loan-words due to the absence of such a sound in Greek, but can find some instances of /x/ which are represented by Arabic /š/:

Examples for Greek /x/ = Arabic /š/: 'επαρχία "province" *'abaršīyyat*; πατραρχήλιον "necklace" *baṭrašīl*; χειροτονέω "to ordain (a priest)" *šarṭana*; εὐχή "prayer" *'afšīn*. The material is scanty, but it is noteworthy and suggestive for determining the quality of /š/. If the /š/ had been truly realized by [š] at that time, the Arabs would have expressed the Greek /x/ with acoustically approximate phoneme /ħ, k, ʁ or h/ as in the most cases. Since, instead, they used /š/ for transcribing /x/ preceding front vowels /i, e or η/, the same conclusion may be drawn that the /š/ did not express [š] but something else, perhaps prepalatal [ç] or the like as assigned by Sibawayhi.

IV

For the investigation for the real phonetic situation of the sibilants in question in Old Arabic, we have at our disposal another means: transcription of Arabic words and

names found in the neighbouring languages, some Arabic inscriptions written in Aramaic or early Arabic script and so forth. By these means we can reach approximately the middle of the third century A. D.

Before Islam there was the incessant rise and fall of Arab sedantary establishments which was determined to a great extent by changes which effected the fortunes of the routes. Among these establishments were Nabatea (100 B. C.-4 th cent. A. D.) and Palmyra (1st-3 rd cent. A. D.), both of which had purely strategic position on the trade-routes. The inhabitants of the establishments used local varieties of Imperial Aramaic and Aramaic linear script for official purposes, but their names show that the Nabataeans were wholly Arab and spoke doubtlessly Arabic in daily intercourse, and that at Palmyra there was an important Arab element. Therefore many Arabic words and names are reflected in their inscriptions and constitute the main evidence for Old Arabic.

The same result as that of the preceding chapter seems to be obtained from the observation of the spelling of the names and words which passed conversely from Arabic to the dialects of Aramaic. The Nabataean and Palmyrene inscriptions are very confused in their using of the Aramaic letters *sâmek* and *šin* when Arabic names and words with /š/ or /s/ are transcribed with them.

In Nabataean inscriptions the /s/ in the Arabic words and names are found spelled with *šin* as it appears from the following examples.¹⁹⁾

Examples for Arabic /s/=Nabataean *šin*:

<i>Qays</i>	<i>QYŠW</i>	<i>'Aws</i>	<i>'WŠ</i>
<i>Sukaynat</i>	<i>ŠKYNT</i>	<i>'Ubaysat</i>	<i>'BYŠT</i>
<i>Salam or Salām</i>	<i>ŠLM</i>	<i>Saliyy</i>	<i>ŠLY</i>
<i>Ḥasik</i>	<i>HŠYKW</i>	<i>nasīb</i> "relative"	<i>NŠYB</i>
<i>'ar'us</i> "heads"	<i>'R'Š</i>		

In the following instances we can observe the fluctuating spelling with *šin* and *sâmek* for Arabic /s/.

<i>masğid</i>	"temple"	<i>MŠGD'/MSGD'</i>
<i>nafs</i>	"spirit"	<i>NPŠ'/NPS'</i>

In Palmyrene inscriptions we find practically the same situation of spelling, though the instances are few. Arabic /s/ is written with *šin* and *sâmek* indifferently.²⁰⁾

Examples for Arabic /s/=Palmyrene *šin/sâmek*:

<i>sayyārat</i>	"caravan"	<i>ŠYRT</i>
<i>Sa'd</i>		<i>Š'D/S'D</i>

As for Arabic /š/ the same fluctuation is found in their use of *šin* and *sâmek* in the Nabataean and Palmyrene inscriptions. The /š/ is written with *šin* and *sâmek* indifferently.

