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History of the Ancient and Modern Hebrew Language
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a. What is a Phoneme?

Box 8

Phones and Phonemes

“Modern linguistics insists on an important distinction between phone and phoneme. A phone is a sound heard or articulated in actual speech, and as such it is a physical entity which can be measured and recorded by mechanical devices. A classification of consonants as labial, dental, etc. and of vowels as front, back, mid, high, etc. accords with such an approach. By contrast, a phoneme is what is perceived to be a particular phonetic entity, and thus by definition it is an abstraction, something like the common denominator of countless phones, namely actual sounds which share certain essential features. **Even one and the same speaker—and of course, different speakers of a given language —pronounces a given phoneme in numerous variations, which however are normally perceived as one phoneme, without creating any serious problem of communication.”**

Quoted from [Joūon-Muraoka 1991](#) § 5

A phoneme is -

- A contrastive unit in the sound system of a particular language.
- A minimal unit that serves to distinguish between meanings of words.
- Pronounced in one or more ways, depending on the number of allophones.
- Represented between slashes by convention.

Example:

/b/, /j/, /o/

nb. I have not used slashes in the following tables. For convenience, the transcription is a compromise between phonemic and phonetic

b. Vowel and Consonant Length

Box 9

The Nature of Consonant and Vowel Length

In pre-medieval Hebrew, vowel² and consonant length probably resembled their manifestation in spoken Arabic. The following is a quote from Raja Tewfik Nasr's *An English-colloquial Arabic Dictionary*⁸, (p. xvi)

Variations in the length of both consonants and vowels produce variations in meaning.... **The difference between the short and long sounds is that the long sounds take a relatively longer time to be completely produced than the short ones. In the case of a stop, the explosion occurs after a longer withholding**; in the case of a vowel, lateral, or fricative, it is continued longer; in the case of a flap, the flaps are repeated (hence the trills); and in the case of a nasal, the vibration of the vocal cords and the flow of breath through the nasal passage last longer.

As with spoken Arabic "The relative length of consonants and vowels contributes greatly to the rhythmic patterns of speech...."⁴ and hence is vital to appreciating the meter of biblical poetry.

Box 10

Were Vowel Quantity and Consonant Quantity Phonemic in BH?

"Proto-Semitic /i:/ and /u:/ were retained unchanged throughout the history of Hebrew, but /a:/ became raised and rounded by the fourteenth century BCE in all or most environments. The evidence of the Tiberian reading tradition ... suggests that there were two raised and rounded allophones of /a:/ which in one instance yielded doublets *kan:o'* = *kan:â'* 'zealous'.

"Eventually, the inherited short vowels also developed allophones as did the up-gliding diphthongs: [â:] and [ä] from /a/; and [o:], [o] and [â] from /u/; [e:], [e], and [ä] from /i/; [o:] from /aw/; [e:] and [ä:] from /ay/. **The merger of some of these allophones resulted in a completely reorganized system in which the number of contrastive qualities was doubled and the role of quantity was greatly reduced.**

"Long [i:] and [u:] are in complementary distribution with [y] and [w], respectively, and alternate with

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them, e.g.

['kāli:] 'vessel' ~ [kālyə'kā] 'your vessel', ['pi:hu:] ~ ['pi:w] 'his mouth', ['šāku:] 'lookout point' ~ [šāk'wi:] 'rooster', [yištahā'wā:] 'he will prostrate himself' ~ [way:iš'taḥu:] 'and he prostrated himself'. It is thus possible that the semivowels should be viewed as allophones of vowels rather than consonantal phonemes...."

"Outside of closed unstressed syllables, which excluded long vowels, Ancient Hebrew had a contrast between long and short vowels. **However, between the tannaitic period and the time of the Masoretes, short vowels in stressed syllables lengthened, erasing the contrast in those syllables.** Thus, while Hebrew was still a spoken language, the *o* of infinitival yā'ko(w)l 'be able' was long, while the *o* of sg. 3m. perfect yā'kol 'he was able' was short, like the ancestor of *ā* in yə'kāl' tām. In the Pre-Tiberian reading tradition, the *o* of sg. 3m. perfect

yā'kol lengthened, splitting off from the ancestor of *ā* in yə'kāl' tām and merging with the long *o* of infinitival

yā'kow^l.

"As a result of this change, length became to a large extent conditioned by stress⁶. Outside of opened unstressed syllables (where a length contrast survived), **there was a simple rule: stressed vowels are long and unstressed vowels are short.**

Non-systematic representation of vowel length through the use of *matres lectionis* ... developed in Standard Biblical Hebrew. These vowel letters are used to mark not only etymologically long vowels but also stressed vowels in pre-pausal⁷ position. **In the Tiberian reading tradition, such vowels were probably no longer than other stressed vowels**, but morphophonemic alterations show that a length difference had once existed, e.g. *tiškab* ~ *tiškāb* < **tiškab* ~ **tiškāb*, *yəšal:ah* ~ *yəšal:eah* < **yišal:eh* ~ **yišal:ēh*.

"Consonant length (like vowel length) was phonemic in Proto-Hebrew, but it was not represented in the biblical period, even in an unsystematic way. Thus, the spelling *crwmym* was used for both members of the minimal pair Job 5:12 [ʕāru:mi:m (עֲרוּמִים) not = Job 22:6 [ʕārum:i:m (עֲרוּמִים) 'crafty (pl. m.) not = naked (pl. m.)'. And the spelling *ntnw* was used for both [nāṭan:u:] 'we gave' and [nāṭānu:] 'they gave'. It is only in Mishnaic Hebrew that representation of consonant length began to appear....

"Most of the Proto-Hebrew minimal pairs are no longer valid for the Tiberian system.... The fact remains, however, that the Masoretes considered consonant length important enough to create a sign for it ("strong" *dagesh*). Two minimal pairs noted by the Masoretes themselves are Job 5:12 *ʕāru^wm:ī^wm* (עֲרוּמִים) not = Job 22:6 *ʕāru^wm:ī^wm* (עֲרוּמִים) (see above) and Lev. 7:30 *təbī'ā'nāh* (תְּבִיאָנָה) not = Lev. 6:14

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təbiv'än:âh (תְּבִיאֲנָה) ' they (f.) shall bring not = you/she shall bring it'. **Although Arabic transcriptions suggest that, in the first pair, the vowel preceding the lengthened consonant was shorter than the vowel preceding its unlengthened counterpart, the Masoretes clearly considered this difference to be secondary, unworthy of being represented.**"⁸

"In the tradition of Hebrew that was adopted by the Tiberian Masoretes, the following vowel quality shifts took place some time before the Masoretic period: $e:\bar{e} > \varepsilon:\bar{\varepsilon}$, $a:\bar{a} > a:\bar{a}$. The result was the emergence of four vowel qualities (ε , e , a , ω) from an original two (e , a). The signs *şere* and *qameş* in Tiberian Hebrew represent vowels that were long e and a respectively before the operation of the quality shifts. The signs *segol* and *patah* in Tiberian Hebrew represent vowels that were short e and a respectively before the operation of the quality shifts.

"At some stage after these quality shifts had taken place, vowel length became totally dependent on stress and syllabic structure⁹. All stressed vowels and all vowels in an unstressed open syllable were pronounced long¹⁰. As a result not only *qameş* and *şere* but also *patah* and *segol* were pronounced long when stressed or when in an open syllable.

"At some stage after vowel length became dependent on stress and syllable structure, long and short ω developed into two distinct qualities: $\omega:\bar{\omega} > \omega:\bar{\omega}$. For this reason long $\bar{\omega}$ occurs only in stressed or unstressed open syllables whereas short ω occurs only in unstressed closed syllables."^{11 12}

Box 11

Trade-off Between Vowel and Consonant Length

In both Hebrew and Arabic, in the words of Blau, "...rhythmically long vowel + simple consonant are more or less identical to short vowel + double consonant...."¹³

Thus [pretonic gemination at times substitutes for pretonic lengthening](#)¹⁴.

See also

[Simplification of diphthongs](#)

[Elision of word-final aleph with compensatory lengthening of the preceding vowel.](#)

[Interrogative Pronoun **מה**](#)

Box 12

Pausal Forms

Pausal forms in TH are probably closely related to the rhythm of formal reading of scripture¹⁵. In many instances they reveal pre-Tiberian stress patterns and the quality of vowels reduced to vocal *šwas* in contextual forms. Where appropriate I include pausal, as well as contextual forms, in tables.

