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History of the Ancient and Modern Hebrew Language
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Excursus 1

Phonemic Structure of Pre-Exilic, Tiberian[1] and Israeli Hebrew Contrasted

f. Reading Traditions of Biblical Hebrew

Table 23 - EBHP, TH and the Phonetic Realizations BH in Key Modern Pronunciations

A Note on the Use of Post-Exilic Evidence Regarding the pronunciation of BH

N.b. *Justification of Proposals for EBHP*

1. General Approach in Theory and Practice

In theory, derivations should be traced from *Proto-Semitic (PS) to *Proto-Northwest Semitic (PNWS) to Proto-Hebrew (PH) to Classical Biblical Hebrew (CBH, /EBHP/+), Post-Classical Biblical Hebrew (PCBH, */LBHP/ evidenced in the vowel letters of the Proto-Masoretic Text (PMT) and then separately to (in order of importance) -

1. *Proto-Tiberian Hebrew (*/PTH/+) and Tiberian Hebrew (/TH/+).
2. Biblical Hebrew as reflected in Greek and Latin transcriptions ($BH_{Gk\text{-}Lat}$)[2] - to the extent that relevant evidence is available.
3. Biblical Hebrew as reflected in the orthography of biblical Dead Sea Scrolls (BH_{Qum}) - to the extent that relevant evidence is available.
4. Biblical Hebrew pointed with Palestinian Vocalization (BH_{Pal})[3] - to the extent that relevant evidence is available.
5. Biblical Hebrew pointed with Babylonian Vocalization (BH_{Bab})[4] - to the extent that relevant evidence is available.
6. Biblical Hebrew as pronounced by the modern Samaritans (BH_{SAM})
7. The range of modern Jewish pronunciations.

However, in practice, given:

- most of the areas of dispute relate to the vowel system of BH;
- the superbly crafted and comprehensive nature of the Tiberian masoretic system which, in many cases preserves evidence of early pronunciations lost in the various non-Tiberian traditions;

- **the fragmentary nature of the vocalization that can be deduced from the vowel letters of the biblical Dead Sea Scrolls;**
- **the difficulties of interpreting the Greek evidence[5];**
- **the pervasive influence of Aramaic on post-exilic Hebrew in general and the highly Aramaized nature evidenced by BH_{Pal}, BH_{Bab}, and BH_{SAM}[6] and in the Hebrew traditions underlying $BH_{Gk\text{-}Lat}$[7];**
- **the rather obvious fact that BH_{Qum} is highly Aramaized[8] and is overlaid by a pronunciation tradition that is probably descended not from BH but from one or more contemporaneous dialects; and,**
- **the high degree of overall similarity between TH and BH_{Pal}, BH_{Bab}[9] and Jerome's Latin transliterations[10].**

it seems most practical that derivations should be traced -

i) from *Proto-Semitic (PS) to *Proto-Northwest Semitic (PNWS) to *Proto-Hebrew (PH) to Classical Biblical Hebrew (CBH, */EBHP/+), Post-Classical Biblical Hebrew (PCBH, */LBHP/ evidenced in the vowel letters of the Proto-Masoretic Text (PMT)); and then,

ii) to *Proto-Tiberian Hebrew (*/PTH/+) and Tiberian Hebrew (/TH/+) bringing in evidence for parallel lines of pronunciation tradition from (in order of importance) - Biblical Hebrew as reflected in the orthography of biblical Dead Sea Scrolls (BH_{Qum}); Biblical Hebrew as reflected in Greek and Latin transcriptions ($BH_{Gk\text{-}Lat}$); Biblical Hebrew pointed with Palestinian Vocalization (BH_{Pal}); Biblical Hebrew pointed with Babylonian Vocalization (BH_{Bab}); and, the range of modern pronunciations. A superb example of how this is done by a master is seen in Ben-Ḥayyim 1954. **A good schematic outline of the vowel systems of Proto-Hebrew, Secunda Hebrew, Tiberian, Babylonian, and Palestinian Hebrew and Samaritan Hebrew is provided in the Wikipedia article *Biblical Hebrew Phonology* which also gives a condensed outline of the changes in the vowel system over the history of the Hebrew language.**

2. What We Can Learn From the Greek and Latin Transliterations

i) historic **distinctions of consonant and vowel length** were still maintained in the Hebrew underlying the Secunda. The MT only preserves the historic distinctions of consonant length;

ii) The sound shifts *ḫ* >*ḥ* and *ġ* > *ᶜ* (see Polyphonic Letters ח ע) had not occurred in the Hebrew underlying the Septuagint Torah (c. early third c. BCE) but had occurred in the Hebrew underlying the Secunda. These mergers had occurred in the Tiberian Masoretic tradition at some time before the fixing of the MT.

Aside form occasional mention of Israelite names transliterated into Akkadian, the Septuagint (Torah early third c. BCE) provides the earliest transliteration of vocalized BH names while the Secunda (second-third c. CE) provides the transliteration of vocalized continuous text. Jerome

a. What is a Phoneme?

Box 9

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 Joüon-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 10

The Nature of Consonant and Vowel Length

In pre-medieval Hebrew, vowel[11] 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*[12], (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...."[13] and hence is vital to appreciating the meter of biblical poetry.

Box 11 - 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 *ḳan:o'* = *ḳan:å'* 'zealous'.

"Eventually, the inherited short vowels also developed allophones as did the up-gliding diphthongs: [å:] and [ä] from /a/; and [o:], [o] and [å] 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 them, e.g.

['**kä**li:] 'vessel' ~ [kälyə'**kå**] 'your vessel', ['**pi:**hu:] ~ ['**pi:w**] 'his mouth', ['**śä**ku:] 'lookout point'~ [śäk'**wi:**] ' rooster', [yištaḥă'**wä:**] 'he will prostrate himself' ~ [way:iš'**taḥ**u:] '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 yå'**ko(ʷ)l** 'be able' was long, while the *o* of sg. 3m. perfect yå'**kol** 'he was able' was short, like the ancestor of *å* in *yəkål'* ***täm***. In the Pre-Tiberian reading tradition, the *o* of sg. 3m. perfect yå'**kol** lengthened, splitting off from the ancestor of *å* in yəkål'**täm** and merging with the long *o* of infinitival yå'**koʷl**[14].

"As a result of this change, length became to a large extent conditioned by stress[15]**.** 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-pausal[16] 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. *tiškaḇ* ~ *tiškåḇ* < **tiškab* ~ **tiškāb*, *yəšal:aḥ* ~ *yəšal:eaḥ* < **yišal:eḥ* ~

Box 11 - Were Vowel Quantity and Consonant Quantity Phonemic in BH?

**yišal:ēḥ.*

"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 [ᶜăru:mi:m עֲרוּמִים] not = Job 22:6 [ᶜărum:i:m עֲרוּמִּים] 'crafty (pl. m.) not = naked (pl. m.)'. And the spelling *ntnw* was used for both [nåṯan:u:] 'we gave' and [nåṯănu:] ' 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 *ᶜăruʷmiʸm* (עֲרוּמִים) not = Job 22:6 *ᶜăruʷm:iʸm* (עֲרוּמִּים) (see above) and Lev. 7:30 *təbiʸ'äʸnåʰ* (תְּבִיאֶינָה) not = Lev. 6:14
təbiʸ'än:åʰ (תְּבִיאֶנָּה) ' 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."**[17]

"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:ē > ɛ:ē, a:ā > a:ɔ̄ɔ*The result was the emergence of four vowel qualities (*ɛ, e, a, ɔ*) from an original two (*e, a*). The signs *ṣere* and *qameṣ* in Tiberian Hebrew represent vowels that were long *e* and *a* respectively before the operation of the quality shifts. The signs *segol* and *pataḥ* 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 structure[18]. All stressed vowels and all vowels in an unstressed open syllable were pronounced long[19]. As a result not only *qameṣ* and *ṣere* but also *pataḥ* 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 *o* developed into two distinct qualities: *o:ō > ɔ:ō*. For this reason long *ō* occurs only in stressed or unstressed open syllables whereas short *ɔ* occurs only in unstressed closed syllables."[20 21]

Box 12

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...."[22]

Thus pretonic gemination at times substitutes for pretonic lengthening[23].

See also

Simplification of diphthongs

Elision of word-final aleph with compensaatory lengthening of the preceeding vowel.

