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Philippi’s Law is, however, notorious for having as many exceptions as examples:

alongside imperfect קֶבֶר têlêknâ we find imperative קֶבֶר ‘go (fp!)’, and ℅ rather than ℅ in the feminine plural imperfect forms of hîfîl and some pi’el verbs;

with the alleged development *bîntv > *batt > ℅ bat above, compare *întv > *itt > ℅ ‘êt ‘time’, and nearly all nouns of the pattern *gilî, whose reflex in Tiberian Hebrew is gîl, not qal as predicted by Philippi’s Law, such as *îmî > ℅ ‘îm ‘mother’; ℅îlîv > ℅ lêlv ‘heart’;

with the alleged development קִבְרִי > *gâbr > ℅ qêber above, compare *sîprv > *sipîr > ℅ sêpîr ‘sêpher ‘book’.

The only forms to which Philippi’s Law applies with some degree of consistency, in fact, are those of the perfect and imperfect verb paradigms in which the Proto-Semitic theme vowel *i in an originally closed, accented syllable appears in Tiberian Hebrew as patah, forms such as הָלְלִי הָלְלִי têlêknâ, and even in the latter the sound change to a is often blocked by paradigmatic pressure, especially in the derived stems.

Some Hebraists, following Philippi, have maintained that the sound rule operated early in the history of Hebrew (e.g., Bergsträsser, Blau). However, a relative chronology in which pausal lengthening must precede Philippi’s Law, so that the latter must therefore be relatively late in the development of Hebrew. Likewise, in a methodologically innovative paper, Lambdin (1985) showed that the rule did not operate in all attested varieties of Biblical Hebrew (such as those exhibited by Babylonian vocalization and by the Greek transcriptions of Origen’s Hexapla), and thus must have operated rather late in the history of Tiberian Hebrew. Lambdin also showed that the phonetic history of the → Segholates was at least partly determined by the nature of the medial root consonant.

References

Phoenician/Punic and Hebrew

1. Introduction

Hebrew and Phoenician (along with Punic, on which see below) belong to the Canaanite group of North-West Semitic (→ Northwest Semitic Languages and Hebrew), though no consensus exists on how closely related the two dialects/languages may be. According to dialect geography, Garr (1986) speaks of a dialect chain sweeping across all the Canaanite and Aramaic dialects (before the Persian period), with Phoenician at one linguistic extreme, Aramaic at the other and Hebrew as a minor linguistic center. In historical perspective, Ginsberg
(1970) places Phoenician and Ugaritic in the Phoenic sub-group within Canaanite, with Hebrew and the Transjordanian dialects classified together in the Hebraic sub-group; while Rainey (2007), somewhat in line with Ginsberg (though not concerning Ugaritic), sees even stronger links between Hebrew and the Transjordanian dialects, with a concomitant argument against a close Hebrew-Phoenician relationship. In any case, after Hebrew, Phoenician/Punic is the best known dialect/language of the Canaanite group. Moreover, regardless of which classification schema one adheres to, almost all scholars would agree that Hebrew and Phoenician were characterized by a certain amount, if not a high degree, of mutual intelligibility.

The first known Phoenician inscriptions belong to the 11th century B.C.E. (cf. Lemaire 2006–2007; Rollston 2008, against Sass 2005). As such, Phoenician is attested slightly earlier than Hebrew, whose first inscriptions date to the 10th century B.C.E. Hebrew eventually achieved a long and extensive literary tradition (cf. the biblical books especially), while Phoenician is known only from inscriptions. The Phoenician epigraphic corpus comprises several hundred texts from the Levant and neighboring lands, some of which (e.g., Karatepe and Incirli) are quite extensive, and reaches approximately 7000 texts when one includes the Punic material. The epigraphic material has been published over the course of more than a century in the two series Corpus Inscriptionum Semiticarum (CIS I; 1881–) and Répertoire d’Épigraphie Sémitique (RÉS; 1900–), with selections of the most important texts collected in works such as KAI and Gibson 1982.

The Greeks referred to the inhabitants of coastal Lebanon and northern Israel, and presumably of inland southern Syria as well, as Phoenicians—though they probably called themselves Canaanites. The language and its speakers spread quickly: by the 9th century B.C.E. Phoenician travellers had already reached southern Anatolia, Egypt, Cyprus, Crete, Rhodes and other Aegean islands, and probably Mainland Greece. From the first half of the 8th century B.C.E., they founded towns (‘colonies’) on Cyprus and in the Western Mediterranean, most importantly Carthage, near modern-day Tunis (founded according to tradition in 814 B.C.E.). Eventually the people of these western Phoenician colonies would be called Poeni by their Latin-speaking Roman neighbors; and from this term derives the modern scholarly term ‘Punic’ to refer to the stage of the Phoenician language used in the West under Carthaginian hegemony (Amadasi Guzzo 2005).