Table 8

Distinctive Vowel Length and Syllable Type in EBHP and their Reflex in TH

| | <u>EBHP</u> <u>*/EBHP/*</u> ¹⁶ (c. 850-550 BCE) | <u>TH</u> <u>/TH/* [TH]</u> (c. 850 CE) |
|--|---|---|
| <i>Open stressed syllable</i> | Long */h <u>û</u> / (<*/h <u>u</u> 'a/) "he" | Long in [TH] /'hu/ *['h <u>u</u> :] "he" |
| <i>Closed stressed syllable</i> | <p>Long in nouns, short in verbs <u>*/na'tan/ "he gave": */na'ta:n/</u> <u>"Nathan"</u></p> <p>*/ga'mal/ "he weaned": */ga'ma:l/ "camel"</p> | <p>Long in [TH]</p> <p>/n<u>â</u>'tan/ *['no:'<u>œ</u>:n] "he gave": /n<u>â</u>'t<u>ā</u>n/ *['no:'<u>θ</u>ɔ:n] "Nathan"</p> <p>/g<u>â</u>'mal/ *['gɔ:'m<u>e</u>:l] "he weaned": /g<u>â</u>'m<u>âl</u>/ *['gɔ:'m<u>ɔ</u>:l] "camel"</p> |
| <p><i>Stressed syllable doubly closed in EBHP</i></p> <p><i>N.b. in TH doubly closed syllables rarely remain because of reduction of <u>geminated final consonant</u> and insertion of <u>anaptyctic vowels</u> breaking up other consonantal clusters</i></p> | Short */h <u>u</u> q/ "law" */š <u>ō</u> 'mart/ (<*/š <u>ō</u> 'mirt/) <i>qal</i> <u>a.p.</u> fs. "guard, guarding" | Long in [TH] /'h <u>o</u> q/ *['h <u>o</u> :q] "law" /š <u>o</u> 'm <u>æ</u> r <u>ɛ</u> t/ *['j <u>o</u> : 'm <u>æ</u> :r <u>ɛ</u> θ] "guard, guarding" |
| <i>Open unstressed syllable</i> | Long/Short */s <u>ū</u> 'gar/ "cage" */s <u>u</u> 'gar/ <i>qal</i> passive <u>PC</u> 3ms. "it was closed" | Long in [TH] /s <u>u</u> 'g <u>ar</u> / *['s <u>u</u> : 'y <u>e</u> :r] "cage" /s <u>u</u> g' <u>gar</u> / *['s <u>u</u> g 'g <u>e</u> :r] "it was closed" (syllable closed by gemination resulting in form identical to <i>pual</i>) ¹⁷ |
| <i>Closed unstressed syllable</i> | Long/Short */min-/ "from" */,m <u>ī</u> n/ "variety of.." | Short in [TH] /min-/ "from" /, <u>ɪ</u> min/ *[',m <u>ī</u> n] "variety of.." |

| | | |
|--|---|--|
| | <u>EBHP</u> <u>*/EBHP/*¹⁶</u> (c. 850-550 BCE) | <u>TH</u> <u>/TH/* [TH]</u> (c. 850 CE) |
| <i>Unstressed syllable doubly closed in EBHP</i> | Short */ <u>l</u> .ḥuqq/ "law of" */šō,mart/ (<*/šō,mirt/) <i>qa</i> / a.p. fs. <u>constr.</u> "guard of" | Long in [TH] /ḥoq/ *[,ḥo:q] "law of" /šo,mɛrɛt/ *[jo:,mɛ:rɛθ] "guard of" |

Table 9

Phonemic Status of Vowel and Consonant Length and Quality and of Word Stress over the History of the Hebrew Language

| Phase | Date | Examples (phonemically presented) |
|---|--------------------------|---|
| <u><i>BHA phase 1 (PNWS)</i></u> | c. 2000 - c. 1200 BCE | /ʿālamu/ > /ʿōlamu/ /ša'lāmu/ > /ša'lōmu/ /ʿqātilu/ > /ʿqōtilu/ (<u>ms. a.p. qa</u>) /ʿqātiltu/ > /ʿqōtiltu/ (<u>fs. a.p. qa</u>) /pa'qīdu/ /ʿamara/ ("he said") /ʿamarū/ ("they said") |
| <u><i>BHA phase 2 (PH)</i></u> | c. 1200 - c. 1000 BCE | /ʿōlamu/ /ša'lōmu/ /qō'ṭilu/ (ms. a.p. <i>qa</i>) /qō'ṭiltu/ (fs. a.p. <i>qa</i>) /pa'qīdu/ /ʿamara/ /ʿamarū/ |
| <u><i>BHA phase 3 (/EBHP*)</i></u> (note <u>non-spirantization of the <i>bgdkpt</i> consonants</u>) | c. 1000 - c. 500 BCE | /ʿō'la:m/ /ša'lōm/ |

| Phase | Date | Examples (phonemically presented) |
|---|---------------------------|---|
| | | /qō'te:l/ (ms. a.p. <i>qa</i>) /qō'tilt/ (f.s. a.p. <i>qa</i>) /pa'qīd/ /'a'mar/ /'a'marū/ |
| <u><i>BHA phase 4 (/LBHP/)</i></u> | c. 500 BCE – c. 200 CE | /cō'la:m/ /ša'lōm/ /qō'te:l/ (ms. a.p. <i>qa</i>) /qō'tɛlt/ (fs. a.p. <i>qa</i>) /pa'qīd/ /'a'ma:r/ /'a'marū/ |
| <u><i>BHA phase 5 (/TH* [TH])</i></u> | c. 850 CE | /cō'lām/ [cō:'lɔ:m] /ša'lom/ [ʃɔ:'lɔ:m] /qo'tɛl/ [qɔ:'tɛ:l] (ms. a.p. Part. <i>qa</i>) /qo'tɛlɛt/ [qɔ:'tɛ:lɛθ] (fs. a.p. <i>qa</i>) /pā'qid/ [pɔ:'qi:ð] /'ā'mar/ [ʔɔ:'mɛ:r] /'āmə'ru/ [ʔɔ:mə'ru:] |
| <u>No Phonetic distinction in length of vowels (/H)</u> | Current Israeli Hebrew | /o'lam/ /ša'lom/ /ko'tɛl/ (ms. a.p. <i>qa</i>) /ko'tɛlɛt/ (fs. a.p. <i>qa</i>) /pa'qid/ /a'mar/ /am'ru/ |

Table 10

**Phonemic Status and Phonetic Realization of Vowel and Consonant Length in
Biblical, Tiberian and Israeli Hebrew**

| *PH (c. 1200 BCE) | EBHP */EBHP/* [EBHP] ¹⁸ (c. 850-550 BCE) | TH /TH/* [TH] (c. 850 CE) | MT pronounced as IH [IH] (present) | Phonemic distinction based on and comments |
|--|---|--|---|--|
| /min/ /mīn/ | /min/ [mɪn] “from” /mīn/ [mi:n] “variety of..” | מִן /min/ [min] מִין /min/ [mi:n] | [min] [min] | PH – vowel length EBHP - vowel length, stress TH – spelling, stress and context IH – spelling and context |
| /šitu/ √šyt /šītu/ √šyt | /še:t/ [ʃe:t] “base” /šīt/ [ʃi:t] (qal inf. constr.) “putting” | שֵׁט /še:t/ * [ʃe:θ] שִׁיט /šīt/ * [ʃi:θ] | [ʃet] [ʃit] | PH – vowel length EBHP - vowel quality TH and IH –spelling and vowel quality |
| | /itt/ [ʔitt] “with” | אִתּ /et/ * [ʔe:θ] | [et] | EBHP - consonant length (gemination) and, possibly, vowel quality. |
| | /at/ or /it/ [ʔet], [ʔit] or [ʔet] (particle indicating direct object) | אֵת /et/ * [ʔe:θ] אִתּ /et/ * [ʔe:θ] | [et] [et] | TH and IH - context |
| /c̣abdu/ /c̣abadū > /c̣a'badū/ | /c̣abd/ [c̣ebd] or [c̣ebəd] “slave” /c̣a'badū/ [c̣e'beduː] “they served” | עֲבָדוּ /c̣ebəd/ [c̣e:vəd̥] עֲבָדוּ /c̣ābəd̥du/ [c̣o:və'ðu:] | [ɛvɛd] [av'du] | PH – vowel distribution and length. EBHP – vowel quality and distribution; spelling TH and IH – vowel quality and distribution; spelling |
| /ya'qūmu/ /yaqum/ | /ya'qūm/ [ye'qu:m] “he will stand” (qal <i>indicative</i>) /yaqum/ ¹⁹ [yequm] or [yeqo ʔ] “let him stand” (qal <i>jussive</i>) | יָקוּם /yā'qum/ [yɔ:'qu:m] יִקַּם /yā'qom/ yɔ:'qo:m] | [ya'kum] [ya'kom] | PH – vowel length, final short vowel and stress distinguish indicative from preterite/jussive EBHP - vowel length and stress distinguish indicative from jussive. Preterite distinguished from jussive by |