Interrogative Pronoun מָה

Box 13

Pausal Forms

Pausal forms in TH are probably closely related to the rhythm of formal reading of scripture[24]. 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 6 - Distinctive Vowel Length and Syllable Type in EBHP and their Reflex in TH		
	EBHP */EBHP/*[25] (c. 850-550 BCE)	**TH** **/TH/* *[TH]** (c. 850 CE)
Open stressed syllable	**Long** */'**hû**/ (<*/'**hu**ʾa/) "he"	**Long in [TH]** /'**hu**/ *['**hu:**] "he"
Closed stressed syllable	**Long in nouns, short in verbs** ***/na'**tan**/ "he gave": */na'**ta:n**/ "Nathan" */ga'**mal**/ "he weaned": */ga'**ma:l**/ "camel"	**Long in [TH]** /nå'**tan**/ *[nɔ:'**θɛ:n**] "he gave": /nå'**tån**/ *[nɔ:'**θɔ:n**] "Nathan" /gå'**mal**/ *[gɔ:'**mɛ:l**] "he weaned"
Stressed syllable doubly closed in EBHP ***N.b. in TH doubly closed syllables rarely remain because of reduction of geminated final consonant and insertion of anaptyctic vowels breaking up other consonantal clusters***	**Short** */'**ḥuqq**/ "law" */šō'**mart**/ (<*/šō'**mirt**/) *qal* a.p. fs. "guard, guarding"	**Long in [TH]** /'**ḥoq**/ *['**ħo:q**] "law" /šo'**mɛ**rɛ**t**/ *[ʃo:'**mɛ:**rɛθ] "guard, guarding"
Open unstressed syllable	**Long/Short** */sū'**gar**/ "cage" */su'**gar**/ *qal* passive PC 3ms. "it was closed"	**Long in [TH]** /su'**g**ar/ *[su:'**ɣɛ:r**] "cage" /sug'**gar**/ *[sug'**gɛ:r**] "it was closed" (syllable closed by gemination resulting in form identical to *pual*)][26]
Closed unstressed syllable	**Short/Long** */min-/ "from" */ˌmīn/ "variety of.."	**Short in [TH]** /min-/ "from" /ˌmin/ *[ˌmi:n] "variety of.."
Unstressed syllable doubly closed in EBHP	**Short** */ˌḥuqq/ "law of" */šōˌmart/ (<*/šōˌmirt/) *qal* a.p. fs. constr. "guard of"	**Long in [TH]** /ˌḥoq/ *[ˌħo:q] "law of" /šoˌmɛrɛ**t**/ *[ʃo:ˌmɛ:rɛθ] "guard of"

Table 7 - 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)***
BHA phase 1 (PNWS)	c. 2000 - c. 1200 BCE	/ˈʿ**ā**lamu/ > /ˈʿ**ō**lamu/ /šaˈ**lā**mu/ > /šaˈ**lō**mu/ /ˈ**qā**ṭilu/ > /ˈ**qō**ṭilu/ (ms. a.p. *qal*) /ˈ**qā**ṭiltu/ > /ˈ**qō**ṭiltu/ (fs. a.p. *qal*) /paˈ**qī**du/ /ˈ**'a**mara/ (“he said”) /ˈ**'a**marū/ (“they said”)
BHA phase 2 (PH)	c. 1200 - c. 1000 BCE	/ʿōˈ**la**mu/ /šaˈ**lō**mu/ /qōˈ**ṭi**lu/ (ms. a.p. *qal*) /qōˈ**ṭil**tu/ (fs. a.p. *qal*) /paˈ**qī**du/ /’aˈ**ma**ra/ /’aˈ**ma**rū/
BHA phase 3 (/EBHP/) (note non-spirantization of the *bgdkpt* consonants)	c. 1000 - c. 500 BCE	/ʿōˈ**la:m**/ /šaˈ**lōm**/ /qōˈ**ṭe:l**/ (ms. a.p. *qal*) /qōˈ**ṭilt**/ (f.s. a.p. *qal*) /paˈ**qīd**/ /’aˈ**mar**/ /’aˈ**ma**rū/
BHA phase 4 (/LBHP/)	c. 500 BCE – c. 200 CE	/ʿōˈ**la:m**/ /šaˈ**lōm**/ /qōˈ**ṭe:l**/ (ms. a.p. *qal*) /qōˈ**ṭɛlt**/ (fs. a.p. *qal*) /paˈ**qīd**/

Table 7 - 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)***
		/ʾa**'mar**/ /ʾa**'mar**ū/
BHA phase 6 (*/TH/* [TH]*)	c. 850 CE	/ᶜo**'l̲å̲m**/ [ᶜo**:'lɔ:m**] /šå**'lom**/ [ʃɔ**:'lo:m**] /qo**'ṭẹ̲l**/ [qo**:'ṭẹ:l**] (ms. a.p. Part. *qal*) /qo**'ṭɛlɛ̲t**/ [qo**:'ṭɛ:**lɛθ̲] (fs. a.p. *qal*) /på**'qid̲**/ [pɔ**:'qi:ð**] /ʾå**'mar**/ [ʔɔ**:'mɐ:r**] /ʾåmə**'ru**/ [ʔɔ**:**mə**'ru:**]
No Phonetic distinction in length of vowels *(IH)*	Current Israeli Hebrew	/o**'lam**/ /ša**'lom**/ /ko**'tɛl**/ (ms. a.p. *qal*) /ko**'tɛ**lɛt/ (fs. a.p. *qal*) /pa**'qid**/ /a**'mar**/ /am**'ru**/

Table 8

Phonemic Status and Phonetic Realization of Vowel and Consonant Length in EBHP , TH and BH_{IH}

PH ***(c. 1200 BCE)***	***EBHP*** ****/EBHP/[2728] *[EBHP][29]*** ***(c. 850-550 BCE)***	***TH*** ***/TH/* *[TH]*** ***(c. 850 CE)***	BH_{IH} **[BH_{IH}] = [IH]** **(present)**	***Phonemic distinction based on and comments***
/min/ /mīn/	/min/ [mɪn] "from" /ˌmīn/ [ˌmiːn] "variety of.."	מִן־ /min/ [min] מִין /ˌmin/ [ˌmiːn]	[min] [min]	PH – vowel length EBHP - vowel length, stress TH – spelling, stress and context IH – spelling and context
/'**šī**tu/ √ŠYT /'**šī**tu/ √ŠYT	/'**še:t**/ ['**ʃe̞:t**] "base" /'**šīt**/ ['**ʃi:t**] (qal inf. constr.) "putting"	שֶׁת /'**še̞t**/ *['**ʃe̞:θ**] שִׁית /'**šit**/ *['**ʃi:θ**]	['**ʃɛt**] ['**ʃit**]	PH – vowel length EBHP - vowel quality TH and IH –spelling and vowel quality
	/ʾitt/ [ʔɪtt] "with"	אֵת /ʾe̞t/ *[ʔe̞:θ]	[ɛt]	EBHP - consonant length (gemination) and, possibly, vowel quality. TH and IH - context
	/ˌ'at/? /ˌ'it/? [ˌʔɐt]?, [ˌʔɪt]? [ˌʔɛt]? (particle indicating direct object)	אֶת /ˌʾe̞t/ *[ˌʔe̞:θ]	[ɛt]	
		אֶת־ /ʾɛt/ *[ʔɛ:θ]	[ɛt]	
/ᶜabdu/ /ᶜa**ba**dū/ > /ᶜa'**ba**dū/	/ᶜ**abd**/ [ᶜ**ɐbd**]? [ᶜ**ɐ**bəd]? "slave" /ᶜa'**bạ**dū/ [ᶜɐ'**bɐ**duˑ] "they served"	עֶבֶד /ᶜɛbɛd/ [ᶜ**ɛ:**vɛ**ð**] עָבְדוּ /ᶜåbə'**du**/ [ᶜɔːvə'**ðuː**]	[**ɛ**vɛd] [ɐv'**du**]	PH – vowel distribution and length. EBHP – vowel quality and distribution; spelling TH and IH – vowel quality and distribution; spelling
/ya'**qū**mu/ /'**ya**qum/ /'**ya**qum/	/ya'**qūm**/ [yɐ'**quːm**] "he will stand" (*qal indicative*) /'**ya**qum/[30] ['**yɐ**qʊm]? ['**yɐ**qo̞ ɱ]? "let him stand" (*qal jussive*) /way'**ya**qum/ [wɐy'**yɐ**qʊm]? [wɐy'**yɐ**qo̞ ɱ]? "he stood"	יָקוּם /yå'qum/ [yɔː'**quːm**] יָקֹם /yå'**qom**/ yɔː'**qoːm**] וַיָּקָם /way'**yå**qo̞m/ [wɐy'**yɔ**ːqɔm]	[yɐ'**kum**] [yɐ'kom] [vɐyɐ'**kɐm**]	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 *waC* -, in this instance *way,* prefix. TH - vowel quality and stress for *way**yå**qåm* IH *vaya'**kam*** frequent but considered incorrect.