In Phoenician/Punic we recognize different dialects and phases distinguished by orthographic (in many cases representing phonological), morphological, and, to a lesser degree, lexical features. In Phoenicia proper, Standard Phoenician (or Tyro-Sidonian) is attested from about the 9th to the 2nd (or perhaps 1st) century B.C.E., though some of the important inscriptions in this dialect come from Cyprus and Anatolia (e.g., the aforementioned Karatepe). However, attested earlier is the Byblian dialect (Amadasi Guzzo 1994; Gzella forthcoming) which has two phases: a) an ancient one attested mainly in the 11th-century (?) Ahirom sarcophagus (more archaic than the following documents), and by a group of royal inscriptions from the 10th–early 9th century; and then, after a gap, b) a series of Persian-period (late 6th–late 4th century B.C.E.) inscriptions reflecting the influence of Standard Phoenician. In the West, a Punic phase developed from Phoenician starting with the early/mid-6th century B.C.E. After the destruction of Carthage (146 B.C.E.), we speak of Late Punic for the language which is still written in Punic script until the 2nd century C.E. (as proven by KAI 173 from Sardinia, mentioning the name of the emperor Antoninus Pius [r. 138–161]; cf. Amadasi Guzzo 1999; Szynycer 1999; Jongeling 2008). The language survived for at least three more centuries, however, since the writings of St. Augustine (354–450), who hailed from Hippo in modern-day eastern Algeria, demonstrate that Punic was still spoken in his day. Proposals for more detailed dialect divisions than that offered here (see, e.g., Garbini 1988) are based mainly on the geographic distribution of the inscriptions.

The Phoenicians used a 22-letter alphabet, which in turn was borrowed by the Israelites and all others in the Levant (Arameans, Ammonites, Moabites, Edomites, Philistines). In the West, a Punic variant of the Phoenician script developed, especially under Carthaginian influence. The script which prevailed in the Late Punic phase is a cursive variant of the Phoenician alphabet, called Neo-Punic. It is
important to note that while the scribes who wrote Hebrew, Aramaic, etc., developed *matres lectionis* to indicate vowels, especially long vowels, this practice was not adopted by Phoenician scribes, who apparently were much more conservative in their approach. As a result, a form such as תֹּלֶת mlkt is ambiguous, with possible meanings including (but not limited to) ‘I ruled’ and ‘you ruled’, though, fortunately, context usually helps to resolve potential ambiguities. Only in the Late Persian texts do vowel letters appear, most likely under the influence of Greek and Latin orthography.

Other sources for Phoenician include the transcriptions of personal names in Egyptian, Assyrian, Greek, and Latin. We also have a ten-line speech in Punic preserved in Plautus’ Latin comedy *Poenulus* (Sznycer 1967; Gratwick 1971), some Punic inscriptions written in the Greek alphabet, and about fifty so-called ‘Latino-Punic’ inscriptions (2nd–5th century C.E.), that is, texts written in the Punic language using Latin letters. Each of these sources provides information about the late phases of the language (Kerr 2010).

Our knowledge of Phoenician/Punic remains partial because of the limited sources, the present lack of a real literature, and the nature of the writing system. The language must be partly reconstructed based on comparison with related languages, especially with the better known Hebrew. By contrast, the contribution of Phoenician to our understanding of Hebrew is very limited. In some instances, Phoenician helps to account for specific Hebrew features, especially those characteristic of Israelian (i.e., northern) Hebrew (henceforth IH). This is due to a) the geographical proximity between northern Israel and Phoenicia, b) cultural influence between the two, especially in the direction of Phoenicia over Israel (as attested archaeologically in some northern Israelite sites), and c) the intermarriage of the royal families, as described in the Bible specifically for Ahab, king of Israel, and Jezebel, daughter of Ethbaal of Tyre (even if the Bible uses the term ‘Sidonian’ [1 Kgs 16.31]).

The best examples of features shared by Phoenician and northern Hebrew come from the Samaria ostraca: a) monophthongization of the diphthong *ay > e*, as reflected in יֵין *yên ‘wine’ (cf. Biblical Hebrew [reflecting Judahite Hebrew] יָיִן yayin); and b) the use of שָׁנָה *šanā ‘year’ (< *šanat), though one must admit that this feature is characteristic of Aramaic as well.