Examples for Arabic /š/=Nabataean and Palmyrene *šin/sâmek*

(Nabataean) <i>šaraf</i>	“nobility”	ŠRPYW/SRPYW
<i>hawšab</i>	“hare”	HWŠBW
<i>šilw</i>	“limb”	ŠLW
<i>Šamğ</i>		ŠMGYW
(Palmyrene) <i>šaṭr</i>	“half”	ŠṬR'/ṬR'
<i>šākīr</i>	“thanking”	ŠKRW/SKRW
<i>šurayk</i> or <i>šarīk</i>	“partner”	ŠRYKW/SRYKW

If the background lying behind the Nabataean and Palmyrene had been Arabic similar to Modern Arabic, Aramaic *šin* would expectedly have been used for Arabic /š/, outcome of Proto-Semitic /*š/ consistently and *sâmek* for /s/, outcome of Proto-Semitic /*s/ and /*š/. But the spellings found in the loan-words are against the Aramaic orthographic tradition. It is observed in the above instances that Aramaic *šin* is mostly used for what is normally considered such a dental [s] as in Modern Arabic and that what is in Modern Arabic [š] is spelled with both *šin* and *sâmek*. This fluctuation between *šin* and *sâmek* seems to indicate that at the beginning of our era Arabic /s/ approximated more closely to Aramaic *šin* than to *sâmek* and that Arabic /š/ was spelled with both *šin* and *sâmek* due to the absence of its acoustical equivalent in the Aramaic consonantal system. It is, therefore, difficult to avoid the conclusion that also in Old Arabic the /s/ was realized by a [š] and that the /š/ had a phonetic value different from that of Modern Arabic, which was presumably a palatal [ç] or the like.

We have another Old Arabic materials equally significant for this investigation, viz. the earliest inscriptions that we can call Arabic or Nabataean deeply colored by Arabisms.²¹⁾ These inscriptions are written in the form of Aramaic or primitive Arabic script, from which developed all the forms of script that have been employed in Islamic times for writing Arabic. Here is one of the inscriptions, which is frankly Arabic.

Harran text:²²⁾ 1) 'N' ŠR'HYL BR ṬLMW BNYT D' 'LMBṬWL

2) ŠNT 463 B'C MPŠD

3) HYN'D

4) N'M

1) I, Šarahēl, son of Ṭalemō, built this monument

2) in the year 463 after corruption.²³⁾

3) then(?),

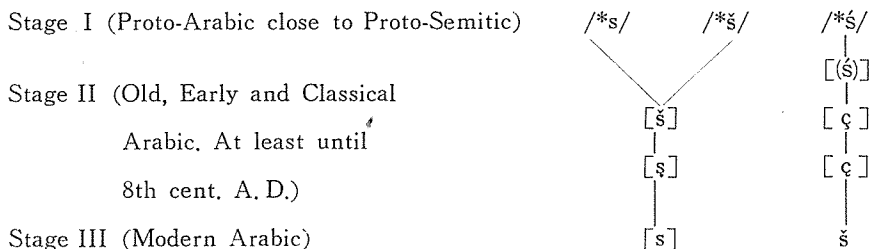
4) the prosperity(?).

In these inscriptions *šin* of Aramaic script is used indifferently for noting the Arabic sibilants in question (/s/ is represented in line 2 *ŠNT*, *MPŠD* and /š/ in line 1 *ŠRHYL*), while *sāmek* does not appear at all. The same situation is true of the history of Arabic alphabet, which was borrowed from the Nabataean script and developed into an independent script. Arabic alphabet has preserved only one letter for non-emphatic voiceless sibilants, viz., *šin* (afterwards differentiated by diacritical points into *šin* and *sin*). These facts seem to make it clear that the consonantal system of Old Arabic did not include any phoneme whose phonetic value is a dental [s]. Also for Old Arabic we can support the postulation that between the stages of Proto-Arabic and of Modern Arabic existed a intermediate stage in which the /s/ was realized by [š] and /š/ had a value different from that of Modern Arabic, probably a post- or medio-palatal [ç] or the like.

V

We have seen what the inside and outside documentations for Arabic allow us to state against the assumption concerning the phonetic situation of sibilants, which is generally considered as a matter of course. After the observation we have come to a conclusion that the present-day phonological situation did not succeeded immediately to the Proto-Semitic (or Proto-Arabic) situation in which three sibilants still remained, but that between the two situations mediated a stage of considerable duration, which endured at least until Sibawayhi's time. In this intermediate stage the sibilants in question had phonetic values markedly different from those of present-day equivalents: the /š/ was realized by a postor medio-palatal [ç] or [c] and the /s/ by alveolar [š] or [s].