Table 8

Phonemic Status and Phonetic Realization of Vowel and Consonant Length in EBHP , TH and BHIH

*PH (c. 1200 BCE)	EBHP */EBHP/[27][28] *[EBHP][29] (c. 850-550 BCE)	TH /TH/* *[TH] (c. 850 CE)	BHIH [BHIH] = [IH] (present)	Phonemic distinction based on and comments
	(*qal preterite*)			
	/'hašmid/ ['heʃmɪd]? ['heʃmɛd]? (*hiphil* imp.) "destroy!" /haš'mīd/ [heʃ'mi:d] (*hiphil* inf. constr.) "destroying"	הַשְׁמֵד /haš'mẹḏ/ [heʃ'mẹ:ð] הַשְׁמִיד /haš'mid/ [heʃ'mi:ð]	[heʃ'mɛd] [heʃ'mid]	EBHP – vowel length and stress. TH and IH - vowel quality
/'ṭabbaḫu/ > /ṭab'baḫu/ /ṭa'bāḫu/ > /ṭa'bōḫu/	/ṭab'ba:ḫ/ [ṭɐb'ba:x] "butcher" /ṭa'bōḫ/ [ṭɐ'bo:x] (qal inf. abs.) "slaughtering"	טַבָּח /ṭab'båḥ/ [ṭɐb'bɔ:ħ] טָבוֹחַ /ṭå'bo:aḥ/ [ṭɔ:'vo:ɐħ]	[tɐ'bɐx] [tɐ'vo.ɐx]	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
/'ḫātamu/ > /'ḫōtamu/ > /ḫō'tamu/ /ḫa'tāmu/ > /ḫa'tōmu/	/ḫō'ta:m/ [xo:'ta:m] "seal" /ḫa'tōm/ [xɐ'to:m] (qal inf. abs.) "sealing"	חוֹתָם /ḥo'ṯåm/ [ħo:'θɔ:m] חָתוֹם /ḥå'ṯom/ [ħɔ:'θo:m]	[xo'tɐm] [xɐ'tom]	PH – vowel length EBHP - vowel quality and length TH and IH - vowel quality
/ša'lāmu/ > /ša'lōmu/ /'šalamū/ > /ša'lamū/	/ša'lōm/ [ʃɐ'lo:m] "peace" /ša'lạmū/ [ʃɐ'lẹẹmụ]· "they became complete etc."	שָׁלוֹם /šå'lom/ [ʃɔ:'lo:m] שָׁלְמוּ /šål'mu/ [ʃɔ:lə'mu:]	[ʃɐ'lom] [ʃel'mu]	PH – vowel quality and length EBHP –vowel length and vowel quality; suffix ū TH - vowel quality; suffix u IH - vowel quality; suffix u
/ma'rādu/ >	*/ma'rōd/ [mɐ'ro:d]	מָרוֹד	[me'ʁod]	**Note the regular noun**

Table 8 Phonemic Status and Phonetic Realization of Vowel and Consonant Length in EBHP , TH and BHIH				
****PH*** *(c. 1200 BCE)*	***EBHP*** **/EBHP/[27][28] *[EBHP][29]* *(c. 850-550 BCE)*	***TH*** */TH/* *[TH]* *(c. 850 CE)*	**BHIH** **[BHIH] = [IH]** **(present)**	***Phonemic distinction based on and comments***
/ma'**rō**du/ √RWD /ma'**rā**du/> /ma'**rō**du/ √RWD	"homelessness" /ma'**rōd**/ [mɐ'**ro:d**] (qal inf. abs.) "rebelling"	/må'**rod**/ [mɔ:'**ro:ð**] /må'**rod**/ [mɔ:'**ro:ð**]	[ma'**ʁ̞ɵ̞d**d̚]	**formation** /ma'**qā**lu/ from √QWL. מָקוֹם √QWM] "place"; מָלוֹן √LWN "inn" All periods context only
/'**ð**akaru/ → /za'**ka**ru/ /'**ð**akarū/ → /za'**ka**rū/	/za'**ka:r**/ [zɐ'**ka:ɾ**] "male" /za'**kạ**rū/ [zɐ'**kẹ**ẹrụ̆˙ (*qal SC* 3ms.) "they remembered"	**זָכָר** /zå'**kår**/ [zɔ:'**xɔ:ɾ**] **זָכְרוּ** /zåk'**ru**/ [zɔ:xə'**ru:**]	[za'**xaʁ̞**ʁ̞] [zax'**ʁ̞ʁ̞**]u	PH – vowel length (u - ū) EBHP – suffix ū TH - vowel quality and suffix u IH - vowel distribution and quality and suffix u
	/ka'**bid**/ [kɐ'**bɪd**] "he was heavy" (*qal*. 3ms. *SC*) /ka'**be:d**/ [kɐ'**bẹ:d**] "heavy" (adj. = ms. part. *qal*.)	**כָּבֵד** /kå'**bẹd**/ [kɔ:'**vẹ:ð**] **כָּבֵד** /kå'**bẹd**/ [kɔ:'**vẹ:ð**]	[ka'**vɛd**] [ka'**vɛd**]	EBHP – vowel and consonant length TH - vowel quality and residually consonant length IH - consonant quality and context
	/kab'**bid**/ [kab'**bid**] "honour!" (piel. m. s. imp.)	**כַּבֵּד** /kab'**bẹd**/ [kɐb'**bẹ:ð**]	[ka'**bɛd**]	
	/'**ḥagg**/ ['**ħɛgg**] "festival" [HGG]	**חַג** /'**ḥag**/ ['**ħɛ:ɣ**] OR **חָג** /'**ḥåg**/ ['**ħɔ:ɣ**]	['**xag**]	EBHP – vowel length and consonant length TH - vowel quality (where "festival" vocalized ḥag) or none (where "festival" vocalized ḥåg) IH - context
	/'**ḥâg**/ ['**ħagg**] "he described a circle [HWG]	**חָג** /'**ḥåg**/ ['**ħɔ:ɣ**]	['**xag**]	
/'ʾ**ā**siru/ > /'ʾ**ō**siru/ > /ʾō'**si**ru/ /ʾa'**sī**ru/	/ʾō'**se:r**/ [ʾo:'**sẹ:ɾ**] (*qal* a.p.) "one who ties" /ʾa'**sīr**/ [ʾɐ'**si:ɾ**] "prisoner"	**אֹסֵר** /ʾo'**sẹr**/ [ʾo:'**sẹ:ɾ**] **אָסִיר** /ʾå'**sir**/ [ʾɔ:'**si:ɾ**]	[o'**sɛʁ̞**ʁ̞] [a'**siʁ̞**ʁ̞]	PH – vowel length EBHP –vowel length and vowel quality TH and IH - vowel quality
/'**qab**biru/ >	/qab'**be:r**/ [qɐb'**bẹ:ɾ**]	**קַבֵּר**	[ka'**bɛʁ̞**ʁ̞]	PH –vowel length, vowel

Table 8

Phonemic Status and Phonetic Realization of Vowel and Consonant Length in EBHP, TH and BH$_{IH}$

