A SEQUENCE OF VOWEL SHIFTS IN PHOENICIAN AND OTHER LANGUAGES*

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I. INTRODUCTION

A number of vowel shifts in the history of Phoenician[1] may be understood as part of a sequence of shifts, part of which forms a drag-chain. Seeing the history of the Phoenician vowels in the context of this cross-linguistically common sequence of vowels brings order to the limited and sometimes unclear data.

Given this sequence, vowel shifts in many other languages from the Ancient Near East fall into place—they are following a typologically common direction of change. Among the many languages in which some or all of these shifts occur are Hebrew, dialects of Aramaic, North Mehri, Egyptian-Coptic, as well as many other languages world-wide, including Phoenician's cultural neighbor, Greek.

The shifts in question in Phoenician are *á* > *o*[2] (the Phoenician Shift), *o* > *u*, *u* > *ü* (*u* from proto-* *u*/*ū*), and possibly *ü* > *i*. The earlier shift *ā* > *o* (the Canaanite Shift) may also be taken into acount as an element of this pattern of shifts. These shifts all move in a definite direction: they may be depicted as a circular movement on a vowel chart (table 1).

Many earlier studies of vowel shifts in Phoenician and Hebrew deal with shifts in this sequence, even though they do not mention the sequence explicitly. The evidence for the shifts, which has already been gathered, does not need to be repeated in full, but the sequence that unites the shifts needs to be examined in greater depth. We can better understand these studies of the shifts if we realize that where attested or reconstructed vowel shifts skip one or more steps of the sequence, scholars implicitly assume the necessity of the sequence as the course of development of the vowels and so provide the missing links.

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The following abbreviations are used:

GAG: Wolfram von Soden, *Grundriß der akkadischen Grammatik, samt Ergänzungsheft zum Grundriß,* Analecta Orientalia 33 and 47 (Rome, 1969).
KAI: Herbert Donner and W. Röllig, *Kanaanäische und aramäische Inschriften,* 2 vols. (Wiesbaden, 1968).

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[1] In the terminology used here, "Punic" is the Phoenician of North Africa ("Neo-Punic" should be used only to specify that the text in question is later than the fall of Carthage), and "Phoenician" is a cover term for all the dialects, including the littoral (Lebanon) dialects and Punic, throughout the long history of these dialects. Cf. Maurice Sznycer, "L'emploi des termes 'Phénicien', 'Punique', 'Néo-Punique': Problèmes de méthodologie," in Pelio Fronzaroli, ed., *Atti del secondo congresso internazionale di linguistica camito-semitica, Firenze, 16–19 aprile 1974,* Quaderni di Semitistica 5 (Florence, 1978), pp. 261–68.

[2] Because length is not indicated in most of the scripts used, the phonemes, *ɔ*, *o*, *u*, *ü*, and *i*, which form part of the sequence, are not marked for length in this study. It is quite possible that Phoenician developed a qualitative vowel system from a quantitative one, as Tiberian Massoretic Hebrew did. The vowels discussed as part of the sequence here, however, other than *á*, are historically long.

of the lack of distinct graphemes in the orthographies,[8] although I support a reconstruction of *ɔ* as an intermediate step on structural grounds. Were there such a step, the shift of *á* to *ɔ* would have formed an isogloss for the geographically proximate Tiberian Hebrew[9] and Phoenician,[10] although the chronological separation makes a causal connection unlikely.

The Phoenician Shift does not operate in double closed syllables, as seen in *qatl* nouns, including those from geminate roots.[11] For example, Χουσαρτ for *kušart,* in which the *á* does not shift to *o,* stands in contrast with the masculine equivalent, Χουσωρ for *kušor,* in which the Phoenician Shift does occur.[12] This can be explained by a ban on long vowels in doubly closed syllables only if we posit stress-lengthening as an intermediate step for the Phoenician Shift.[13]