As noted, Phoenician and Hebrew are closely related and typologically similar. Nonetheless, many recognizable differences exist. In what follows, we list some of these distinctions, concentrating on phonology and, to a lesser extent, morphology, syntax, and vocabulary. On occasion, we cite parallels from Hebrew, especially from compositions presumed to be written in IH, such as the sections of Kings that describe the northern kingdom of Israel (Rendsburg 2002), the stories of the northern judges (Rendsburg 2003), the book of Proverbs (Ginsberg 1982:35–36), selected psalms (Rendsburg 1990), and others. These IH features represent grammatical and lexical isoglosses linking IH and Phoenician.

2. Phonology

Phoenician had 22 consonants, represented by 22 alphabetic signs. Hebrew possessed the additional phonemes /šl/, /šl/ and /šl/ (Blau 1982), which did not exist in Phoenician. In the course of its development, Phoenician/Punic merged /šl/ with /šl/; cf. the Phoenician transcriptions פַּטְלִמְשׁ ptlmys and שֶׁפּוֹלְמֶשׁ tmljs for Greek Πτολεμαῖος (KAI 19.5, 6–7 and KAI 42.2; 43.4, 6, 7, 8). However, some Latino-Punic inscriptions apparently distinguish between the two phonemes and use the Greek character Σ for /š/, but Latin S for /š/. Compare Latino-Punic Σμαρ ‘watcher’ (KAI 179.3), corresponding to Hebrew סָמֶר sômîr (see further PPG 3 §43–48). Somewhat surprisingly Greek renderings of the names of the two large Phoenician city-states present different letters, even though both begin with the same Phoenician (though apparently not Proto-Semitic) consonant ס /š/, viz., תמר ‘Tyre’ (for רְמָר sr) and סידון ‘Sidon’ (for סִדְנוֹν sdn) (PPG 3 §11 note; see also Steiner 1982:66–67). Peculiar to Phoenician/Punic is the tendency for voiced /zl/ (<*ð) to become voiceless /šl/, as in רֶשֶׁר šer ‘he remembered’ (Hebrew ראֵו zākar) and Late Hebrew מַשְׁתַּחזֶל st ‘this’ (m. and f.) (cf. Hebrew מַשִׁתְךָ zót ‘this’ [f.]).

As in Hebrew, stops tended to become fricatives, without following, however, the rules established for Tiberian Hebrew (for this reason, in the conventional reconstruction of Phoenician/Punic words, these consonants are
usually transcribed, regardless of their position within the word, as stops and not as fricatives). In particular, there is not enough evidence for the entire set of the so-called bdgkpt letters. The development is clear for lpl, which in Late Punic was always pronounced [l], even at the beginning of words, e.g., Latino-Punic fel ‘he did’ (IRT 873.2) versus Hebrew שֶׁלָּי paš‘al. Concerning lki and lif, only in the West from the 3rd-2nd century B.C.E. do Greek and Latin transcriptions of Phoenician/Punic words attest to the regular fricative pronunciation (for details, see PPG \textsuperscript{1} §37). For the other stops, the development is less certain (cf. PPG \textsuperscript{1} §§38 and 41).

As in Hebrew, lal normally assimilates before another consonant. In Punic, however, there is a strong tendency to secondary dissimilation, as in לַיְלָה, לְבַיִת, etc. Concerning vowels, along with the general Canaanite shift of (long) lal > lol, in Phoenician stressed (short) lal also developed into lol (long?), as revealed by transcriptions such as לֹא ןע ‘white’ (cf. Hebrew הָבַן lābān) and וַאֲדֹפ ‘he vowed’ (cf. Hebrew רָע nādar).

Concerning the feminine singular suffix of Phoenician, see Huehnergard (1991) and PPG \textsuperscript{1} (§112). In the nominal qatt, qitl, and quitl patterns (‘segholate’ in Hebrew; → Noun), Punic did not insert, as does Tiberian Hebrew, an anaptyxic vowel. יַעַב ‘servant’, for example, was transcribed into Greek αὐτός (cf. Hebrew יָבּוּב ebed). Similarly, we know that מַלְךָ mlk was pronounced mil/k (cf. Hebrew מָלַק > מַלָּק melek) (PPG \textsuperscript{1} §§81a, 193b; see also Fassberg 2002:210). By Late Punic, however, there may have been a tendency to develop anaptyxis, as illustrated by יִבְאָר qbr ’tomb’, probably lq(a)barl (אר ‘in this period was often used to represent the vowel lal’).