***PH** *(c. 1200 BCE)*	***EBHP** */EBHP/[27][28] *[EBHP][29] *(c. 850-550 BCE)*	***TH** */TH/* *[TH] *(c. 850 CE)*	**BH$_{IH}$** [BH$_{IH}$] = [IH] (present)	***Phonemic distinction based on and comments***
/qab'**bir**/ /'**qā**biru/ > /qō'**biru**/ /'**qa**bru/	(*piel* inf. constr.) "burying" (more than one body) /qō'**be:r**/ [qo:'**bẹ:r**] (*qal* ms. act. part.) "burier" /'**qabr**/ ['**qẹbr**]? ['**qẹ**bər]? "tomb"	/qab'**bẹr**/ [qab'**bẹ:r**] קוֹבֵר /qo'**bẹr**/ [qo:'**vẹ:r**] קֶבֶר /'**qɛ**bɛr/ ['**qɛ:**vɛr]	 [ko'**vɛʁ̞**] ['**kɛ**vɛʁ̞]	distribution and consonant 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.
/'**sū**garu/ > /sū'**garu**/ /'**sa**gūru/ > /sa'**gūru**/	/sū'**gar**/ [su:'**ger**] "cage" /sa'**gūr**/ [sɐ'**gu:r**] (*qal* p.p.) "closed"	סוּגַר /su'**gar**/ [su:'**ɣa:r**] סָגוּר /så'**gur**/ [sɔ:'**ɣu:r**]	[su'**gaʁ̞**] [sa'**guʁ̞**]	PH – vowel quality and length EBHP - vowel quality and length TH and IH - vowel quality
/'**sū**garu/ > /sū'**garu**/ /'**sug**gara/ > /sug'**gara**/	/sū'**gar**/ [su:'**ger**] "cage" /sug'**gar**/ [sʊg'**ger**] (*pual* 3rd ms. *SC*) "it was closed"	סוּגַר /su'**gar**/ [su:'**ɣa:r**] סֻגַּר /sug'**gar**/ [sug'**ge:r**]	[su'**gaʁ̞**] [su'**gaʁ̞**]	PH – vowel length, consonant length and vowel quality of suffix. EBHP –vowel length and consonant length TH - Consonant length IH - context
/ga'**dālu**/ > /ga'**dōlu**/ /'**ga**dulu/ > /ga'**dulu**/	/ga'**dōl**/ [gɐ'**do:l**] (*qal* inf. abs..) "becoming big" /ga'**do:l**/ [gɐ'**do:l**] (adj.) "big"	גָּדוֹל /gå'**dol**/ [gɔ:'**ðo:l**][31] גָּדוֹל /gå'**dol**/ [gɔ:'**ðo:l**]	[ga'**dol**] [ga'**dol**]	PH – vowel quality and length EBHP – vowel quality and length TH and IH - none
/'**gud**lu/ /'**gud**dalū/ /gud'**dalū**/	/'**gudl**/ ['**gʊdl**]? ['**gʊ**dəl]? ['**gọ**dəl]? "greatness" /gud'**dalū**/ [gʊd'**dẹlụ**] "they were magnified"	גֹּדֶל /'**go**dɛl/ ['**go:**ðɛl] גֻּדְּלוּ /guddə'**lu**/ [guddə'**lu:**]	['**go**dɛl] [gud'**lu**]	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
/'**sipru**/	/'**sipr**/	סֵפֶר	['**sɛ**fɛr]	PH – vowel quality, length and

Table 8

Phonemic Status and Phonetic Realization of Vowel and Consonant Length in EBHP , TH and BH_{IH}

**PH* *(c. 1200 BCE)*	*EBHP* **/EBHP/*[27][28] **[EBHP]*[29] *(c. 850-550 BCE)*	*TH* */TH/** **[TH]* *(c. 850 CE)*	BH_{IH} [BH_{IH}] = [IH] **(present)**	*Phonemic distinction based on and comments*
/'**sa**pparū/ → /sip'**pi**rū/ /'**su**purū/ > /su'**pu**rū/	['**sɪ**pr̩]? ['**sɪ**pər]? “book” /sip'**pịi**rū/ [sɪp'**pɪ** ɪrʉ̞]ˑ “they recounted” (*piel* 3rd pl. *SC*) /su'**pu**rū/ [sʊ'**pʊ̞**ʊ̞rʉ̞]ˑ> /s'**pu**rū/ [sŭ'**pʊ**ruˑ] “count” (*qal* ms. imp.)	/'**sẹ**pɛr/ ['**sẹ**ːfɛr] סִפְּרוּ /sipp'**ru**/ [sippə'**ru**ː] סִפְּרוּ /sip'**ru**/ [sif'**ru**ː]	[sip'**ʁ̞ʁ̞**]ʉ [sif'**ʁ̞ʁ̞**]ʉ	pattern and consonant length EBHP – vowel quality, length and pattern, stress and consonant length TH - vowel quality and pattern; stress; residually consonant length IH - vowel quality and pattern; stress; consonant quality.
/'**ra**ḥabu/ > /ra'**ḥa**bu/ /ra'**ḥā**bu/ > /ra'**ḥō**bu/	/ra'**ḥa**ːb/ [rɐ'**ħa**ːb] “wide” /ra'**ḥōb**/ [rɐ'**ħo**ːb] (*qal* inf. abs.) “spreading”	רָחָב /rå'**ḥåb**/ [rɔː'**ħɔ**ːv] רָחוֹב /rå'**ḥob**/ [rɔː'**ħo**ːv]	[ʁ̞ 'χ**av**] [ʁ̞ 'χ**ov**]	PH – vowel length EBHP - vowel quality and length TH and IH - vowel quality
/'**qa**ṣiru/ > /qa'**ṣi**ru/ /qa'**ṣī**ru/	/qa'**ṣe**ːr/ [qɐ'**ṣẹ**ːr] “short” /qa'**ṣīr**/ [qɐ'**ṣi**ːr] “harvest”	קָצֵר /qå'**ṣẹr**/ [qɔː'**ṣẹ**ːr] קָצִיר /qå'**ṣir**/ [qɔː'**ṣi**ːr]	[ka'**tsɛʁ̞**ʁ̞] [ka'**tsiʁ̞**ʁ̞]	PH – vowel length EBHP - vowel length TH and IH - vowel quality
/'**ša**bū/? /'**šā**bū/? √ŠWB /'**ša**bayū/ > /ša'**ba**yū/ √ŠBY	/'**šâ**bū/ ['**ʃa**ːbuˑ] “they returned” /ša'**bū**/ [ʃɐ'**bu**ː] “they took prisoner”	שָׁבוּ /'**šå**bu/ ['**ʃɔ**ːvuː] שָׁבוּ /šå'**bu**/ [ʃɔː'**vu**ː]	['**ʃa**vu] [ʃa'**vu**]	EBHP - vowel length and stress TH and IH – stress
/'**ša**b/? /'**šā**ba/? √ŠWB /'**ša**bat/? /'**šā**bat/? /'**ša**baya/ > /ša'**ba**ya/ √ŠBY	/'**šâb**/ ['**ʃa**ːb] “he returned” /'**šā**bâ/ ['**ʃa**ːbɐˑ] “she returned” /ša'**bâ**/ [ʃɐ'**bɐ**ː] “he took prisoner”	שָׁב /'**šåb**/ ['**ʃɔ**ːv] שָׁבָה /'**šå**bå/ ['**ʃɔ**ːvɔː] שָׁבָה /šå'**bå**/ [ʃɔː'**vɔ**ː]	['**ʃav**] שב ['**ʃa**va] [ʃa'**va**]	EBHP - vowel length, stress and suffix ā TH and IH – stress and suffix
/'**ša**ba/ √ŠWB	/'**šâb**/ ['**ʃa**ːb] “he returned”	שָׁב	['**ʃav**]	EBHP - vowel and consonant

Table 8 Phonemic Status and Phonetic Realization of Vowel and Consonant Length in EBHP , TH and BH_{IH}				
PH** ***(c. 1200 BCE)	***EBHP*** ***/EBHP/[2728] *[EBHP][29]*** ***(c. 850-550 BCE)***	***TH*** ***/TH/* *[TH]*** ***(c. 850 CE)***	**BH_{IH}** **[BH_{IH}] = [IH]** **(present)**	***Phonemic distinction based on and comments***
/'**šab**ba/ √ŠBB	/'**šabb**/ ['ʃebb] "he cut down"	/'**šåb**/ [ʃɔ:v] שָׁב /'**šab**/ [ʃe:v]	['ʃav]	length TH - vowel quality IH - none

c. Consonantal Phonemes

Table - Reflexes of Proto-Semitic sounds in daughter languages

Table 9 - Consonants in EBHP, TH, [BH_{IH}] and [$TH_{CSP\ IS\text{-}ENG}$][32]				
Hebrew Letter	***EBHP*** ***/EBHP/ *[EBHP]*** ***(c. 850-550 BCE)***	***TH*** ***/TH/* *[TH]*** ***(c. 850 CE)***	***BH_{IH}*** ***[BH_{IH}] = [IH]*** ***(present)***	***[$TH_{CSP\ IS\text{-}ENG}$]***
א	/ʾ/ [ʔ][33]	/ʾ/ [ʔ, -] ***Silent when word or syllable final.***	[Ø]	[Ø]
בּ	/b/ [b] bilabial, stop, voiced	/b/ *2 allophones in complementary distribution* בּ = [b] and ב = b̲ [v]	[b][34]	[b]
ב			[v]	[v]
ג	/g/ [g]	/g/ Two allophones in complementary distribution ג = [g] and ג = g̲, ġ [ɤ] or nearly identical [ɣ][35] (I will use [ɣ] in [TH] transcriptions)	[g]	[g]
ג				