Aron Dotan presents an idiosyncratic view of the transcriptional evidence of Phoenician which denies the existence of the Phoenician Shift.[14] He addresses the evidence for the shift piecemeal, explaining why each particular type of evidence for *á* > *o* instead represents some other phenomenon. Some of the evidence for the Phoenician Shift on which Dotan casts doubt is indeed difficult. Thus, for example, Phoenician *labon,* transcribed λαβον, may well belong to a *qatol* < *qatul(l)* pattern.[15] Some of Dotan's examples are reconstructed incorrectly, as for example *tošɔb̲,* which should be reconstructed to **tawšab* rather than **-āb* as he suggests.[16] Other examples are attributed to the wrong language. For example, the Hebrew *dɔg̲on,* Δαγων in Greek, is adduced by Dotan as a biform of Hebrew *dɔg̲ɔn* to show that the second vowel in Phoenician is the result of the Canaanite Shift rather than the Phoenician Shift.[17] In fact, the difference between the two is between a Phoenician word that underwent the Phoenician Shift, *dagon*—a name of a god probably hypostasized from the word for the grain—and a Hebrew word that did not undergo the Phoenician Shift, *dɔg̲ɔn,* "grain." Other cases must be understood in the light of the particular morphology of Phoenician, since, as Dotan points out, the morphemes of Phoenician do not necessarily correspond to those of Hebrew.[18] Dotan brings up the apparent third person masculine plural suffix on SYLLOHOM and MYSYRTHOHO[M] and dismisses the possibility that the *o* before the suffix could be the result of the Phoenician Shift because Hebrew does not have *qɔmɔṣ* (the usual cognate of the product of the Phoenician Shift) in this position.[19] Indeed, Charles Krahmalkov has pointed out that in Phoenician, unlike Hebrew, the connecting vowel before pronominal possessive suffixes

[8] Ibid.

[9] Chaim Rabin ("Semitic Languages," *Encyclopaedia Judaica,* vol. 14 [Jerusalem, 1971], p. 1154) connects the Phoenician Shift with the Ashkenazic and Yemenite *ɔ-qɔmɔṣ* as well.

[10] Because of the complicated stress histories of these languages, Hebrew *qɔmɔṣ* is not always cognate to the product of the Phoenician Shift.

[11] Just as the first syllable of Hebrew *qétɛl* < *qatl* is not lengthened under stress.

[12] E. Y. Kutscher, "*kəna^{c}anît, ^{c}iḇrıt, pînîqît, ^{ɔ}ārāmît, ləšôn ḥāzā"l, pûnît*" ("Canaanite, Hebrew, Phoenician, Aramaic, Mishnaic Hebrew, Punic" [Hebrew]), *Lĕšonénu* 33 (1968–69): 96. See sec. II, 4 below.

[13] The *a* vowel in a doubly closed syllable remains *a* even when anaptyxis later opens up the syllable, as, for example, ALEM which represents Punic (*^{c}*)*alem* < *^{c}alm* (*Poenulus,* l. 948; For the text of the *Poenulus* with discussion, see Maurice Sznycer, *Les passages puniques en transcription latine dans le "Poenulus" de Plaute* [Paris, 1967]).

[14] Aron Dotan, "Vowel Shift in Phoenician and Punic," *Abr Nahrain* 12 (1971–72): 1–5; idem, "The Phoenician A > O Shift in Some Greek Transcriptions," *Ugarit-Forschungen* 3 (1972): 293–97 (reprint of "Vowel Shift in Phoenician and Punic"); and idem, "Phoenician/Punic—Hebrew Linguistic Relationship Re-Examined," *Israel Oriental Studies* 6 (1976): 71–121.

[15] Idem, "Phoenician/Punic—Hebrew," p. 75.

[16] Ibid., p. 76.

[17] Ibid., p. 80.

[18] Ibid., p. 111.

[19] Ibid., pp. 102–3; *Poenulus,* l. 933.

of the Phoenician Shift was still ɔ and had not yet shifted to *o*.[26] Had *o* from the Canaanite Shift and o from the Phoenician Shift merged, the markers of the feminine plural noun and the singular feminine noun would have merged to *-ot,* since the *-at#* of the feminine singular on nouns did not go to *-ā* in Phoenician until late in the history of Punic. Rather, the feminine plural noun marker became *-ut*.[27] (For example, *alonuth,*[28] Punic *SANUTH*).[29] Χουσωρ, *kušor* is an example of two shifts operating in the same word.[30] Ugaritic *kθr* = *kōθar,*[31] Arabic *kawθar,* and Hebrew *košɔroṯ*[32] suggest an original **kawθar.* The first syllable has *u* from *o* < *aw,* while the second has *o* from *á*.[33]