Unlike Hebrew, Phoenician feminine singular nominal suffix preserved the final ר -t in the absolute state, as in נִמְלָק mlkān, mlkāt ‘queen’ /mlkot/ (cf. Hebrew נֶמֶל malkān, mlkān, mlkāt ‘queen’ /mlkot/). The form of the feminine singular suffix is thus /-ot/, based on the aforementioned stressed /al > ol/ shift and the preservation of final ר -t. Such forms occur in IH texts as well (note the feminine singular verbs predicated to these subjects), e.g., נְהַבֶּמֶת hāḇmōt ‘wisdom’ (Prov. 1.20, 9.1, 24.7), נְהַבֶּמֶת hāḇmōt ‘wise woman’ (Judg. 5.29, Prov. 14.1); see also נְהַבֶּמֶת massahôt ‘pillar’ (Ezek. 26.11) in a proclamation directed at Tyre (→ Addressee-Switching).

3. Morphology

For the independent personal pronoun of the 1st person singular, Phoenician/Punic had
only the older form יְנִי ‘nk l’anókíl and not, like Hebrew, the apparently more recent form יְנִי ‘aníi. In Phoenician/Punic the distinction between the independent pronoun of the 3rd person masculine and feminine consisted of a vowel alternation: /l/ for the masculine, /i/ for the feminine, while the ending was /ml/ for both genders: masculine bumat(u) and feminine bimat(u), both written תֹּמה bmt. This is contrary to Hebrew, which differentiates the genders (in the 2nd and 3rd person plural) by the consonants -ם- -m- and -מ- -n-, respectively, while the vowel was /e/ (< *i/) for both genders (masc. יהֹמ bēmmā and fem. יהֹמ bēmmā). The same difference between masculine and feminine appears in the suffixed pronouns, Hebrew having the ending -ם -m for the masculine, but -ן -n for the feminine, while Phoenician/Punic has -ם-ם- -ml-mm for both genders, but a vowel opposition, namely /l/ versus /l/ (see above).

Contrary to Hebrew, the Phoenician/Punic causative was yip’il instead of bif’il, for example תְשַׁכְּרֵי yqds/t iyqdsíthi ‘I consoled’; in Punic and Late Punic the prefix was written -א- -n- or -א- -y-. Two examples of the yip’il may occur in the Bible (Gordon 1951:50, 59): יְדָדְתָה yôd̄’thi ‘I informed’ (1 Sam. 21.3); יבְּנַקק וַיַּקְּרָנֻת יבְּנָקק yakkîránû ‘he [Israel] recognizes us (not)’ (Lsa. 63.16), though, admittedly, neither one of these passages occurs in an Israeli context.

The root of the verb ‘go’ in Phoenician/Punic is דְּל ylk (with initial yod, as also in Ugaritic), in contrast to Hebrew דְּל hlk (with initial he), though note that the prefix-conjugation in Hebrew seems to be built on the root דְּל ylk.

The passive participle probably had the pattern qatîl, as in Aramaic and against Hebrew qatîl; cf. Late Punic דְּרַב ybrk ‘blessed’ and the personal names transcribed in Latin as Baribal and Baric.

As relative/determinative marker, Old Byblian had ת z, corresponding to Hebrew נֵז xe and ת zū. The Hebrew forms occur in archaic poems, e.g., Judg. 5.5, Exod. 15.13, 16 (the former is also northern), but occasionally in IH texts as well, e.g., מִקְלָא ת ש י בֵי מ י כ yifkîka ze yolâdekâ ‘your father who bore you’ (Prov. 23:26).

Standard Phoenician/Punic used the relative/determinative marker ש ע َّ s. According to some scholars, the form ש ע َّ s stems from an original ש َّ s (supposedly connected with Akkadian ša), with prosthetic ‘aleph (cf. Holmstedt 2007). This would then contrast with Hebrew ד ע َّ s, which is of nominal origin. However, others have argued that Phoenician ש ע َّ s and Hebrew ד ע َّ s are cognate, with Phoenician attesting to an abbreviated form resulting from grammaticalization (Huehnergard 2006). Regardless, we may note that IH texts use the shorter form (without prosthetic ‘aleph) -ש š-, e.g., the Song of Deborah (Judg. 5.7 [2x]) and the Gideon cycle (Judg. 6.17, 7.12, 8.26) (in the three first attestations actually -שׁ š-), both of which are geographically set in the north. Instead of ש ע َّ s, Late Punic, in contrast to all other West Semitic languages, sometimes used the interrogative/indefinite pronoun י מ my lml ‘who’ and נ מ (Late Punic נ מ m’) mn > lml ‘what’, e.g., אָבִיךָ נ מ עבאם ננ at bn yurhûn ‘the stele which Yurahian built’ (Jongeling 2008: 83). To negate nouns and verbs, Phoenician/Punic used נ י yl/l and ב ל b/l/ball (along with the compound י ב ל י ב l/iball), as opposed to Hebrew א ל l. For a Hebrew example from a prophet active in the north, see י רכְב ייַמ ר א י כ יב lãnBNדס ‘ם יב נל לבב נ יש יב יב נל לבב נ יש יב יב נל לb’ nambsyt m’ b’n yurhûn ‘the stele which Yurahian built’ (Jongeling 2008: 83).