| <p>*PH (c. 1200 BCE)</p> | <p>EBHP */EBHP/*[EBHP]¹⁸ (c. 850-550 BCE)</p> | <p>TH /TH/*[TH] (c. 850 CE)</p> | <p>MT pronounced as IH [IH] (present)</p> | <p>Phonemic distinction based on and comments</p> |
|---|---|---|---|---|
| <p>/yaqum/</p> | <p>/way'yaqum/ [wey'yɛqum] or [wey'yɛqo ʔh “he stood” (qal preterite)</p> | <p>יָקַם /way'yâqom/ [wey'yɔ:qom]</p> | <p>[vaya'kam]</p> | <p>waC-, in this instance way, prefix. TH - vowel quality and stress for wayyâqâm IH vaya'kam frequent but considered incorrect.</p> |
| | <p>/hašmid/ [hef'mɪd] or [hef'mɛd] (hiphil imp.) “destroy!” /haš'mīd/ [hef'mi:d] (hiphil inf. constr.) “destroying”</p> | <p>הַשְׂמִיד /haš'mɛd/ [hef'mɛ:ð] הַשְׂמִיד /haš'mid/ [hef'mi:ð]</p> | <p>[haf'mɛd] [haf'mid]</p> | <p>EBHP – vowel length and stress. TH and IH - vowel quality</p> |
| <p>/ʔabbahu/ > /ʔab'bahu/ /ʔa'bāhu/ > /ʔa'bōhu/</p> | <p>/ʔab'ba:h/ [ʔɛb'ba:x] “butcher” /ʔa'bōh/ [ʔɛ'bo:x] (qal inf. abs.) “slaughtering”</p> | <p>בָּחַט /ʔab'bâh/ [ʔɛb'bo:h] בָּחַט /ʔa'bo:ah/ [ʔɔ:'vo:ɛh]</p> | <p>[ta'bax] [ta'voax]</p> | <p>PH – vowel length and quality and consonant length. EBHP –vowel quality and consonant length TH - vowel quality, stress, number of syllables and residually consonant length IH - vowel quality, stress, number of syllables and consonant quality</p> |
| <p>/hātamu/ > /hōtamu/ > /hō'tamu/ /ha'tāmu/ > /ha'tōmu/</p> | <p>/hō'ta:m/ [xo:'ta:m] “seal” /ha'tōm/ [xe'to:m] (qal inf. abs.) “sealing”</p> | <p>הָתַם /hō'tām/ [ħo:'θɔ:m] הָתַם /ħa'tom/ [ħɔ:'θo:m]</p> | <p>[xo'tam] [xa'tom]</p> | <p>PH – vowel length EBHP - vowel quality and length TH and IH - vowel quality</p> |
| <p>/ša'lāmu/ > /ša'lōmu/ /šalamū/ > /ša'lamū/</p> | <p>/ša'lōm/ [ʃe'lo:m] “peace” /ša'lāmū/ [ʃe'lɛɣmɪ] “they became complete etc.”</p> | <p>שָׁלוֹם /šā'lom/ [ʃɔ:'lo:m] שָׁלוֹם /šāl'mu/ [ʃɔ:lɛ'mu:]</p> | <p>[ʃa'lom] [ʃal'mu]</p> | <p>PH – vowel quality and length EBHP –vowel length and vowel quality; suffix ū TH - vowel quality; suffix u IH - vowel quality; suffix u</p> |

| <p>*PH (c. 1200 BCE)</p> | <p>EBHP */EBHP/*[EBHP]¹⁸ (c. 850-550 BCE)</p> | <p>TH /TH/*[TH] (c. 850 CE)</p> | <p>MT pronounced as IH [IH] (present)</p> | <p>Phonemic distinction based on and comments</p> |
|---|---|---|---|--|
| <p>/ma'rādu/ > /ma'rōdu/ √RWD /ma'rādu/> /ma'rōdu/ √rwd</p> | <p>*/ma'rōd/ [me'ro:d] "homelessness" /ma'rōd/ [me'ro:d] (qal inf. abs.) "rebellng"</p> | <p>מְרוֹד /mā'rod/ [mɔ:'ro:ð] /mā'rod/ [mɔ:'ro:ð]</p> | <p>[ma'ʁɔd] [ma'ʁɔd]</p> | <p>Note the regular noun formation /ma'qālu/ from √QWL. מקום √QWM] "place"; מלון √LWN "inn" All periods context only</p> |
| <p>/'ḏakarū/ → /za'karu/ /'ḏakarū/ → /za'karū/</p> | <p>/za'ka:r/ [ze'ka:r] "male" /za'ka:rū/ [ze'ke:ɾu] (qal SC 3ms.) "they remembered"</p> | <p>זָכָר /zâ'kār/ [zɔ:'xɔ:r] זָכְרוּ /zâ'kru/ [zɔ:'xɔ:ru:]</p> | <p>[za'xaxɾ] [zax'xɾ]</p> | <p>PH – vowel length (u - ū) EBHP – suffix ū TH - vowel quality and suffix u IH - vowel distribution and quality and suffix u</p> |
| | <p>/ka'bid/ [ke'bid] "he was heavy" (qal. 3ms. SC) /ka'be:d/ [ke'be:d] "heavy" (adj. = ms. part. qal.)</p> | <p>כָּבֵד /kâ'bed/ [kɔ:'ve:ð] כָּבֵד /kâ'bed/ [kɔ:'ve:ð]</p> | <p>[ka'ved] [ka'ved]</p> | <p>EBHP – vowel and consonant length TH - vowel quality and residually consonant length IH - consonant quality and context</p> |
| | <p>/kab'bid/ [kab'bid] "honour!" (piel. m. s. imp.)</p> | <p>כִּבְד /kab'bed/ [keb'be:ð]</p> | <p>[ka'bed]</p> | |
| | <p>/'hagg/ ['hegg] "festival" [HGG]</p> | <p>חָג /'hag/ ['he:ɣ] OR חֲגָ /'hâg/ ['hɔ:ɣ]</p> | <p>['xag]</p> | <p>EBHP – vowel length and consonant length TH - vowel quality (where "festival" vocalized ḥag) or none (where "festival" vocalized ḥâg)</p> |
| | <p>/'hâg/ ['hagg] "he described a circle [HWG]</p> | <p>חָג /'hâg/ ['hɔ:ɣ]</p> | <p>['xag]</p> | <p>IH - context</p> |
| <p>/'āsiru/ > /'ōsiru/ > /'ōsiru/ /'a'sīru/</p> | <p>/'ō'se:r/ ['o:'se:r] (qal a.p.) "one who ties" /'a'sīr/ ['e'si:r] "prisoner"</p> | <p>אָסַר /'o'ser/ ['o:'se:r] אָסִיר /'â'sir/ ['ɔ:'si:r]</p> | <p>[o'sɛɾɾ] [a'siɾɾ]</p> | <p>PH – vowel length EBHP –vowel length and vowel quality TH and IH - vowel quality</p> |
| <p>/'qabbiru/ > /qab'bir/</p> | <p>/qab'be:r/ [qeb'be:r] (piel/inf. constr.)</p> | <p>קָבַר /qab'ber/</p> | <p>[ka'bɛɾɾ]</p> | <p>PH –vowel length, vowel distribution and consonant</p> |