5. *u* > *ü*

The product of the *o* to *u* shift did not merge with original *u*. Rather, earlier *u* shifted to *ü*.[34] This is a phonologically exceptional step for the Semitic languages, as rounded front vowels are very rare in this family.[35] But there is some admittedly meager evidence for *ü* in Phoenician and in Punic in particular: Greek upsilon, originally pronounced *u,* came to represent *ü* in Attic-Ionic from an early date, perhaps already by the sixth century B.C.E. (although in certain dialects the *u* pronunciation lasted until much later) and remained *ü* in most of the Hellenistic dialects through the third century C.E. Upsilon later was pronounced *i*.[36] The debated date of the shift from *ü* to *i* is not strictly relevant to the discussion of the existence of Phoenician *ü,* for if we see υ used to transcribe a vowel in Phoenician that is the reflex of Proto-Semitic **u,* then the υ may indicate one of three situations in the two languages:

1. At the time that the transcription was made, υ indicated *ü,* and proto-**u* was *ü* in Phoenician.

[26] On *o* > *u,* see Kutscher, "*kəna*ᶜ*anît, ᶜiḇrît,*" p. 91; Segert, *Grammar of Phoenician,* §34.3, 4; Harris, *Grammar,* §7; and Friedrich and Röllig, *Grammatik,* §79b. In order to prove that Proto-Northwest-Semitic II-weak perfect forms had short **a,* for example, **ram-,* not long **ā,* for example, **rām-,* Kutscher uses the shift *o* > *u*. According to Kutscher, transcriptions such as *ḥîrôm* (1 Kings 5:24, 7:40), Ειρωμος (Josephus; see Harris, *Grammar,* for these forms and others) underwent the Phoenician Shift *á* > *ó* rather than the Canaanite Shift *ā* > *o*. For if the Proto-Northwest-Semitic form had been **rām-,* shifting to *rom-* with the Canaanite Shift, then it would have shifted to *rum-* under the later *o* > *u* shift, but the transcriptional evidence does not support that. Rather, the Proto-Northwest-Semitic form was **ram-,* shifting to *rom-* under the Phoenician Shift. Indeed, proto-*ram-* is easily explainable as a result of paradigm leveling with the forms with consonant-initial suffix, such as **ramtă*. The short *a* in **ramtă* is shortened from *ā* in a doubly closed syllable. This is why the paradigm has ɔ throughout in Hebrew but *o,* the product of the Phoenician Shift, in Phoenician.

[27] Segert, *Grammar of Phoenician,* §52.233.

[28] *Poenulus,* l. 930.

[29] *KAI,* p. 180.

[30] See sec. II, 2 above.

[31] Segert, *A Basic Grammar of the Ugaritic Language with Selected Texts and Glossary* (Berkeley and Los Angeles, 1984), p. 190. Syllabic cuneiform evidence supports this vocalization, *kōθar* < *kawθar,* as against **kāθar* (suggested by Dotan, "Phoenician/Punic—Hebrew," p. 76). See Segert, *Basic Grammar of Ugaritic,* p. 190; and John Huehnergard, *Ugaritic Vocabulary in Syllabic Transcription,* Harvard Semitic Series 32 (Atlanta, 1987), p. 141.

[32] Ps. 68:7.

[33] Note also that when the final syllable is doubly closed in the feminine, in Χουσαρτ *košart,* the *á* does not shift to *o* (Kutscher, "*kəna*ᶜ*anît, ᶜiḇrît,*" p. 96).

[34] Segert, *Grammar of Phoenician,* §36.42; Friedrich and Röllig, *Grammatik,* p. 85.

[35] Except for the *ü* which von Soden (*GAG,* §8c) sees in certain Akkadian "broken writings." (Most Assyriologists do not accept this.)

[36] William Sidney Allen, *Vox Graeca,* 3d ed. (Cambridge, 1987), pp. 65–69; see also Edgar Sturtevant, *The Pronunciation of Greek and Latin* (Philadelphia, 1940), §36.

Phoenician or other languages where the shift occurred, it is possible that *u* proceeded through the high-central rounded vowel before becoming *ü*.[44]

6. *ü* > *i*

Finally, *ü* may have been derounded to *i*.[45] The evidence for this last shift is not clear because of difficulties inherent in the transcriptional systems. As mentioned above (sec. II, 5), if we see proto-**u* transcribed with a grapheme that typically denotes *i*, we cannot know if that really indicates *i* or *ü*. Derounding of *ü* and merger with earlier *i*, however, is a cross-linguistically common phenomenon, especially as an end product of this sequence of shifts (see secs. IV and VI below).