Table 9 - Consonants in EBHP, TH, [BH_{IH}] and [$TH_{CSP\ IS\text{-}ENG}$][32]				
Hebrew Letter	***EBHP*** */EBHP/ *[EBHP] (c. 850-550 BCE)*	***TH*** /TH/* *[TH] (c. 850 CE)*	***BH_{IH}*** *[BH_{IH}] = [IH] (present)*	*[$TH_{CSP\ IS\text{-}ENG}$]*
ד	/d/ [d]	/d/ *2 allophones in complementary distribution* ד = [d] and ד = d [ð]	[d]	[d]
ד				
ה	/h/ [h]	/h/ [h]	Rarely [h] frequently silent [Ø] or glottal stop [ʔ]	[h]
ה	consonantal [h] at end of word	consonantal [h] at end of word	[Ø]	[Ø]
ו	/w/ [w]	/w/ [w] (possibly [v][36]) *(I will use [w] in [TH] transcriptions)*	[v]	[v] or [w]
ז	/z/ [z]	/z/ [z]	[z]	[z]
ח	a polyphonic letter in BH representing /ḥ/ [ħ] or /ḫ/ [x][37] depending on its PS origin.	/ḥ/ [ħ]	[x]	[x]
ט	/ṭ/ [tˤ]	/ṭ/ [tˤ] *(nb. I use [t] in the case of the root* קטל *used conventionally for grammatical examples)*	[t] *(identical in pronunciation to* ת*)*	[t] *(identical in pronunciation to* ת*)*
י	/y/ [j] *(I will use [y] in [BH] transcriptions)*	/y/ [j] *(I will use [y] in [TH] transcriptions)*	[j][38] *(I will use [y] in [IH] and [$TH_{CSP\ IS\text{-}ENG}$] transcriptions)*	[j]
כ	/k/ [k]	/k/ 2 allophones in complementary	[k]	[k]
כ			[x]	[x]

Table 9 - Consonants in EBHP, TH, [BH_{IH}] and [$TH_{CSP\ IS\text{-}ENG}$][32]				
Hebrew Letter	***EBHP*** */EBHP/ *[EBHP] (c. 850-550 BCE)*	***TH*** /TH/* *[TH] (c. 850 CE)	***BH_{IH}*** *[BH_{IH}] = [IH] (present)*	*[$TH_{CSP\ IS\text{-}ENG}$]*
		distribution כ = **k** [k] or [k^h] and כ = **x** [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 /ʿ/ [ʕ][39] or /ġ/ [ɣ] depending on its PS origin. ([ɣ]is very close to [ʁ])	/ʿ/ [ʕ]	[Ø]	[Ø]
פ	/p/ [p]	/p/ *2 allophones in complementary distribution* פ = **p** [p] and פ = **p̲** [f]	[p]	[p]
פ			[f]	[f]
צ	/ṣ/ [sˤ] Less likely [t͡s]	/ṣ/ [sˤ]	[t͡s]	[t͡s]
ק	/q/[40] [kˤ]	/q/ [kˤ]	[k]	[k]
ר	/r/ [ɾ][41]	/r/ [ɾ]	[ʁ][42]	[ɾ]
שׂ	/ś/ [ɬ][43]	/ś/ [s]	[s]	[s]
שׁ	/š/ [ʃ][44]	/š/ [ʃ]	[ʃ]	[ʃ]

Table 9 - Consonants in EBHP, TH, [BH_{IH}] and [$TH_{CSP\ IS\text{-}ENG}$][32]				
Hebrew Letter	*EBHP* */EBHP/ *[EBHP]* *(c. 850-550 BCE)*	*TH* */TH/* *[TH]* *(c. 850 CE)*	*BH_{IH}* *[BH_{IH}] = [IH]* *(present)*	*[$TH_{CSP\ IS\text{-}ENG}$]*
ת	/t/ [t̪]	/t/ *2 allophones in complementary distribution* ת = [t̪] and ת = t̲ [θ]	[t]	[t]
ת				
22	26 phonemes	24 phonemes		

Table 10 - EBHP Heterogeneous Diphthongs and their Development in LBHP, TH and BH_{IH}

	EBHP */EBHP/ *[EBHP]* *(c. 850-550 BCE)*	*TH* */TH/* *[TH]* *(c. 850 CE)*	*BH_{IH}* *[BH_{IH}] = [IH]* *(present)*
Carrying primary stress	/áy/ = [e̋ý]	/áy/ = [e̋ý]	[e̋ý]
Unstressed or carrying secondary stress	/ay/ or /ày/ = [ɛy][45]	/ay/ or /ày/ = ê [e̲:]	[ɛ̲]
Carrying primary stress	/áw/ = [e̋w]	/áw/ = [e̋w]	[e̋w]
Unstressed or carrying secondary stress	/aw/ or /àw/ = [ɔ̲w]	/aw/ or /àw/ = ô [o̲:]	[o̲]

Box 14 - Consonantal Polyphony in Biblical Hebrew

Sibilants

BH (Biblical Hebrew) had at its inception three sibilants שׁ /š/, שׂ /ś/ and ס /s/. **We do not know for sure how the second phoneme was originally pronounced (today it is pronounced like ס = 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 - *שׂ*ריון '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 *שׁ*,*שׂ*, ס…. 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 *שׁ* 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., ס֫כְרִים 'they hire' (Ezra 4. 5: = *שׂ*כְרִים). In MH most of the roots containing an original /ś/ are already spelled with *samekh*….

Gutturals

The pharyngals /ʿ, ḥ/: 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 /ġ/ (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 he 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 ח,ע respectively were used for them. In other words, we can assume that ח was used during Biblical times to indicate both the pharyngal /ḥ/ and the velar /x/ while the sign ע did service for both the

Box 14 - Consonantal Polyphony in Biblical Hebrew

pharyngal /ᶜ/ and the velar /ġ/. **It should be mentioned that Arabic, which possesses all four of these sounds does indeed use the graphemes ح= ḥ; خ= ḫ ; ع = ᶜ; غ = ġ for the two other sounds and distinguishes between the two pairs by means of a diacritical point (compare Hebrew שׂ,שׁ).**

ח (/ḥ/) and ע (/ᶜ/) *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 *ḥets* do not seem to appear in certain names, e.g., *Isaac* = יִצְחָק , 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 = רָחֵל, *Achiezer* = אֲחִיעֶזֶר The same holds true for the *ᶜayin*. While some *'ayins* do not appear in the Greek transcription, e.g., in the name *Iakob* = יַעֲקֹב others do, e.g., *Gaza* = עַזָּה, (the Greeks, for lack of an adequate letter, use the Greek letter Γ = /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 lxl is employed mainly where the parallel Arabic root has a /x/, while in words in which Hebrew *ḥet* parallels Arabic /ḥ/. 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 עַזָּה which is transliterated in the Septuagint with a lgl - *Gaza* since the *ᶜayin* in this word, exactly as in its modern Arabic form, was pronounced as a velar lġl. 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 ח,ע 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 /ḥ/ and /ġ/ with /ᶜ/*….** 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 *ḥet* and *gamma* for the *ᶜayin* (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 *ḥet* and two kinds of *ᶜayin*. 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. /ḫ/ [x]

2. /ġ/ [ɣ]