4. Syntax

In syntax, Phoenician/Punic did not make use of the ancient preterite (prefix conjugation) preceded by w- as a narrative tense (Hebrew usuwiqtol). Phoenician instead developed the usage of the (absolute) infinitive followed by an independent personal pronoun for narration, e.g., ש נר מ ק נ נ מ l wškr ‘nk ‘ly mlk ‘sr hwa-sakor ‘anókíl ‘alayu mlk ‘aššurl ‘and I engaged against him the king of Assyria’ (KAI 24.7–8; though for a different analysis of such constructions see Lipiński 2010). Note instances of this usage in IH, e.g., אָבִיךָ ק ו מ נ כ יב lãnBNדס hak-kaddìm ‘and the vessels shattered’ (Judg. 7.19; albeit with a noun rather than a pronoun as subject), once more in the Gideon story.

5. Lexicon

Some lexical differences between Phoenician/Punic and Hebrew are worth noting. Phoenician

uses עִישׁ kn /kōn/ ‘he was’ versus Hebrew איש אִישִׁים (Hebrew איש אִישׁים is rare and poetical); הָרִיס hrs ‘gold’ versus Hebrew הָרִים hārīm, see below; גֶּרֶט geret ‘city’ versus Hebrew עַר yr (on Hebrew עַר yr, see below); יָרָה yrh ‘month’ versus Hebrew יָרוֹת yerōt, see below); מַנְשֵׁה ’sm men’ (based directly on singular מַנְשֶׁה ‘man’) versus Hebrew מַנְשֵׁים manšēm (built from a different stem from the singular form מֶנֶשׁ). Traces of such forms occur in the Bible, e.g., עִישׁים hārīs ‘gold’ appears four times in Proverbs and is used in Zech. 9.3 in a judgment directed against Tyre; גֶּרֶט geret ‘city’ appears four times in Proverbs; and מַנְשֵׁים manšēm occurs in Ps. 141.4 and Prov. 8.4. Finally, note the presence of יָרָה yerah ‘month’ in 1 Kgs 6.37–38, 8.2, along with the Phoenician month names Ziv, Bul, and Etanim, suggesting that Phoenician scribes are responsible for the Temple-building account, just as Phoenician architects and craftsmen were responsible for its actual construction.

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Phonetics of Modern Hebrew: Acoustic

1. Introduction to Acoustic Phonetics

Phonetics is a branch of linguistics which focuses on the study of speech sounds from a concrete physiological and physical perspective. The science of Phonetics is divided into two areas of speech investigation: the study of the physiology of speech production, articulatory phonetics; and the research of the acoustic output of speech, acoustic phonetics. Phonetics is related to phonology, as both fields study speech sounds. However, phonetics is distinct from phonology in that it handles tangible properties of speech, while phonology focuses on the abstract properties of speech sounds, their organization and patterning cross-linguistically.

2. History of Phonetics

Theories about speech production date back to the 18th century; however, the investigation of the acoustic output of speech began only in the late 1930’s, when machines such as the spectrograph and cineradiographs became available. Acoustic phonetic research developed with the technological ability to record, measure and analyze speech.

Phonetic research in Modern Hebrew is scarce, and much of the available phonetic research is largely acoustic in nature (for few studies in articulatory phonetics see Articulatory Phonetics). Several studies can be mentioned here: Chayen (1972, 1973), whose work was mostly descriptive in nature, recorded and studied the Modern Hebrew accent of the 1960’s. Devens (1980) documented the speech of Oriental Hebrew speakers at the end of the 1970’s and beginning of the 1980’s. Enoch and Kaplan (1969) provided measurements regarding Modern Hebrew vowels. Lastly, Aronson et al. (1996), Most, Amir and Tobin (2000), Schwarzwald (1972) and Tene (1962) all provide acoustic measurements of vowels in Modern Hebrew.