III. Summary of the Reflexes of the Proto-Semitic Vowels

The steps of the sequence under consideration in Phoenician are summarized in table 2 below.

TABLE 2

Diachronic Development of Proto-Semitic **á*, **ā* **aw*, and **u* in Phoenician[46]

Proto-Semitic	*á*	*ā, aw*	*u*
Common Canaanite	*á*	*o*[47]	*u*
Phoenician	*o*	*u*	*ü*

[44] Hans H. Hock, *Principles of Historical Linguistics,* Trends in Linguistics, Studies and Monographs 34 (Berlin, 1986), p. 155.

[45] This shift is quite different from the "sound change u—i in closed syllables," with intermediate stage *ü*, analyzed at length by Kutscher, *The Language and Linguistic Background of the Isaiah Scroll (IQIsa[a]),* Studies on the Texts of the Desert of Judah, vol. 6 (Leiden, 1974), pp. 452–96. The shift Kutscher mentions is a fundamentally different type of shift from all those mentioned in our sequence, as Kutscher recognizes (ibid., p. 496), since it is an alternation between short vowels in a limited phonetic environment, perhaps as a type of *Murmelvokal,* especially under dissimilatory influence, rather than an unconditioned shift. Moreover, it is not a "strong" sound shift, but only a tendency that occurs to greater or lesser extent in various languages. Kutscher's shift of short *u* to *i* in closed syllables appears to be quite widespread in the area under consideration in this essay. John Huehnergard, however ("Historical Phonology and the Hebrew Piel," in Walter R. Bodine, ed., *Linguistics and Biblical Hebrew* [Winona Lake, Indiana, 1992], p. 221, n. 53), challenges the validity of this shift in at least some of the dialects that Kutscher considers.

[46] Kutscher ("*kəna^{c}anît, ^{c}iḇrît*") presents a slightly different picture of the Phoenician/Punic reflexes of Proto-Semitic **a*, **á*, **ā*, and **ū*: they were close to *a, o, u,* and *ü* respectively, but in Kutscher's opinion they may have been more precisely *æ* ("front a"), *ɔ*, high *o* (like Sznycer's "son intermédiaire entre *o* et *u*" [*Les passages puniques,* p. 149]), and *u* respectively. "Front *a*" would be the Phoenician *a* (unshifted to *o* when unstressed), which Kutscher places on the vowel chart in a more front position than the low mid *a* we have in our vowel chart (see table 1 above), presumably to make the *a* vowel as phonetically distinct as possible (ibid., pp. 92, 95). Kutscher's high *o* can be considered, like Sznycer's intermediate *o/u,* an intermediate stage of the shift *o* > *u* described here (sec. II, 4). In any case, Kutscher generally agrees with the directions of the shifts in table 3, while differing on the exact phonetic position of the reflexes. Because Kutscher treats both ʊ and ʊ as *u,* when in fact they denoted *u* and *ü* respectively, however, his conclusions do not take into account Phoenician *ü*.

[47] *aw* > *o* occurred in North Canaanite, but in the Jerusalem dialect only in unstressed syllables.

In Attic-Ionic Greek, the creation of $\bar{o}$ overcrowded the space of back vowels, creating the conditions for the shifts $\bar{o} > \bar{u}$ and $\bar{u} > \ddot{u}$. Later, the $\ddot{u}$ was derounded to $\bar{\imath}$. In spite of the well-known contacts between Phoenician and Greek, this sequence is cross-linguistically common, and so it probably developed independently in the two languages.[61]

Vocalic shifts belonging to the sequence of shifts have been reconstructed for the development from ancient Egyptian into Coptic. Direct evidence for the vocalization of the hieroglyphic stages of Egyptian is sparse, but it seems safe to assume that the following shifts occurred: Egyptian $\acute{a} >$ Coptic o, and $\acute{\bar{a}} > \bar{o}$.[62] (Here stressed short $*\acute{a}$ and long $*\acute{\bar{a}}$ have reflexes whose quantities differ. We cannot know the quantities of the reflexes of $*\acute{a}$ and $*\bar{a}$ in Phoenician.) Also the shift $u > i$ has been plausibly postulated for Egyptian and Coptic, including the intermediate step $*\ddot{u}$.[63]