Table 11[46] - Consonantal Minimal Pairs in *EBHP* No Longer Valid in Later Hebrew			
Consonantal Phonemes	***EBHP*** */EBHP/* ***(c. 850-550 BCE)***	***TH*** */TH/* * *[TH]* ***(c. 850 CE)***	***BH/IH*** *[BH/IH] = [IH]* ***(present)***
/t̲/:/ṯ/	נתעו (*/nit'**ta**ᶜū/ "they have broken out" Jb. 4:10) **:** נטעו (*/niṭ'**ṭa**ᶜū/ "they were planted" Is. 40:24)	נִתְּעוּ /nit'**tå**ᶜu/ *[nit'**tɔ**ːᶜuː] **:** נִטְּעוּ /niṭ'**ṭå**ᶜu/ *[niṭ'**ṭɔ**ːᶜuː]	Both pronounced [ni'**tu**]
	שתו (*/'**šā**tū/ "they put")**:** שטו (*/'**šā**ṭū/ "they went back and forth")	שָׁתוּ /'**šå**t̲u/ *['**ʃɔ**ːt̲uː] **:** שָׁטוּ /'**šå**ṭu/ *['**ʃɔ**ːṭuː]	Both pronounced ['**ʃɐ**tu]
/ḫ̲/:/ḫ̲/	חפר (qal √Ḫ̲PR "to be shy") **:** חרף (qal √ḪPR "to dig")	Merged as √ḪPR	Both pronounced *ḫpr*
	חרף (qal √Ḫ̲RP "to spend the winter") **:** חרף (qal √ḪRP "to annoy, taunt")	Merged as √ḪRP	Both pronounced *ḫrf*
	חרם (/'**ḫ̲irm**/ = "a net") **:** חרם (/'**ḥirm**/ = "devoted thing")	Both /'**ḥ̲e**rɛm/ *['**ħe**ːrɛm]	Both pronounced ['**xɛ**ɸ ɛm]
	פתח (/pit'**tiḫ̲**/ "he engraved") **:** פתח (/pit'**tiḥ**/ "he opened")	Both פִּתַּח /pit'**taḥ**/* [pit'**tɐːħ**]	Both pronounced [pi'**tɛ.**ɐx]
	חרם (hiphil √Ḫ̲RM "to divide, split") **:** חרם (hiphil √ḪRM "to place under the ban")	Merged as √ḪRM	Both pronounced [xrm]
/ḫ̲/:/k̲/	שחר (qal */ša'**ḥar**/ "it became black") **:** שכר (qal */ša'**k̲ar**/ "he became drunk")	שָׁחַר /šå'**ḥar**/ **:** שָׁכַר /šå'**k̲ar**/	Both pronounced [ʃɐ'**xɐɸ**]
ᶜ/ʕ̲/:ġ/χ̲/	עשה (qal √ᶜŚH "to do, make"): עשה (qal √ĠŚH "to protect, cover, turn toward")	Merged as /ᶜå'**šå**/	Both pronounced [ɐ'**sɐ**]
ʾ/ʔ̲/:ᶜ/ʕ̲/	אצר (*/ʾa'**ṣar**/ *qal* "he gathered up") **:** עצר (*/ᶜa'**ṣar**/ or */ġa'**ṣar**/ *qal* "he restrained")	/ʾå'**ṣar**/ **:** /ᶜå'**ṣar**/	Both pronounced [ɐtz'**ɐɸ**]

/ʾ/:/ʿ/:/ʕ/:/ǵ/:/ɣ/:/h/	אלם (√ʾLM "to be dumb") : עלם (√ʿLM "to be concealed") : עלם (√ĠLM "to become dark") : הלם (√HLM "to strike") :	/ʾlm/ : /ʿlm/ : /hlm/	all pronounced with the first historic consonant (/ʾ, ʿ, h/) silent [Ø].
/k/:/q/	יקרה (*/yiqqa'**rê**/ *nipha*l "he will encounter") : יכרה (/yikka'**rê**/ niphal "it will be dug")	יקרה /yiqqå'**rę**/ [yiqqɔ:'**rę**:]: יכרה /yikkå'**rę**/ [yikkɔ:'**rę**:]	Both pronounced [ikɐ'**ɻɛ**ɻ]
	תכהינה (*/tik'**hê**na(:)/ "they (f. p.) grow dim") : תקהינה (*/tiq'**hê**na(:)/ "they (f. p.) were/became blunt dim")	תִּכְהֶינָה /tik'**hɛ**nå/ : תִּקְהֶינָה /tiq'**hɛ**nå/	[tix'**ɛ**na] : [tik'**ɛ**na]
/s/:/ś/:/š/	שכר (*/śa'**k**ar/ "he hired") : שכר (*/ša'**kar**/ "he became drunk:) : **סכר** (*/sa'**kar**/ "he closed")	שָׁכָר (/šå'**kar**/ "he became drunk:) : **סכר** "he closed") and שָׂכָר "he hired") both pronounced ([sɔ:'**xɐ:ɾ**])	שָׁכָר ([ʃɐ'**xɐɻ**] "he became drunk:) : **סכר** ([sɐ'**xɐɻ**] "he closed") and שָׂכָר ([sɐ'**xɐɻ**] "he hired")

Table 12

Voiced, Voiceless and Emphatic Consonants in *EBHP

Place of Articulation	Voiced[47]	Voiceless[48]	Emphatic
Labials	ב = /b/ (בעל */ba'**ʿal**/ "he married")	פ = /p/ (פעל */pa'**ʿal**/ "he made")	non-existent
Dentals	ד = /d/ (דלל "to be thin, poor")	ת = /t/ (תלם "furrow") (תלל "to mock")	ט = /ṭ/ (טלם a place name and possibly also a noun meaning "black" or the like) (טלל "to resonate")
Sibilants	ז = /z/ (פרז "to be isolated")	ס = /s/ (פרס "to split, break bread") שׂ = /ś/ (פרש "to spread out, stretch over") שׁ = /š/ (פרש "to give a clear decision")	צ = /ṣ/ (פרץ "to break through")
Palatals-velars	ג = /g/ (גבל */ga'**bal**/ "he marked a boundary")	כ = /k/ (כבל "binding")	ק = /ḳ/ (קבל "receiving") (פרק "to tear away")
Velar fricatives	ע =/ġ/ (עדר *ġdr* place name "pool") (עלם "to be dark") (עלם *ġlm* "young man")	ח = /ḥ/ (חדר Ḥdr "to dwell") (חרם Ḥirm "a net")	non-existent
Pharyngals	ע = /ʿ/ (עלם "duration")	ח = /ḥ/ [ħ] (חרם */'**ḥirm**/ "devoted thing") (חלם */ḥa'**lam**/ "he dreamed")	non-existent
Laryngals or glottals	א = /'/ (אלם */'**ilm**/ "silence")	ה = /h/ (הלם */ha'**lam**/ "he struck")	non-existent

Table 13 - Proto-Semitic Phonemes (Consonants) Exhibiting Sound Shifts in Hebrew and their Equivalents in Aramaic and Classical Arabic					
PS **/PS/* *(c. 3000 BCE)*	*Reconstructed Classical Arabic*	*Reconstructed Aramaic*	**EBHP*[49] *(c. 850-550 BCE)*	***IH*** */IH/ [IH]*[50] *(present)*	*Hebrew Letter*
/'/ = /ʔ/	/ʔ/	/ʔ/	/ʔ/	/'/ [Ø]	א
/h/	/h/	/h/	/h/	/h/ Rarely [h] frequently [Ø] or [ʔ]	ה
/w/	/w/	/w/	/w/	/w/ [v]	ו
/d/ = /ð/	/ð/	/d/	/z/[51]	/z/ [z]	ז
/ḥ/	/ḥ/	/ḥ/	/ḥ/	/ḥ/ [x]	ח
/x/ = /ḫ/	/ḫ/	/ḫ/	/ḫ/		ח
/ṭ/ = /t̠ˤ/	/tˤ/	/t'/	/ṭ/ = /t̠ˤ/	/ṭ/ [t]	ט
/ᶜ/ = /ʕ/	/ʕ/	/ʕ/ [Ø] in some later dialects	/ʔ/	/'/ [Ø]	ע
/ġ/ = /ɣ/	/ɣ/	/ɣ/ > /ʕ/ [Ø] in some later dialects	/ġ/		ע
/p/	/f/	/p/	/p/	/p/ [p]	פ
/ṯ/ = /*ṯ/	/ðˤ/	/ṯ/	/ṣ/	/ṯ/ [ʦ]	צ
/ṣ/ = /s'/	/sˤ/	/ṣ/			צ
/ś ṣ́/	/ḍ/	/ᶜ/			צ
/q/ = /ḳ/	/q/	/q/	/q/	/q/ [k]	ק

Table 13 - Proto-Semitic Phonemes (Consonants) Exhibiting Sound Shifts in Hebrew and their Equivalents in Aramaic and Classical Arabic					
PS ***/PS/*** ***(c. 3000 BCE)***	***Reconstructed Classical Arabic***	***Reconstructed Aramaic***	****EBHP[49]*** ***(c. 850-550 BCE)***	***IH*** ***/IH/ [IH][50]*** ***(present)***	***Hebrew Letter***
/d̲/ = /θ̲/	**/θ̲/**	**/t̲/**	**[š̲][52]**	**/š/ [ʃ]**	**שׂ**
/ɬ/ = /ś/	**/š̲/**	**/s̲/**	**/ś/**	**/ś/ [s̲]**	**שׁ**

See מדן מאיר מאת לה תורת ההגה לתורת מקראה ed. Uzi Ornan Hebrew University in העברית והלשונות הקרבות 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 [θ̲] > [ʃ̲], thus merging with š=sh [ʃ̲]. This sound [θ̲] re-emerged with the spirantization of the *bgdkpt* consonants, which resulted in their dual realization as plosives or fricatives with [θ̲] being the fricative allophone of **ת** /t/;
- The case is similar with [ð̲] > [z̲] which thus merged with [z̲]. This sound re-emerged with the Spirantization of the *bgdkpt* consonants with [ð̲] being the fricative allophone of **ד** /d* /;
- Slightly different are the cases of /ġ/[ɣ̲] and /ḫ/[x̲]. Some time after 300 BCE /ġ/[ɣ̲] > /ᶜ/ [ʕ̲] and /ḫ/[x̲] > /ḥ/ [ħ̲] thus merging with the original /ᶜ/ and /ḥ/ 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/ [ʁ̲] is closer to [ġ]/[ɣ̲] than it is to the ancient /r/ [r̲].