| <p>*PH (c. 1200 BCE)</p> | <p>EBHP */EBHP/*[EBHP]¹⁸ (c. 850-550 BCE)</p> | <p>TH /TH/*[TH] (c. 850 CE)</p> | <p>MT pronounced as IH [IH] (present)</p> | <p>Phonemic distinction based on and comments</p> |
|---|---|---|---|--|
| <p>/qābiru/ > /qō'biru/ /'qabru/</p> | <p>“burying” (more than one body) /qō'be:r/ [qo:'be:r] (<i>qa</i>/ms. act. part.) “burier” /'qabr/ [qabr] or [qəbər] “tomb”</p> | <p>[qab'be:r] קוֹבֵר /qo'bɛr/ [qo:'vɛ:r] קָבֵר /'qɛbɛr/ ['qɛ:vɛr]</p> | <p>[ko'vɛɣɣ] ['kɛvɛɣ]</p> | <p>length EBHP – vowel length, vowel quality, vowel distribution and consonant length TH - vowel quality, vowel distribution, stress and residually consonant length IH - vowel and consonant quality.</p> |
| <p>/'sūgaru/ > /sū'garu/ /'sagūru/ > /sa'gūru/</p> | <p>/sū'gar/ [su:'ger] “cage” /sa'gūr/ [se'gu:r] (<i>qa</i>/<u>p.p.</u>) “closed”</p> | <p>סוּגָר /su'gɑr/ [su:'ɣɑ:r] סוּגוּר /sɑ'gʊr/ [sɔ:'ɣu:r]</p> | <p>[su'gɑɣɣ] [sa'gʊɣɣ]</p> | <p>PH – vowel quality and length EBHP - vowel quality and length TH and IH - vowel quality</p> |
| <p>/'sūgaru/ > /sū'garu/ /'suggara/ > /sug'gara/</p> | <p>/sū'gar/ [su:'ger] “cage” /sug'gar/ [sʊg'ger] (<i>pua</i>/3rd ms. <i>SC</i>) “it was closed”</p> | <p>סוּגָר /su'gɑr/ [su:'ɣɑ:r] סוּגָר /sʊg'gɑr/ [sʊg'gɛ:r]</p> | <p>[su'gɑɣɣ] [su'gɑɣɣ]</p> | <p>PH – vowel length, consonant length and vowel quality of suffix. EBHP –vowel length and consonant length TH - Consonant length IH - context</p> |
| <p>/ga'dālu/ > /ga'dōlu/ /'gadulu/ > /ga'dulu/</p> | <p>/ga'dōl/ [ge'do:l] (<i>qa</i>/inf. abs..) “becoming big” /ga'do:l/ [ge'do:l] (adj.) “big”</p> | <p>גָדוּל /gɑ'dol/ [gɔ:'ðo:l]²⁰ גָדוּל /gɑ'dol/ [gɔ:'ðo:l]</p> | <p>[ga'dol] [ga'dol]</p> | <p>PH – vowel quality and length EBHP – vowel quality and length TH and IH - none</p> |
| <p>/'gudlu/ /'guddalū/ /gud'dalū/</p> | <p>/'gudl/ [gudl] or [gudəl] or [gʊɣɔdəl] “greatness” /gud'dalū/ [gud'dɛɣlɔ] “they were magnified”</p> | <p>גָדַל /'gɔdɛl/ ['go:ðɛl] גָדְלוּ /guddə'lu/ [guddə'lu:]</p> | <p>['gɔdɛl] [gud'lu]</p> | <p>PH – vowel length and pattern and consonant length EBHP – vowel length and pattern and consonant length TH - vowel quality and residually consonant length IH - vowel quality and pattern</p> |
| <p>/'sipru/ /'sapparū/ →</p> | <p>/'sipr/ [sɪpr] or [sɪpɛr] “book” /sip'pɪrū/ [sɪp'pɪ ɪrɔ]</p> | <p>סִפְרָא /'sɛpɛr/ ['sɛ:fɛr] סִפְרָא /sɪp'pɪr/</p> | <p>['sɛfɛr] [sɪp'ɣɪɪ]</p> | <p>PH – vowel quality, length and pattern and consonant length EBHP – vowel quality, length and pattern, stress and</p> |

| <p>*PH (c. 1200 BCE)</p> | <p>EBHP */EBHP/*[EBHP]¹⁸ (c. 850-550 BCE)</p> | <p>TH <u>/TH/*[TH]</u> (c. 850 CE)</p> | <p>MT pronounced as IH [IH] (present)</p> | <p>Phonemic distinction based on and comments</p> |
|--|---|--|---|--|
| <p>/sip'pirū/ /'supurū/ > /su'purū/</p> | <p>“they recounted” (<i>piel</i> 3rd pl. <i>SC</i>) /su'purū/ [sʊ'pʊʁu:] > /s'purū/ [sū'puru:] “count” (<i>qa</i>/ms. imp.)</p> | <p>/sipp'ru/ [sippə'ru:] ספּר /sip'ru/ [sif'ru:]</p> | <p>[sif'פּוּר]</p> | <p>consonant length TH - vowel quality and pattern; stress; residually consonant length IH - vowel quality and pattern; stress; consonant quality.</p> |
| <p>/'raḥabu/ > /ra'ḥabu/ /ra'ḥābu/ > /ra'ḥōbu/</p> | <p>/ra'ḥa:b/ [re'ħa:b] “wide” /ra'ḥōb/ [re'ħo:b] (<i>qa</i>/<u>inf. abs.</u>) “spreading”</p> | <p>רָחַב /rā'ḥāb/ [rɔ:'ħɔ:v] רָחֹב /rā'ḥōb/ [rɔ:'ħo:v]</p> | <p>[ʔ ḫav] [ʔ ḫov]</p> | <p>PH – vowel length EBHP - vowel quality and length TH and IH - vowel quality</p> |
| <p>/'qaširu/ > /qa'širu/ /qa'šīru/</p> | <p>/qa'še:r/ [qə'se:r] “short” /qa'šīr/ [qə'ʃi:r] “harvest”</p> | <p>קָצַר /qā'seṛ/ [qɔ:'se:r] קָצִיר /qā'šir/ [qɔ:'ʃi:r]</p> | <p>[ka'tsɛʔ] [ka'tsiʔ]</p> | <p>PH – vowel length EBHP - vowel length TH and IH - vowel quality</p> |
| <p>/'šabū/ or /'fābū/ √ΣWB /'šabayū/ > /ša'bayū/ √ΣBY</p> | <p>/'šābū/ [ʃa:bu:] “they returned” /ša'bū/ [ʃe'bu:] “they took prisoner”</p> | <p>שָׁבוּ /'šābu/ [ʃɔ:vɔ:] שָׁבוּ /šā'bu/ [ʃɔ:'vu:]</p> | <p>[ʃavu] [ʃa'vu]</p> | <p>EBHP - vowel length and stress TH and IH – stress</p> |
| <p>/'šab/ or /'šāba/ √ΣWB /'šabat/ or /'šābat/ /'šabaya/ > /ša'baya/ √šby</p> | <p>/'šāb/ [ʃa:b] “he returned” /'šābâ/ [ʃa:be:] “she returned” /ša'bâ/ [ʃe'be:] “he took prisoner”</p> | <p>שָׁב /'šāb/ [ʃɔ:v] שָׁבָה /'šābâ/ [ʃɔ:vɔ:] שָׁבָה /šā'bâ/ [ʃɔ:'vɔ:]</p> | <p>[ʃav] [ʃava] [ʃa'va]</p> | <p>EBHP - vowel length, stress and suffix ā TH and IH – stress and suffix</p> |
| <p>/'šaba/ √šwb /'šabba/ √šbb</p> | <p>/'šāb/ [ʃa:b] “he returned” /'šabb/ [ʃebb] “he cut down”</p> | <p>שָׁב /'šāb/ [ʃɔ:v] שָׁב /'šab/ [ʃe:v]</p> | <p>[ʃav] [ʃav]</p> | <p>EBHP - vowel and consonant length TH - vowel quality IH - none</p> |

c. Consonantal Phonemes

Table 11

Consonantal Phonemes in EBHP, TH and Israeli Pronunciation of BH²¹

| Hebrew Letter | EBHP */EBHP/ *[EBHP] (c. 850-550 BCE) | TH /TH/* *[TH] (c. 850 CE) | MT pronounced as <u>ih</u> /ih/ [ih] (present) |
|------------------|---|--|--|
| א | /ʔ/ [ʔ] ²² | /ʔ/ [ʔ, -] <i>Silent when word or syllable final.</i> | /ʔ/ [∅] i.e. silent |
| ב | /b/ [b] bilabial, stop, voiced | /b/ <i>2 allophones in complementary distribution</i> ב = [b] and ב = <u>b</u> [v] | /b/ ²³ <i>2 allophones in complementary distribution</i> ב = [b] and ב = <u>b</u> [v] |
| ב | | | |
| ג | /g/ [g] | /g/ Two <u>allophones</u> in <u>complementary distribution</u> ג = [g] and ג = <u>g</u> , <u>g</u> [ɣ] or nearly identical [ɣ] ²⁴ (I will use [ɣ] in [TH] transcriptions) | /g/ [g] |
| ג | | | |
| ד | /d/ [d] | /d/ <i>2 allophones in complementary distribution</i> ד = [d] and ד = <u>d</u> [ð] | /d/ [d] |
| ד | | | |
| ה | /h/ [h] | /h/ [h] | /h/ Rarely [h] frequently silent [∅] or glottal stop [ʔ] |
| ה | consonantal [h] at end of word | consonantal [h] at end of word | /h/ [∅] |
| ו | /w/ [w] | /w/ [w] (possibly [v] ²⁵) <i>(I will use [w] in [TH] transcriptions)</i> | /w/ [v] |

Consonantal Phonemes in EBHP, TH and Israeli Pronunciation of BH²¹

| <u>Hebrew Letter</u> | <u>EBHP</u> */EBHP/ *[EBHP] (c. 850-550 BCE) | <u>TH</u> /TH/* *[TH] (c. 850 CE) | MT pronounced as <u>IH</u> /IH/ [IH] (present) |
|----------------------|---|---|--|
| ז | /z/ [z] | /z/ [z] | /z/ [z] |
| ח | a polyphonic letter in BH representing /h/ [h] or /h/ [x] ²⁶ depending on its PS origin. | /h/ [h] | /h/ [x] |
| ט | /t/ [t] ²⁷ (approximate pronunciation) | /t/ [t] ²⁵ <i>(nb. I use [t] in the case of the root טק used conventionally for grammatical examples)</i> | /t/ [t] <i>(identical in pronunciation to ט)</i> |
| י | /y/ [j] <i>(I will use [y] in [BH] transcriptions)</i> | /y/ [j] <i>(I will use [y] in [TH] transcriptions)</i> | /y/ [j] ²⁸ <i>(I will use [y] in [IH] transcriptions)</i> |
| כ | /k/ [k] | /k/ | /k/ |
| ך | | 2 allophones in complementary distribution כ = k [k] or [kʰ] and כּ = k [x] | 2 allophones in complementary distribution כ = k [k] or [kʰ] and כּ = k [x] |
| ל | /l/ [l] | /l/ [l] | /l/ [l] |
| מ | /m/ [m] | /m/ [m] | /m/ [m] |
| נ | /n/ [n] | /n/ [n] | /n/ [n] |
| ס | /s/ [s] | /s/ [s] | /s/ [s] |
| ע | a polyphonic letter in BH representing /c/ [ʃ] ²⁹ or /g/ [ɣ] depending on its PS origin. | /c/ [ʃ] ³⁰ | /c/ [∅] |
| פ | /p/ [p] | /p/ | /p/ |