Summing up all the materials we have discussed, we can trace the following chart of the phonetic development:



Stage I: In this stage the three sibilants were still maintained, but their exact phonetic values are unknown due to the lack of enough data. This period seems to have continued

by the end of the first millenium B.C.

Stage II: The /*š/ and /*s/ coalesced into a single phoneme, which was realized by [š] or [s]. As for the /*ś/, in the earlier period it seems to have conserved such a value as that of North-West Semitic. It is surely during this period that the loan-words *šaytān* (<Heb. *śātān*) entered the language. And by Sibawayhi's time it had reached [ç] or [c].

Stage III: the points of articulation of the two sibilants /š/ and /s/ have gradually fronted and come to the present-day situation.

We have obtained a rather surprising result that during the earlier period (Stage II) did not exist a dental [s] in the Arabic consonatism. Our conclusion may however be further supported by Vilenčik's postulation.²⁴⁾ The system of Semitic sibilants proper has not been fully established, but it is generally accepted that the /*s/ is a dental fricative [s]. Vilenčik however reconstructs /*t^s/, /*d^s/ and /*d^z/ in lieu of generally accepted /*s/, /*z/ and /*š/, based on some evidences which appear in favour of affricative realization; but these evidences have their sources from ancient languages (their pronouciation is not clear), from transcription of non-Semitic languages in Arabic script and from Arabic pronouciation of the modern dialect (this may be secondary). However they seem to denote some part of the probable value of these phonemes. If we follow the traditional reconstruction, the /s/ shows the going backward shift [*s]→[š]→[s] in the history of Arabic. But in Arabic, a general tendency of articulational fronting being observed in the consonatism, Vilenčik's postulation seems more appropriate to explain the phonetic shift of Arabic sibilants.

Notes

- 1) In this artile the reader should dissociate the phonetic value from the Roman letters between oblique lines which will indicate phonemes. The letters put in brackets will represent the phonetic value.
- 2) In the various languages the three sibilants /*s/, /*š/, and /*ś/ have correspondences indicated in the following table.

Proto-Semitic	Akkadian	Ugaritic	Hebrew	Aramaic
*s	s	s	s	s
*š	š	š	š	š
*ś	š	š	ś	s
Arabic	ESA	Ge'ez		
s	s ³	s		
s	s ¹	s		
š	s ²	š		

Examples: s, š, ś: Akk. *kusitu* "garment", *ḥamiš* "five", *ešer* "ten"; Ug. *kst*, *ḥmš*, *śr*;

Heb. *kēsūt*, *hāmēš*, 'ešer; Syr. *kussaya*, *hammeš*, 'esar; Ar. *kuswat*, *hams*, 'ašar; ESA *ks³w*, *hms¹*, 's²r.

- 3) C. Brockelmann, *Grundriss I*, (Berlin 1908) p. 129.
- 4) Sibawayhi, *al-Kitab* (ed. Derenburg) II, pp. 452—455.
- 5) *ibid.* p. 452: 14—16.
- 6) *ibid.* p. 453: 7—8. A variant is found in Ibn Durayd, *Ġamharat al-Luġa*, p. 8: After describing the points of articulation, he says: *Tumma l-ġimu wa-š-šinu mina l-lahāti wa-l-yā'u min wasaṭi l-lisāni baynahu wa-bayna mā ḥadāhu mina l-ḥanaḳi l-'a'lā*. (Then the ġim and šin lie on the *lahat*, and the yā' on the middle of the tongue, between that and the corresponding part of the palate.) If we move *mina l-lahāt* the text gives the same description as Sibawayhi's, so that this phrase was probably misplaced and may refer to /q/ and /k/ which precede.
- 7) The following chart shows the process of articulatory fronting of /g/. See: J. Cantineau, *Etudes de linguistique arabe*, (Paris 1960), p. 57.

$$*g \rightarrow \text{palatalized } g \rightarrow gy \rightarrow dy \begin{cases} \nearrow y \\ \searrow d\check{z}(\check{g}) \rightarrow \check{z} \end{cases}$$