Table 14

Biblical Hebrew Phonemes (Consonants) of Multiple Origin

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

Hebrew Letter	*EBHP* */EBHP/* *[EBHP]* *(c. 850-550 BCE)*	*Hebrew Example*	*PS* */PS/* *(c. 3000 BCE)*	*Reconstructed Classical Arabic*	*Reconstructed Aramaic*	*Reconstructed Ugaritic*
ז	/z̲/	זהב	/δ̲/	/δ̲/ ذ	/δ̲/ > /d/	/δ̲/ > /d/
ז		זון	/z̲/	/z̲/ ز	/z̲/	/z̲/
ח	/ẖ/	חרד	/ẖ/	/ẖ/ خ	/ẖ/	/ẖ/
ח	/ḥ/	חרב	/ḥ/	/ḥ/ ح	/ḥ/	/ḥ/
ע	/ʿ/ = /ʕ̲/	צעד	/ʿ/	/ʿ/ ع	/ʿ/	/ʿ/
ע	/ġ/ = /ɣ̲/	עזה	/ġ/	/ġ/ غ	/ġ/ > /ʿ/	/ġ/
צ	/ṣ/ = /sˁ/	קיץ	/ʟ̣/	/ẓ/ ظ	/ʟ̣/ > /ṭ/	/ʟ̣/ > /ġ/
צ		צער	/ṣ/	/ṣ/ ص	/ṣ/	/ṣ/
צ		ארץ	/ṣ/	/ḍ/ ض	/ʿ/	/ʟ̣/ > /ġ/

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 י or ו hence another opportunity for the development of homonyms.**
3. **The initial י in tri-literal roots were originally either י or ו.**
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] Jenssens1994, Knobloch 1995, Sáenz-Badillos pp. 80-86; Manuel 1995 pp. 130-167; Hoffman pp. 85-117; Ben-Ḥayyim 1954. As noted by Sáenz-Badillos (p. 80) **- (n.b. bolding my own)**

> The numerous Greek and Latin transcriptions of Hebrew names and other expressions, **which date from the third century BCE** to the fourth century CE, undoubtedly provide first-hand information.... Because we know far more about the phonology and pronunciation of Greek and Latin than of the Semitic languages, these transcriptions represent an invaluable witness to the Hebrew of this period. On the other hand, it has to be recognized as well that there are considerable difficulties involved. In the first place, the phonology of Greek and Latin is very different from that of Hebrew, and these languages do not possess graphemes that can exactly represent the sounds of Hebrew. And although we do not know what judgements were actually made when transcribing so different a language, the authors of the transcriptions would certainly have approached Hebrew from the phonological perspective of their own language. The variation of place and time is also a problem, as we cannot simply accept that BH, which had already ceased to be a living language, underwent a unified development in places as diverse as Alexandria and Palestine. **Neither do we know if the data afforded by the transcriptions correspond to the standard, more or less official, pronunciation of Hebrew in this period or to dialect or substandard forms**. On top of all these difficulties is the fact that the transcriptions have to be studied in manuscripts that are frequently late and deffective, presenting many variants ard corruptions in names that the copyists found completely alien.

[3] See publications of Revell; Sáenz-Badillos pp. 86-94; Manuel 1995 pp. 168-198. In most features this tradition is fairly close to the Tiberian - see Ben-Ḥayyim 1954. In the words of Sáenz-Badillos (p. 90)

> Revell ... argues that the Palestinian tradition represents a more developed and, therefore, later form of language than the Tiberian, although they share a common origin. In his view, the consistent (TH) use of

> different graphemes for the *a* and *e* vowels is a feature of an earlier period, which tended to disappear later on. Vowel changes within the Palestinian system, according to Revell, correspond to processes known from a less developed stage of the Tiberian tradition, and some times represent the endpoint of a process begun there. The Tiberian tradition has adopted a well-preserved, archaic, pronunciation, whereas the Palestinian is based on 'vulgar' biblical texts and expresses a less well-preserved form of the language that has been more affected by outside influences and colloquialisms. As a system of pointing, the Palestinian must have been created before, or in isolation from, the Tiberian.

I tend to agree with Revell on this. However, Sáenz-Badillos argues for the Palestinian pointing preceding the Tiberian Masoretic with presumably shared origins at some point in the past.

[4] See Yeivin; Sáenz-Badillos pp. 94-105; Manuel 1995 pp. 199-225. In most features this tradition is fairly close to the Tiberian - see Ben-Ḥayyim 1954. The pronunciation on which it is based must, of course, have originated in Palestine but have undergone a long period of semi-isolated development in southern Babylonia in a totally Eastern Aramaic speaking environment.

[5] Jenssens1994, Knobloch 1995, Sáenz-Badillos pp. 80-86**;** Manuel 1995 pp. 130-167 . As noted by Sáenz-Badillos (p. 80) **- (n.b. bolding my own)**

> The numerous Greek and Latin transcriptions of Hebrew names and other expressions, **which date from the third century BCE** to the fourth century CE, undoubtedly provide first-hand information.... Because we know far more about the phonology and pronunciation of Greek and Latin than of the Semitic languages, these transcriptions represent an invaluable witness to the Hebrew of this period. On the other hand, it has to be recognized as well that there are considerable difficulties involved. In the first place, the phonology of Greek and Latin is very different from that of Hebrew, and these languages do not possess graphemes that can exactly represent the sounds of Hebrew. And although we do not know what judgements were actually made when transcribing so different a language, the authors of the transcriptions would certainly have approached Hebrew from the phonological perspective of their own language. The variation of place and time is also a problem, as we cannot simply accept that BH, which had already ceased to be a living language, underwent a unified development in places as diverse as Alexandria and Palestine. **Neither do we know if the data afforded by the transcriptions correspond to the standard, more or less official, pronunciation of Hebrew in this period or to dialect or substandard forms**. On top of all these difficulties is the fact that the transcriptions have to be studied in manuscripts that are frequently late and defective, presenting many variants ard corruptions in names that the copyists found completely alien.

[6] An obvious example is that the 2ms. pronominal suffix is *k* where the MT has *kå* - see Ben-Ḥayyim 1954 - see *Tequ*. (Note contrary views on this in Andersen 1999).

[7] Kutscher 1982 §246 -

> As in the Septuagint, (in the Secunda) the short /i/ and /u/ of the Masoretic vocalization are transliterated by [e] and [o].... (T)his apparently parallels the situation in Mishnaic Hebrew. Therefore, it seems highly probable that this pronunciation represents the sub-standard, that is to say, the pronunciation that prevailed in the spoken Hebrew and Aramaic in Palestine at that time. But the original /i/ and /u/, as preserved for us by the Masoretes, survived in the standard pronunciation, i.e. in the reading of the bible text in synagogue. **Although the vocalization of the Masoretes is known to us only from a period about 600 years later that that of the (Secunda) transliterations, it faithfully preserved older forms**. This is proved by the fact that nearly all short [u]'s and a large number of the [i]'s in the Masoretic texts represent PS /u/'s and /i/'s. Therefore, of course they must reflect an earlier stage of the language..... (T)he Septuagint also sometimes reflects the substandard pronunciation rather than the standard.

Other Aramaizing features evidenced particularly from the Secunda:

> - 2ms. pronominal suffix frequently *k* where the MT has *kå* - see Ben-Ḥayyim 1954 - see *Tequ*. (Note contrary views on this in Andersen 1999).
>
> - 2ms. SC suffix frequently *t* where the MT has *tå* - see Ben-Ḥayyim 1954 - see *Tequ*. (Note contrary views on this in Andersen 1999).
>
> - the reversion *miqtal > maqtal* under Aramaic influence.