Consonantal Phonemes in EBHP, TH and Israeli Pronunciation of BH²¹

| <u>Hebrew Letter</u> | <u>EBHP</u> */EBHP/ *[EBHP] (c. 850-550 BCE) | <u>TH</u> /TH/* *[TH] (c. 850 CE) | MT pronounced as <u>IH</u> /IH/ [IH] (present) |
|----------------------|--|--|---|
| פ | | <i>complementary distribution</i> פ = p [p] and פ = p̥ [f] | <i>complementary distribution</i> פ = p [p] and פ = p̥ [f] |
| צ | <u>/s/ [s]</u> ³¹ (<i>approximate pronunciation</i>). Less likely [ʃ] | <u>/s/ [s]</u> | /ʃ/ [ʃ] |
| ק | <u>/q/ [k]</u> ³² (<i>approximate pronunciation</i>) | <u>/q/ [k]</u> | /q/ [k] |
| ך | /r/ [r] ³⁴ | /r/ [r] | /r/ [ɻ] ³⁵ (this is very close to ġ [ɣ]) |
| ש | /ʃ/ [ʃ] ³⁶ | /ʃ/ [s] | /ʃ/ [s] |
| ש | /ʃ/ [ʃ] ³⁷ | /ʃ/ [ʃ] | /ʃ/ [ʃ] |
| ת | /t/ [t] | /t/ <i>2 allophones in complementary distribution</i> ת = [t] and ת = t̥ [θ] | /t/ [t] |
| ת | | | |
| 22 | 26 | 24 | 24 |

Box 13

Consonantal Polyphony in Biblical Hebrew

Sibilants

BH (Biblical Hebrew) had at its inception three sibilants ψ /š/, ψ /ś/ and σ /s/. We do not know for sure how the second phoneme was originally pronounced (today it is pronounced like σ = s). A few generations ago, scholars believed that /ś/ was only a kind of offshoot of the /š/ which had developed within Hebrew (and Aramaic). This view has been discarded for three reasons:

- 1) Hebrew /ś/ is always paralleled in Arabic by one consonant, while the equivalent of Hebrew /š/, is another consonant ...
- 2) South Arabic, both that of the inscriptions and of the modern dialects has indeed preserved three different phonemes exactly paralleling the three Hebrew phonemes dealt with here.
- 3) Hebrew /š/ and /ś/ are never interchanged except in foreign loans שריון - שריון 'armor'. Therefore there is no reason to doubt that in Hebrew as in South Arabic there existed three different phonemes /š, ś, s/. represented by ψ, ψ, σ The alphabet was apparently invented by a people whose language possessed only two of these three phonemes. When it was adopted by other peoples such as the Jews and Arameans, whose language had all three phonemes, they simply employed one sign for two phonemes instead of adding a new sign. Apparently they chose the ψ sign because the pronunciation of the /ś/ was close to that of the /š/...

But the pronunciation of the /ś/ did not remain stable even during Biblical times. In the course of several centuries it came close to that of the /s/ and finally merged with it. We know when this process came to an end because especially in the later books of the Bible there appear several roots containing an original /ś/ spelled with a /s/ e.g., ס' כררים 'they hire' (Ezra 4. 5: = שכררים). In [MH](#) most of the roots containing an original /ś/ are already spelled with *samekh*....

Gutturals

The pharyngals /e, h/: Each of these pharyngals represents a merger of two PS ([Proto-Semitic language](#)) phonemes. The phonemes that disappeared are /x/ (pronounced as in Bach, Scottish *loch* or Yiddish *ich*) and /g/ (pronounced like a [fricative](#) /g/). When did these [phonemes](#) disappear? At first glance it would seem that they disappeared before Hebrew was committed to writing, or else we should have expected to find in the Hebrew alphabet a special grapheme for their notation.

But in the light of our discussion of the notation of /ś/ and /š/ by the same grapheme ... this conclusion would be hasty because there is reason to believe that these phonemes did in fact exist during Biblical times, and that, as in the case of /ś/, it was only for lack of a grapheme of their own that the graphemes *n, y* respectively were used for them. In other words, we can assume that *n* was used during Biblical times to indicate both the [pharyngal](#) /h/ and the [velar](#) /x/ while the sign *y* did service for both the

Consonantal Polyphony in Biblical Hebrew

pharyngeal /ç/ and the velar /ǰ/. It should be mentioned that [Arabic](#), which possesses all four of these sounds does indeed use the graphemes $\text{ç} = \text{ħ}$; $\text{ǰ} = \text{ḥ}$; $\text{ε} = \text{ع}$; $\text{ǧ} = \text{ج}$ for the two other sounds and distinguishes between the two pairs by means of a diacritical point (compare Hebrew $\text{ט}, \text{טו}$).

ח (/ħ/) and ט (/ç/) in Greek Transcriptions. §25. ... This assumption is borne out by the transcriptions of the [Septuagint](#) from the third-second centuries B.C.E.... Here we find that while some *ħets* do not seem to appear in certain names, e.g., *Isaac* = קטצ , others are transliterated by the Greek χ (*chi*, henceforth written *ch*) the pronunciation of which corresponds to the above mentioned German, Yiddish and Scottish /x/, e.g., *Rachel* = חל , *Achiezer* = אחיעזר . The same holds true for the *çayin*. While some *çayins* do not appear in the Greek transcription, e.g., in the name *Iakob* = בק others do, e.g., *Gaza* = חצ , (the Greeks, for lack of an adequate letter, use the Greek letter $\Gamma = /g/$ to denote the sound). Although more detailed research is required to clarify the picture, it can safely be stated on the basis of comparison with Arabic that the ח is employed mainly where the parallel Arabic root has a /x/, while in words in which Hebrew *ħet* parallels Arabic /ħ/. Greek, for lack of an adequate grapheme, has no consonantal notation. The same applies to the *ghayin* in as in the case of the name of the city of חצ which is transliterated in the Septuagint with a Γ - *Gaza* since the *çayin* in this word, exactly as in its modern Arabic form, was pronounced as a velar /ǰ/. As is well known, the Arabic form, transliterated by Europeans as *Gaza*, is in use outside of Israel.

These instances go a long way towards proving that during the third and second centuries each of the two signs $\text{ח}, \text{ט}$ was pronounced in either of two ways in different words, and each pronunciation represented the [PS](#) pronunciation of the two different [phonemes](#) that survived in Arabic until today.

The Merger of /x/ with /ħ/ and /ǰ/ with /ç/.... However, during the course of the next few centuries, one of the pronunciations of the two signs disappeared. This is proved by the fact that the transcriptions of the [Hexapla](#) from the second to third centuries C.E. never employ the letter *chi* for the *ħet* and *gamma* for the *çayin* (cf. §§245, 247). The Masoretes who vocalized the Hebrew text during the second half of the first millennium C.F. no longer distinguished between two kinds of *ħet* and two kinds of *çayin*. This is not surprising since their vocalization of the Hebrew text aimed at transmitting the last stage of spoken Hebrew which, as we said, already lacked the above mentioned distinctions.

Quoted from [Kutscher 1982](#) pp. 13, 14, 17, 18. For more information see [Blau 1982](#), [Steiner 2006](#).