V. Process of Pull- (Drag-) and Push-chains

Two modes of operation have been described for chain-shifts: the push-chain, in which the shift of one phoneme towards another causes the shift of the target phoneme away from its former position, setting off yet another shift in turn, and the drag-chain, in which the shift of one phoneme allows another to fill its vacated former position, the vacuum created being filled in turn.[64]

There is a fundamental difference in principle between the drag-chain and the push-chain models. In the drag-chain model, phonemes move to fill a gap in the phonetic structure. In the push-chain model, on the other hand, phonemes move to avoid a possible phonemic merger. But while phonetic structures tend to remain well balanced (restoring balance when it is lacking), phonemic inventories often tolerate mergers, even when the merger causes homonymy.[65] Thus, "push-chain analyses rest on considerably weaker theoretical foundations than do drag-chain analyses," and, in those languages that have been

[61] Sound developments in one language are frequently influenced by a neighboring unrelated language.

[62] Leo Depuydt, personal communication, fall 1994; Jürgen Osing, *Die Nominalbildung des Ägyptischen: Textband* (vol. 1), Deutsches Archäologisches Institut, Abteilung Kairo (Mainz, 1976), pp. 10–11; Wolfgang Schenkel, *Einführung in die altägyptische Sprachwissenschaft,* Orientalische Einführungen (Darmstadt, 1990), pp. 87–88 (he dates $\acute{a} > o$ to "ca. 550–450 v. Chr." and $\bar{a} > o$ to "zwischen der Zeit Ramses' II. und der Assyrerzeit"); Kurt Sethe, "Die Vokalisierung des Ägyptischen," *ZDMG* 77 (1923): 166–71; William Foxwell Albright, "The Principles of Egyptian Phonological Development," *Recueil de travaux relatifs à la philologie et à l'archéologie égyptiennes et assyriennes* 40 (1923): 66 (he dates the shifts to "after 1300").

[63] "Long Semitic [and Ancient Egyptian] $\bar{u}$ corresponds to Coptic $\bar{\imath}$. . . . There must have been a sound like French u or German ü in Neo-Egyptian." Werner Vycichl, "Egyptian and Other Hamito-Semitic Languages," in James and Theodora Bynon, eds., *Hamito-Semitica,* Proceedings of a Colloquium Held by the Historical Section of the Linguistics Association (Great Britain) at the School of Oriental Linguistics Association (Great Britain) at the School of Oriental and African Studies, University of London, on the 18th, 19th, and 20th of March 1970 = Janua Linguarum, Series Practica 200 (The Hague and Paris, 1975), p. 205; Albright, "Principles," p. 66; and Schenkel, "Einführung," p. 90, give a slightly different shift, $\bar{u} > \bar{e}$.

[64] This approach, together with an examination of similar vowel chain-shifts, is represented by André Martinet, *Economie des changements phonétiques: Traité de phonologie diachronique,* Bibliotheca Romanica, Series Prima, Manualia et Commentationes 10 (Bern, 1955). See esp. pp. 50–52. In fact, phonemes often do merge and do not always maintain the same relative distribution. Martinet's functionalist approach has been rejected by generative theories which define sound shifts as the insertion of discrete rules (Edward Greenstien, personal communication, spring 1993) and by a desire to avoid naive teleological arguments (Labov, *Principles,* p. 549).

[65] Hock, *Principles,* pp. 150–52.

TABLE 3

Greek[74]	Canaanite, Phoenician, Punic	Phoenician	Hebrew
proto-Greek *a* ↓ *ā*		*á* ↓ *ā* (tonic lengthening)	*á* ↓ *ā* (tonic lengthening)
ā ↓ *ɔ*	proto-Canaanite *ā* ↓ *ɔ* (intermediate step suggested for Canaanite Shift)	*ā* ↓ *ɔ* (intermediate step suggested for the Phoenician shift)	*ā* ↓ *ɔ* (Tiberian *qɔmɔṣ*)
	ɔ ↓ *o* (completion of Canaanite shift)	*ɔ* ↓ *o* (completion of Phoenician shift)	*ɔ* ↓ *o* (Ashkenazic Hebrew *qɔmɔṣ*)
o=ow ↓ *u*	*o* ↓ *u* (in Phoenician)		
u ↓ *ü*	*u* ↓ *ü*		
ü ↓ *i*	*ü* ↓ *i*[75]		

Note: the horizontal lines separate the developments of different proto-vowels.

[74] Sturtevant, *Pronunciation of Greek and Latin*, §§34–46.

[75] The evidence for *ü* > *i* is weak.