[8] See Qimron 1986; Kutscher 1971, Kutscher 1979, Sáenz-Badillos pp. 86-94; Manuel 1995 pp. 130-146.

[9] See Ben-Ḥayyim 1954.

[10] Concerning Jerome's Latin transcriptions James Barr writes (Barr 1967 p. 2) -

> Though Hexaplar Greek transcriptions are of great importance, this article is intended to clarify the position only of St Jerome. First, he is the most prolific single source of transcribed material. Secondly, he is a person about whose historical development a good deal is known, and this may be relevant to a study of the way in which he may have apprehended the phenomena of a language other than his own.* Thirdly, he provides not only transcriptions but also translations and commentaries which reveal the implications he drew from the Hebrew data as he perceived them, and he also makes express statements about the sounds of Hebrew and their relations to those of Latin and Greek.

After the sort of thorough and learned analysis we would expect from Barr, he concludes (pp. 35-36) -

> If this study has shown that Jerome's material can be interpreted in a sense which keeps it closer to the Masoretic structure of Hebrew than has recently been supposed, it may be observed in general confirmation:
>
> (a) In respect of date, Jerome is not so far removed from the beginnings of the Masoretic movement, in comparison with other sources for the early development of Hebrew.

(b) Some at least of his informants appear to have been authorities from the central Palestinian Jewish tradition (contrast the situations of special groups like the Samaritans or Egyptian Jewry).

(c) Jerome's translation, and at times his commentaries, often show striking agreements in general semantic effect with the Masoretic Text, in contrast with the LXX and even with the more highly regarded versions like Aquila.

The other chief question railing for a gumming up is that of the status of Jerome as a describer of the sounds of Hebrew in his time. Kahle writes that Jerome was in contact with learned Jews "and had carefully observed their methods of pronunciation". Now it is true that Jerome did listen to his teachers and that he knew the greater importance of sounded Hebrew over written Hebrew because only the former provided the full vowelling, which was semantically necessary to obtain the sense of the texts. He also was aware of a Jewish insistence on exact pronunciation. How far he himself succeeded in becoming acceptable in this regard we do not know. In any case we should not exaggerate the profundity of Jerome's analysis of Hebrew sounds. I cannot find much evidence that he had any intrinsic interest in phonological analysis. He may, of course, have known much more than he puts into his books. But the kind of information which Jerome actually furnishes about Hebrew sounds is very often obviously occasioned by endeavours on which he himself was engaged: the clarifying of groups of transcriptions of names, the combating of false etymologies, the explication of aspects of the text intelligible only on the basis of the Hebrew wording, and the justification of correct translations against erroneous traditional ones (particularly the LXX). Because these were his interests, it is not surprising that the phonetic information he provides is limited and rudimentary, and confined almost entirely to the aspects which caused a difficulty in transcription.

[11] Quoted frolm 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."

[12] Librairie du Liban, Beirut 1972.

[13] Mitchel 1993 p. 145.

[14] 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**/	[yɐ'**ko**:**l**]	/yå'**kol**/	[yɔ:'**xo**:**l**]	Vowel length and quality
Inf. constr.	/yu'**kult**/ > /y'**kult**/	[yə'**kʊlt**] / [yŭ'**kʊlt**] / [yŏ'**kǫlt**]	/yə'**kol**et/	[yə'**xo**:leθ]	Vowel quality

Suffix Conjugation *3rd person m.s.*	/ya'**kul**/	[yɐ'**kʊl**] or [yɐ'**kọḷl**]	/yå'**k̠ol**/	[yɔː'**xoːl**]	Vowel quality
3rd person m.p.	/ya'**ku**luː/	[yɐ'**kʊ**lu˙] or [yɐ'**kọ**ọlụ˙]	/yåk̠'**lu**/ (pausal /yɔ'**k̠o**lu/)	[yɔːxə'**luː**] (pausal [yɔː'**xoː**luː]	Stress in contextual form.
1st person	/ya'**kul**tiː/	[yɐ'**kʊl**ti˙] or [yɐ'**kọḷt**i˙]	/yå'**k̠ol**ti/	[yɔː'**xoːl**tiː]	Vowel length and quality

[15] 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 pronounciation 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 loose the accent. Take, e. g., the frequent word 'aal "he said". In fluent speech it almost always sounds ʾăl. Even if long vowels do not loose 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.**

[16] See Blau 2010 §3.5.13.

[17] Steiner 1997 pp. 147-150

[18] See also Blau 2010 §3.5.4.

[19] 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 *ʃəwa* or a *ḥaṭaṗ* 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:ɔ̄* and *e:ē > ɛ:ē* were operative. Vowels which were long in this period are marked in the Tiberian vocalization tradition by *qameṣ* and *ṣere.* It follows that the quality shifts had ceased operating before the end of the Masoretic period."

[20] Khan 1994 p. 134.

[21] **"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.

[22] Blau 2010 §4.2.5.2 and 4.3.8.7.4.4.

[23] Blau 2010 §3.5.7.4.6.

[24] See Blau 2010 §3.5.11.2, 3.5.13 and 4.3.8.3.2n.

[25] See *Phones and Phonemes* - http://www.houseofdavid.ca/anc_heb_6.htm#phone_phonym..

[26] Joüon-Muraoka 1991 §58a.

[27] See *Phones and Phonemes* - http://www.houseofdavid.ca/anc_heb_6.htm#phone_phonym..

[28] IN EBHP and LBHP THE JUSSIVE (PC_{jus}), COHORTATIVE (PC_{coh}), IMPERFECT (PC_{imp}) AND PRETERITE (PC_{pret_sim}/PC_{pretWC}) are, in some forms, distinguished by the placement of syllabic stress when not carrying object suffixes. See -
- http://www.adath-shalom.ca/history_of_hebrew3a.htm#indic_jus AND
- http://www.adath-shalom.ca/history_of_hebrew3a.htm#Prefix_Conjugation

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

1.there is no spirantization of the *bgdkpt* consonants - http://www.houseofdavid.ca/anc_heb_tequ.htm#bgdpt;

2. vowel qualities are outlined here - http://www.houseofdavid.ca/anc_heb_6.htm#ebhp_vow_qual;

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.

[30] Blau 1998 p. 32

[31] E.g. 2 Samuel 5:10.

[32] 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.

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

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

[35] "(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 A_1 and A_2 exist. Later

(stage II), another sound (B) shifts to A_1: B>A_1. Now (stage III) another sound change affects A_1, let us say: A_1>C. According to the view that sound changes only require reference to phonetic information, A_1 has to shift to C in all its occurrences, both in environments in which it alternated with A_2 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 A_1>C affects only the phoneme A_1 that arose from B, without changing A_1 that is the allophone of A_2. In this case, the speaker differentiates between the phoneme A_1 which is not restricted to a special environment, and the allophone A_1, 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 A_1 (the historical continuation of B) and the allophones A_1 and A_2.

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 *ǵ* and *ḫ* (which later shifted to *ʿ* 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 /*ǵ*/ and /*ḫ*/, the allophones [*g̲*] and [*k̲*] (of /*g*/ and /*k*/) also already existed, although the latter were practically identical to the former. Later, when the phonemes *ǵ* and *ḫ* shifted to *ʿ* and *ḥ*, the phonetically identical allophones were not affected.

This interpretation of the facts may be buttressed by Eastern Syriac and Modern Hebrew. In Eastern Syriac, *ḥ* has shifted to *ḫ*, and, as is usual, post-vocalic *b. g, d, k,, p, t* have been spirantized. Yet the coexistence of *ḫ* 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 *ḥ* 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

[36] See Khan 1997a.

[37] [x] is also transliterated as *kh* or *k.*

[38] 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-ʃaʿʔa/ "what's the time?" becomes [mahaʃaʿa] or [maaʃaʿa].

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

[39] For convenience, I sometimes use [ᶜ] in [EBHP] etc. transcriptions.

[40] also transliterated as ḳ

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

[42] this is very close to ġ [ɣ].

[43] For convenience, I sometimes use [ś] in [EBHP] etc. transcriptions.

[44] For convenience, I sometimes use [ʃ] in [EBHP] etc. transcriptions.

[45] As I find [ɛy] quite difficult to pronounce, I often end up with its most frequent equivalent in TH [ẹː] which is the same as [ɛy] in terms of syllable length.

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

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

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

[49] Note non-spirantization of the *bgdkpt* consonants

[50] Nb. ref. on [TH_{CST}].

[51] See Harris p. 36.

[52] See Harris pp. 40-41.