See - A Lexicon of Unmarked Consonantal Phonemes in Biblical Hebrew:

1. [/ħ/ \[x\]](#)
2. [/ǰ/ \[ç\]](#)

Table 12³⁸

Consonantal Minimal Pairs in Biblical Hebrew No Longer Valid in Later Hebrew

| Consonantal Phonemes | <u>EBHP</u> <u>/EBHP/</u> (c. 850-550 BCE) | <u>TH</u> <u>/TH/</u> * <u>[TH]</u> (c. 850 CE) | <u>MT</u> pronounced as <u>IH</u> (<u>IH</u>) (present) |
|--|--|--|---|
| <u>/t/</u> : <u>/t̄/</u> | נתעו (* <i>/nit'ta^cū/</i> "they have broken out" Jb. 4:10) : נטעו (* <i>/nit'ta^cū/</i> "they were planted" Is. 40:24) | נתעו <i>/nit'ta^cu/</i> * <i>[nit'to:^cu:]</i> : נטעו <i>/nit'ta^cu/</i> * <i>[nit'to:^cu:]</i> | Both pronounced [ni'tu] |
| | שׂתו (* <i>/šātū/</i> "they put") : שׂטו (* <i>/šātū/</i> "they went back and forth") | שׂתו <i>/šātū/</i> * <i>[ʃo:^ctu:]</i> : שׂטו <i>/šātū/</i> * <i>[ʃo:^ctu:]</i> | Both pronounced [ʃatu] |
| <u>/h/</u> : <u>/h̄/</u> | חפר (qal <i>ḥpr</i> "to be shy") : חרף (qal <i>ḥpr</i> "to dig") | Both pronounced <i>ḥpr</i> | Both pronounced <i>ḥpr</i> |
| | חרף (qal <i>ḥrp</i> "to spend the winter") : חרף (qal <i>ḥrp</i> "to annoy, taunt") | Both pronounced <i>ḥrp</i> | Both pronounced <i>ḥrf</i> |
| | חרם (<i>/ḥirm/</i> = "a net") : חרם (<i>/ḥirm/</i> = "devoted thing") | Both pronounced <i>/ḥeṛem/</i> * <i>[ḥe:^cem]</i> | Both pronounced [xɛɛɛm] |
| | פתח (<i>/pit'tih/</i> "he engraved") : פתח (<i>/pit'tih/</i> "he opened") | Both pronounced פתח <i>/pit'tah/</i> * <i>[pit'te:h]</i> | Both pronounced [pi'tɛax] |
| | חרם (hiphil √ḥrm "to divide, split") : חרם (hiphil √ḥrm "to place under the ban") | Merged as √ḥrm | Both pronounced [xrm] |
| <u>/h/</u> : <u>/k/</u> | שחר (qal <i>*ša'ḥar/</i> "it became black") : שכר (qal <i>*ša'kar/</i> "he became drunk") | שחר <i>/šā'ḥar/</i> : שכר <i>/šā'kar/</i> | Both pronounced [ʃa'xax] |
| ^c <u>/s/</u> : <u>ḡ/</u> : <u>ḡ/</u> | עשה (qal <i>šh</i> "to do, make") : עשה (qal <i>ḡsh</i> "to protect, cover, turn toward") | Both pronounced ^c <i>sh</i> | Both pronounced 'sh |
| ^c <u>/n/</u> : <u>ḡ/</u> | אצר (<i>*'a'sar/</i> qal "he gathered up") : עצר (<i>*'a'sar/</i> or <i>ḡa'sar/</i> qal "he restrained") | <i>/'ā'sar/</i> : <i>ḡā'sar/</i> | Both pronounced [atz'aɛ] |
| ^c <u>/n/</u> : <u>/s/</u> : <u>ḡ/</u> : <u>ḡ/</u> : <u>/h/</u> | אלם (<i>'lm</i> "to be dumb") : עלם (<i>ḡlm</i> "to be concealed") : עלם (<i>ḡlm</i> "to become dark") : הלם (<i>hlm</i> "to strike") : | <i>'lm</i> : ^c <i>lm</i> : <i>hlm</i> | all would be pronounced with the first historic consonant (<i>l', c, h/</i>) either silent or as [ʔ]. |

| | | | |
|-------------|---|---|---|
| /k/:/q/ | יקרה (*/yiqqa'rê/ <i>niphal</i> "he will encounter") : יכרה (/yikka'rê/ <i>niphal</i> "it will be dug") | יקרה /yiqqâ'rê/ [yiqqɑ:'rɛ:] : יכרה /yikkâ'rê/ [yikkɑ:'rɛ:] | Both pronounced [ika'ʔɛ] |
| | תכהינה (*/tik'hêna(:)/ "they (f. p.) grow dim") : תקהינה (*/tiq'hêna(:)/ "they (f. p.) were/became blunt dim") | תכהינה /tik'hɛnâ/ : תקהינה /tiq'hɛnâ/ | [tix'ɛna] : [tik'ɛna] |
| /s/:/š/:/ʃ/ | שכר (*/ša'kar/ "he hired") : שכר (*/ša'kar/ "he became drunk") : סכר (*/sa'kar/ "he closed") | שְׁכַר (/šâ'kar/ "he became drunk") : סכר "he closed" and שְׁכַר "he hired" both pronounced ([sɑ:'ɛ:r]) | שְׁכַר ([ʃa'xɑʔ] "he became drunk") : סכר ([sa'xɑʔ] "he closed") and שְׁכַר ([sa'xɑʔ] "he hired") |

Table 13

Voiced, Voiceless and Emphatic Consonants in */EBHP/

| Place of Articulation | Voiced ³⁹ | Voiceless ⁴⁰ | <u>Emphatic</u> |
|----------------------------------|--|--|---|
| <u>Labials</u> | ב = /b/ [b] (בעל */ba'ʕal/ "he married") | פ = /p/ [p] (פעל) */pa'ʕal/ "he made") | non-existent |
| <u>Dentals</u> | ד = /d/ [d] (דלל "to be thin, poor") | ת = /t/ [t] (תלם "furrow") (תלל "to mock") | ט = /t̥/ [t̥] (טלם a place name and possibly also a noun meaning "black" or the like) (טלל "to resonate") |
| <u>Sibilants</u> | ז = /z/ [z] (זרז "to be isolated") | ס = /s/ [s] (פרס "to split, break bread") ש = /š/ [ʃ] (פרש "to spread out, stretch over") ש = /ʃ/ = sh [ʃ] (פרש "to give a clear decision") | צ = /s̥/ [s̥] less likely [ʦ] [ʦ̥] (פרץ "to break through") |
| <u>Palatals- velars</u> | ג = /g/ [g] (גבל) */ga'bal/ "he marked a boundary") | כ = /k/ [k] (כבל "binding") | ק = /q/ [k̠] (קבל "receiving") (פרק "to tear away") |
| <u>Velar fricatives</u> | ג' = /ɣ/ [ɣ] (גדר <i>gdr</i> place name "pool") (עלם "to be dark") (ג'מ <i>g'm</i> "young man") | ח = /x/ [x] (also transliterated as x, kh or k) (חדר <i>ħdr</i> "to dwell") (ח'רם <i>ħirm</i> "a net") | non-existent |
| <u>Pharyngals</u> | ע = /ʕ/ [ʕ] (עלם "duration") | ח' = /ħ/ [ħ] (ח'רם) */ħirm/ "devoted thing") (ח'לם) */ħa'lam/ "he dreamed") | non-existent |
| <u>Laryngals or glottals</u> | א' = /ʔ/ [ʔ] (א'לם) */'ilm/ "silence") | ה' = /h/ [h] (ה'לם) */ha'lam/ "he struck") | non-existent |

Table 14

Proto-Semitic Phonemes (Consonants) Exhibiting Sound Shifts in Hebrew and their Equivalents in Aramaic and Classical Arabic

| <u>PS</u> */PS/ (c. 3000 BCE) | Reconstructed Classical Arabic | Reconstructed Aramaic | <u>EBHP</u> */EBHP/ * <u>[EBHP]</u> ⁴¹ (c. 850-550 BCE) | <u>IH</u> <u>/IH/ [IH]</u> (present) | Hebrew Letter |
|--|-----------------------------------|---|---|---|------------------|
| /ʔ/ [ʔ] (glottal stop) | /ʔ/ | /ʔ/ | /ʔ/ [ʔ] | silent | א |
| /h/ | /h/ | /h/ | /h/ [h] | /h/ Rarely [h] frequently silent or glottal stop [ʔ] | ה |
| /w/ | /w/ | /w/ | /w/ [w] | /w/ [v] | ו |
| <u>/ð/ 'th' sound in</u> <u>"then."</u> | /ð/ | /d/ | /z/ [z] ⁴² | /z/ | ז |
| /ħ/ [ħ] | /ħ/ [ħ] | /ħ/ [ħ] | /ħ/ [ħ] | /ħ/ [x] | ח |
| /ħ/ [x] | ħ [x] | /x/ | ħ [x] | /ħ/ [x] | ח |
| /t/ [t] | /t/ | /t/ [t] | <u>/t/ [t]</u> ⁴³ | /t/ | ט |
| /c/ [ʕ] (pharyngeal voiced stop) | c /ʕ/ | c /ʕ/ Silent in some later dialects | /ʔ/ [ʔ] | silent | ע |
| /g/ [g] | g /g/ | g /g/ Silent in some later dialects | /g/ [g] | silent | ג |
| /p/ | /f/ | /p/ | /p/ [p] | /p/ | פ |
| /*t/ | z [ð ⁴⁴] | /t/ | [s] less likely [ʃ] [ʃ ⁴⁵] | /ʃ/ / | צ |

| <u>PS</u> * <u>PS</u> / (c. 3000 BCE) | Reconstructed Classical Arabic | Reconstructed Aramaic | <u>EBHP</u> * <u>EBHP</u> / * <u>EBHP</u> ⁴¹ (c. 850-550 BCE) | <u>IH</u> <u>/IH/ [IH]</u> (present) | Hebrew Letter |
|---|-----------------------------------|--------------------------|---|--|------------------|
| /š/ [s̥] | /š/ [s̥] | /š/ [s̥] | /š/ [s̥] less likely [ʃ] [ʃ̥] ⁴³ | [ʃ̥] | צ |
| /š̥/ | ð *[ʃ̥]→[d̥] | /c/ [ʃ̥] | | /ʃ/ | צ |
| /k/ | /q/ | /q/ | /q/ [k̥] | /k/ | ק |
| <u>/θ/ ("th" sound in thing)</u> | θ /θ/ | /t/ | /š/ [θ] ⁴⁴ | /š/ | ש |
| /ś/ | š=sh /ʃ/ | /s/ | /ś/ [ʃ] | /s/ | ש |