- 8) Sibawayhi, *al-Kitab* II, p. 453: 13—14.
- 9) *ibid.* p. 453: 11—13.
- 10) *ibid.* pp. 453—454. All Arabian letters are classified into two groups *maġhūra*: ' ' ġ q ġ y ḍ l n r ṭ ḍ z ẓ ḍ b m w and *mahmūsa*: h ḥ ḫ k š s t ṣ ṭ f.
- 11) Fleisch and Troupeau interpret the terms as meaning strictly voiced *vs.* voiceless. For Garbell it is 'nonbreathed' *vs.* 'breathed'. Jakobson and Blanc maintain that it is fortis *vs.* lenis.
- 12) *ibid.* p. 454: 6—20. To *riḥāwā* belong the following letters: h ḥ ḫ ḡ ḥ š ṣ ḍ z s ẓ ṭ ḍ f.
- 13) W. H. Gairdner, *Phonetics of Arabic* (London 1925), p. 23.
- 14) *ibid.* p. 23.
- 15) *ibid.* pp. 19—20.
- 16) *ibid.* p. 16.
- 17) S. Fraenkel, *Die aramäischen Fremdwörter im Arabischen* (Leiden 1886, Hildesheim 1962).
- 18) The pronunciation [s] for Aramaic /s/ is easily reduced from some adaptations of Greek and Latin forms:

Nabataean: 'WPRNS, *Εὐφρόνιος*; BSS', *basis*; SLWNS, *Silvanus*; QYSR, *Caesar*

Palmyrene: BSLQ', *βασιλική*; SSTRTYN, *sesterium*

Syriac: 'aspis' *ἀσπίς*; asoṭa', *ἄσωτος*, etc.

As for the value of /š/ no evidence can, of course, be reduced from Greek or Latin words, but in the adaptation of words of Iranian origin Aramaic regularly uses /š/ for [š]; PRYDRŠ, Sansk. Priyadarśi; K'NYŠ, Prakrit kānici; etc. It thus seems plausible that Aramaic /s/ and /š/ were realized by [s] and [š] respectively at that time.

- 19) J. Cantineau, *Le Nabatéen I* (1930), p. 43.
- 20) J. Cantineau, *Grammaire du Palmyrénien épigraphique* (Paris 1935), p. 42—3.
- 21) There are several inscriptions of Old Arabic: graffiti from Nemara (dated 328 A. D.), from Jebel Ramm (c. 3000 A. D.), from Zabad (512 A. D.) and so on.
- 22) J. Cantineau, *Le Nabatéen II* (Paris 1930), p. 50. This graffito was discovered by Wetzstein at Harran in Ledja.

- 23) This date corresponds to 568 A. D.
- 24) Vilenčik, *OLZ*, (1930), col. 91—3 and *OLZ* (1931), col. 505—506. Cantineau agrees with it in *Etudes de linguistique arabe* (Paris 1960), pp. 16, 46 and 283.

Postscript: A. Siddiqi's "Studien über die persischen Fremdwörter in klassischen Arabischen" (1919), p. 73 — which I had a chance to see only after the completion of this article — supplies another material for the sibilants in question, from the observation of which the same result can be obtained. In the Persian loanwords which the author maintains had passed to Arabic in the early periods, we may observe that Persian has a /š/ regularly corresponding to what is normally considered to have possessed a phonetic value [s], e.g. Pers. /š/=Ar. /s/: *šekar/sukkar* "sugar", *mušk/misk* "musk", *tašt/ṭass* "wooden cup", etc.

What this seems to indicate is not that there was a phonetic shift from a Persian /š/ to Arabic /s/, because in the loanwords which were taken over later, Persian /š/ are always rendered with Arabic /š/. The Arab should have expressed the Persian /š/ with their /š/ if the latter truly had the value [š]. Since, instead, they used the /s/, the conclusion must be drawn that Arabic /s/ was substituted for Persian /š/ at a time when the former had a value [š] or the like equivalent or similar to Persian /š/ and that Arabic /š/ was not realized by [š], but something else, perhaps a fricative [ç] or the like.