See מן מאיר לה מאת מאיר מדן ed. Uzi Ornan Hebrew University 1977

* for Proto-Semitic phonemes see p 112 ff of [Lipinski 1997](#)

** this may be a recreation of an old pronunciation see sect.14.7 in [Lipinski 1997](#)

N.b. Sounds lost in earlier periods of the development of Hebrew sometimes reappear in later periods. Thus:

- In the Late Bronze or early Iron Age [θ] > [ʃ], thus merging with š=sh [ʃ]. This sound [θ] re-emerged with the [spirantization of the bgdkpt](#) consonants, which resulted in their dual realization as plosives or fricatives with [θ] being the fricative allophone of ת /t/;
- The case is similar with [ð] > [z] which thus merged with [z]. This sound re-emerged with the Spirantization of the *bgdkpt* consonants with [ð] being the fricative allophone of ד /d/;
- Slightly different are the cases of /ǵ/[ɣ] and /ħ/[x]. Some time after 300 BCE /ǵ/[ɣ] > /c/ [ʃ̥] and /ħ/[x] > /h/ [ħ] thus merging with the original /c/ and /ħ/ respectively. Prior to this merger these sounds had, while still remaining as historical phonemes in all contexts, also appeared as the fricative allophones of ג /g/ and כ /k/ respectively. They remained as the fricative allophones of ג and כ even after they disappeared in other contexts. In Israeli Hebrew /r/ [r̥] is closer to [ǵ]/[ɣ] than it is to the ancient /r/ [r].

Table 15

Biblical Hebrew Phonemes (Consonants) of Multiple Origin

their Equivalents in Proto-Semitic, Classical Arabic, Aramaic and Ugaritic

| Hebrew Letter | <u>EBHP</u> */EBHP/ */EBHP/ (c. 850-550 BCE) | Hebrew Example | <u>PS</u> */PS/ (c. 3000 BCE) | Reconstructed Classical Arabic | Reconstructed Aramaic | Reconstructed Ugaritic |
|---------------|---|----------------|-------------------------------------|--------------------------------|-----------------------|------------------------|
| ז | /z/ [z] | זהב | /ð/ | /d/ [ð] ذ | d > d | d > d |
| ז | | זון | /z/ | /z/ ز | /z/ | /z/ |
| ח | /ħ/ [x] | חרד | /ħ/ | /ħ/ [x] ح | /ħ/ [x] | /ħ/ [x] |
| ח | /ħ/ [ħ] | חרב | /ħ/ | /ħ/ [ħ] ح | /ħ/ [ħ] | /ħ/ [ħ] |
| ע | /ʕ/ [ʕ] | צעד | /ʕ/ | /ʕ/ ع | /ʕ/ | /ʕ/ |
| ע | /ǧ/ [ǧ] | עזה | /ǧ/ | /ǧ/ غ | ǧ > c | /ǧ/ |
| צ | /s/ [sʰ] | קיץ | /q/ | z [ðʰ] ظ | tʰ > tʰ | tʰ > ǧ |
| צ | | צער | /s/ | š [sʰ] ص | š | š |
| צ | | ארץ | /ʕs/ | /d/ [ʕʰ]→[dʰ] ض | /ʕ/ | tʰ→ǧ |

Nb.

1. The unpointed Hebrew of biblical times 3 letters (ח, ע, and ש) each stood for two phonemes. This lack of sufficient letters probably reflects the sound system of the

dialect of the Phoenician scribes from whom the Judeans borrowed the writing system. See [Blau 1982](#).

2. The final ה (not ה) in tri-literal roots were originally final ה or ה hence another opportunity for the development of homonyms.
3. The initial ה in tri-literal roots were originally either ה or ה.
4. For a complete list of equivalences see [Blau 1976/93](#) p. 6

See also [Consonants that were Distinct and Phonemic in the First Temple Period that have Merged in Modern Pronunciation](#)

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¹ See [Joüon-Muraoka 1991](#) § 5-9.

² Quoted from [Joüon-Muraoka 1991](#) p. 38.

“ [T]he transition from quantitative to qualitative distinction in the Hebrew vowels appears to have taken place relatively late. Transcription of Hebrew in the Septuagint and the second column of Origen's Hexapla as well as explicit statements by St Jerome (4th cent.) all point to quantitative distinction.”

³ Librairie du Liban, Beirut 1972.

⁴ [Mitchel 1993](#) p. 145.

⁵ DS - In fact there was a distinction of both quality and quantity. *Qal of √YKL*

| | /EBHP/ | [EBHP] | /TH/* | [TH] | Distinction /EBHP/ - /TH/* |
|--|------------------------|--------------------------------------|----------------------------|-----------------------------------|---|
| Inf. abs. | /ya'ko:l/ | [ye'ko:l] | /yâ'kol/ | [yɔ:'xo:l] | Vowel length and quality |
| Inf. constr. | /yu'kult/ > /y'kult/ | [yɛ'kult] / [yũ'kult] / [yö'kɔt̪] | /yɛ'kolet/ | [yɛ'xo:leθ] | Vowel quality |
| Suffix Conjugation <i>3rd person m.s.</i> | /ya'kul/ | [ye'kul] or [ye'kɔt̪] | /yâ'kol/ | [yɔ:'xo:l] | Vowel quality |
| <i>3rd person m.p.</i> | /ya'kulu:/ | [ye'kulu:] or [ye'kɔt̪] | /yâ'ku/ (pausal /yɔ'kolu/) | [yɔ:xə'lu:] (pausal [yɔ:'xo:lu:]) | Stress in contextual form. |
| <i>1st person</i> | /ya'kulti:/ | [ye'kulti:] or [ye'kɔt̪i:] | /yâ'kolti/ | [yɔ:'xo:lti:] | Vowel length and quality |

⁶ One may note the very interesting parallels to present day Egyptian Arabic -

"The oldest stage of the Egyptian Arabic, which is no more Old Arabic, must have been a linguistic system where every word ended in a long vowel or in a consonant. Thus no word ended in a short vowel." [Birkeland 1952](#) pp 12-13

"In Stage IV ... every word ended in one or two consonants or a short vowel. Long final vowels did not exist. Within the word every long unstressed vowel and every long vowel before two consonants was shortened." [Birkeland 1952](#) p 28

" ... (early Arabic) quantity of vowels must have been of the greatest importance to a man who wished to be understood... (however, in modern Egyptian Arabic) nobody can be well understood in Egypt today without the accent used by the natives. As a matter of fact all long, unaccented vowels are shortened.... Reading the literary language of newspapers etc.... (Egyptians) often shorten unaccented long vowels, because the accent they are accustomed to is very marked. Also in reading the Koran they use a marked accent. But in that case it is reckoned as bad pronunciation if they shorten unaccented long vowels." [Birkeland 1952](#) p 32

"Briefly the question is whether quantity is dependent on accent or accent on quantity. The only method of solving this problem consists in an examination of the cases where oppositions of short and long vowels are possible and of the cases where they are impossible. Where such oppositions are impossible vowel quantity is, of course, irrelevant. Thus in unstressed syllables only short vowels occur. In this position, therefore, vowel quantity is irrelevant. Only in stressed syllables both long and short vowels are possible. But stressed final vowels are out of question, too, because they are always long.... Similarly a stressed vowel before two consonants is always short.... Further: An opposition between long and short vowel in a final syllable is impossible... The result, therefore, is that only one position is left where an opposition between long and short vowel is possible. This position is an accented, open, non-final syllable...." [Birkeland 1952](#) p. 36.

"In any case it cannot be doubted that two systems are struggling against one another in the present dialect, one system claiming dependence of quantity on accent and relevance of accent only, another quantity system claiming dependence of accent on quantity and relevance of quantity only. The dialectal tendency has conquered the territory to so great an extent that quantity is independent on accent only in stressed, open, non-final syllables.

Even in the syllables last mentioned the phonetic opposition of long and short vowels does not ... seem to be utilized semantically. ...

The insignificant role of vowel quantity is on the whole, as we know, revealed in the fact that long vowels are shortened as soon as they lose the accent. Take, e. g., the frequent word 'aal "he said". In fluent speech it almost always sounds 'āl. Even if long vowels do not lose the accent, but appear before two consonants, they are shortened." [Birkeland 1952](#) p 28

"Now we summarize: In the Egyptian Arabic dialect of to-day the opposition between long and short vowels does not seem to have any grammatical or semantic function. Even in stressed non-final, open syllables, the only position in which both long and short vowels may occur, the opposition between them does not appear to have any actual function, originally short vowels being occasionally lengthened and originally long vowels being occasionally shortened in this position. The accent, however, has a most important functional value. Diachronically this value has its basis in the marked accent which produced the numerous reductions and elisions of vowels in Stage IV. But the accent did not become relevant before Stage V. Then the elision of the suffix -h after long vowels created forms with an unstressed final vowel, so that the stress nosy signifies the meaning of the lost suffix.

"It is, as we know, beyond doubt that in stressed, open non-final syllables we have to distinguish phonetically, between long and short vowel, at least in the speech of the educated classes, especially in Cairo." [Birkeland 1952](#) pp. 43-44.

⁷ See [Blau 2010](#) §3.5.13.

⁸ [Steiner 1997](#) pp. 147-150

⁹ See also [Blau 2010](#) §3.5.4.

¹⁰ Note agreement of Blau - [Blau 2010](#) §3.5.4.2, 3.5.4.3.

In the *Journal of Semitic Studies* 1989 ([Khan 1989](#)) he described this slightly differently "The rule which emerges is as follows: all vowels are long except for those in unstressed closed syllables and those which are represented by *yəwā* or a *ḥaṭṭāp* sign. *Pataḥ* and *segol*, therefore, were long if they were stressed or stood in an unstressed open syllable. These two signs marked vowels which were short during the period when the quality shifts *a:ā > a:ō* and *e:ē > ε:ē* were operative. Vowels which were long in this period are marked in the Tiberian vocalization tradition by *qameṣ* and *šere*. It follows that the quality shifts had ceased operating before the end of the Masoretic period."

¹¹ [Khan 1994](#) p. 134.

¹² **"Stressed", in this context, refers to syllables carrying either a primary or secondary stress, i.e. any syllable marked with a Masoretic accent.** As stated by Blau ([Blau 2010](#) §3.5.7.1.5n.) -

In referring to greater stress on absolute over construct forms, I am referring to the language as it would have been spoken; in fact this is not the case according to the biblical cantillation marks, which reflect the solemn ceremonial reading of the Bible.

For stress in TH construct see [Blau 2010](#) §4.4.3.1n.

¹³ [Blau 2010](#) §4.2.5.2 and 4.3.8.7.4.4.

¹⁴ [Blau 2010](#) §3.5.7.4.6.

¹⁵ See [Blau 2010](#) §3.5.11.2, 3.5.13 and 4.3.8.3.2n.

¹⁶ Note [non-spirantization of the bgdkpt consonants](#)

¹⁷ [Joüon-Muraoka 1991](#) §58a.

¹⁸ Note, in reconstructed [EBHP] transliterations and sound files -

1. there is no [spirantization of the bgdkpt consonants](#);
2. [vowel qualities are outlined here](#);
3. I use the most probable form. Where no one form stands out as most probable, I select the one closest to the MT vocalization.
4. when multiple forms are possible, the form used is underlined.

¹⁹ [Blau 1998](#) p. 32

²⁰ E.g. 2 Samuel 5:10.

²¹ In transliterating consonantal [phonemes](#) I use the [Society of Biblical Literature](#) (SBL) *Academic Translation Style* (TH_{SBL}). I generally to use the [IPA](#) system to transliterate consonantal [phones](#).

²² For convenience, I sometimes use ['] in [EBHP] etc. transcriptions.

²³ In ordinary speech the treatment of the spiratization /b/ [b]/[v]; /k/ [k]/[x] and /p/ [p]/[f] in IH is complicated (See [Bolzky 1997](#) sect. 17.5.4.). In reading the biblical text these allophonic distinctions are maintained as marked in the MT.

²⁴ “(T)he not strictly phonetic conditioning of sound change may be, it seems, demonstrated According to the view of the strict conditioning of phonetic changes, a phonetic change affects the sound concerned in all the positions in which it is operating. Let us assume that in a certain language the allophones A₁ and A₂ exist. Later (stage II), another sound (B) shifts to A₁: B>A₁. Now (stage III) another sound change affects A₁, let us say: A₁>C. According to the view that sound changes only require reference to phonetic information, A₁ has to shift to C in all its occurrences, both in environments in which it alternated with A₂ and in those in which it developed from B. Yet I would like to submit that this is not the only possibility. The other is that the sound shift A₁>C affects only the phoneme A₁ that arose from B, without changing A₁ that is the allophone of A₂. In this case, the speaker differentiates between the phoneme A₁ which is not restricted to a special environment, and the allophone A₁, which he recognizes by its restriction to special environments and its alternation with A₂ in other environments. Synchronically, therefore, I am inclined to posit for stage II a phoneme A₁ (the historical continuation of B) and the allophones A₁ and A₂.

It seems that (late) Biblical Hebrew reflects such a case of identical phonemes and allophones with only the phonemes being affected by a sound change. It can be [proved](#) that, at least at the time of the Septuagint translation of the Pentateuch, Biblical Hebrew still possessed *ḡ* and *ḥ* (which later shifted to *ḡ* and *ḥ* respectively). We do not, to be sure, know the exact date of the spirantization of (b), g, (d), k, (p.t). It stands to reason, however, that it had already taken place at the time of the translation of the Septuagint. Accordingly, one has to posit that besides the phonemes /*ḡ*/ and /*ḥ*/, the allophones [*ḡ*] and [*ḥ*] (of /*ḡ*/ and /*ḥ*/) also already existed, although the

latter were practically identical to the former. Later, when the phonemes *g* and *h* shifted to *ʕ* and *ħ*, the phonetically identical allophones were not affected.

This interpretation of the facts may be buttressed by Eastern Syriac and Modern Hebrew. In Eastern Syriac, *ħ* has shifted to *ħ̄*, and, as is usual, post-vocalic *b, g, d, k, p, t* have been spirantized. Yet the coexistence of *ħ* and spirantized *k* has not led to any significant confusion between the two. Similarly, in literary and colloquial standards of Modern Hebrew as used by Ashkenazim *w* has shifted to *v* and *ħ* to *x*, alongside *v/x* which are the allophones of *b/k*, respectively. Nevertheless, this has not led to any significant amount of confusion between the phonemes *v/x* and the phonetically identical allophones.”

Non-Phonetic conditioning of Sound Change and Biblical Hebrew in [Blau 1998](#) pp. 10-12

²⁵ See [Khan 1997a](#).

²⁶ [x] is also transliterated as *kh* or *k̄*.

²⁷ For convenience, I sometimes use [t̥] in [EBHP] etc. transcriptions.

²⁸ From http://en.wikipedia.org/wiki/Hebrew_phonology#Dropped_consonants

In normal speech, /ʔ/ is dropped when occurring between vowels, and /j/ is dropped when occurring between vowels where the first is a front vowel (/e/ or /i/) or the second is /i/. /h/ between vowels may also be dropped, especially in fast speech. Hence, /ma ha-ʔaʔa/ "what's the time?" becomes [mahaʔa'a] or [maaʔa'a].

Thus /y/ is no longer pronounced if at beginning of word followed by [i] e.g. ישמור pronounced [iʃ'mor]

²⁹ For convenience, I sometimes use [ç] in [EBHP] etc. transcriptions.

³⁰ For convenience, I sometimes use [ç] in [TH] etc. transcriptions.

³¹ For convenience, I sometimes use [ʃ̣] in [EBHP] etc. transcriptions.

³² also transliterated as *ḵ*

³³ For convenience, I sometimes use [q] in [EBHP] etc. transcriptions.

³⁴ For convenience, I sometimes use [r] in [EBHP] etc. transcriptions.

³⁵ For convenience, I sometimes use [r] in transcriptions.

³⁶ For convenience, I sometimes use [ʃ̣] in [EBHP] etc. transcriptions.

³⁷ For convenience, I sometimes use [j̣] in [EBHP] etc. transcriptions.

³⁸ For the impact of the merging of phonemes on the vocabulary of Israeli Hebrew see Encyclopedia Judaica vol. 16 para. 1645-1646.

³⁹ With voiced consonants the vocal chords are vibrated, which can be felt in the throat. All vowels are voiced.

⁴⁰ With voiceless or unvoiced consonants the vocal chords are not vibrated, so there is no vibration in the throat.

⁴¹ Note [non-spirantization of the *bgdkpt* consonants](#)

⁴² See [Harris](#) p. 36.

⁴³ See [Harris](#) p. 35.

⁴⁴ See [Harris](#) pp. 40-41.