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Biblical Hebrew

Biblical Hebrew (עברית מקראית, ‏𐤊𐤍𐤐𐤓 (*Ivrit Miqra'it*) or לשון המקרא, ‏𐤋𐤍𐤒𐤓 (*Leshon ha-Miqra*)), also called **Classical Hebrew**, is an archaic form of the Hebrew language, a language in the Canaanite branch of Semitic languages spoken by the Israelites in the area known as the Land of Israel, roughly west of the Jordan River and east of the Mediterranean Sea. The term "Hebrew" (*ivrit*) was not used for the language in the Bible,^[1] which was referred to as שפת כנען (*sefat kena'an*, i.e. language of Canaan) or יהודית (*Yehudit*, i.e. Judaean),^[1] but the name was used in Ancient Greek and Mishnaic Hebrew texts.^[1]

The Hebrew language is attested epigraphically from about the 10th century BCE,^{[2][3]} and spoken Hebrew persisted through and beyond the Second Temple period, which ended in the siege of Jerusalem (70 CE). It eventually developed into Mishnaic Hebrew, spoken up until the fifth century CE.

Biblical Hebrew as recorded in the Hebrew Bible reflects various stages of the Hebrew language in its consonantal skeleton, as well as a vocalization system which was added in the Middle Ages by the Masoretes. There is also some evidence of regional dialectal variation, including differences between Biblical Hebrew as spoken in the northern Kingdom of Israel and in the southern Kingdom of Judah. The consonantal text was transmitted in manuscript form, and underwent redaction in the Second Temple period, but its earliest portions (parts of Amos, Isaiah, Hosea and Micah) can be dated to the late 8th to early 7th centuries BCE.

Biblical Hebrew has been written with a number of different writing systems. From around the 12th century BCE until the 6th century BCE the Hebrews used the Paleo-Hebrew alphabet. This was retained by the Samaritans, who use the descendent Samaritan script to this day. However, the Imperial Aramaic alphabet gradually displaced the Paleo-Hebrew alphabet after the exile to Babylon, and it became the source for the Modern Hebrew alphabet. All of these scripts were lacking letters to represent all of the sounds of Biblical Hebrew, although these sounds are reflected in Greek and Latin transcriptions/translations of the time. These scripts originally indicated only consonants, but certain letters, known by the Latin term *matres lectionis*, became increasingly used to mark vowels. In the Middle Ages, various systems of diacritics were developed to mark the vowels in Hebrew manuscripts; of these, only the Tiberian vocalization is still in wide use.

Biblical Hebrew possessed a series of emphatic consonants whose precise articulation is disputed, likely ejective or pharyngealized. Earlier Biblical Hebrew possessed three consonants which did not have their own letters in the writing system, but over time they merged with other consonants. The stop consonants developed fricative allophones under the influence of Aramaic, and these sounds eventually became marginally phonemic. The pharyngeal and glottal consonants underwent weakening in some regional dialects, as reflected in the modern Samaritan Hebrew reading tradition. The vowel system of Biblical Hebrew changed over time and is reflected differently in the ancient Greek and Latin transcriptions, medieval vocalization systems, and modern reading traditions.

Biblical Hebrew had a typical Semitic morphology with nonconcatenative morphology, arranging Semitic roots into patterns to form words. Biblical Hebrew distinguished two genders (masculine, feminine), three numbers (singular, plural, and uncommonly, dual). Verbs were marked for voice and mood, and had two conjugations which may have indicated aspect and/or tense (a matter of debate). The tense or aspect of verbs was also influenced by the conjugation ו, in the so-called waw-consecutive construction. Default word order was verb–subject–object, and verbs inflected for the number, gender, and person of their subject. Pronominal suffixes could be appended to verbs (to indicate object) or nouns (to indicate possession), and nouns had special construct states for use in possessive constructions.

Contents
Nomenclature
History
Classification
Eras
Dialects
Orthography
Phonology
Consonants
Vowels
Sound changes
Proto-Central-Semitic
Canaanite shift
Proto-Hebrew
Loss of final unstressed vowels
Short vowel lengthening (esp. pretonic), lowering
Reduction of short open stressed syllables
Pre-stress reduction of short vowel
Later developments
Stress
Grammar
Nouns and adjectives
Verbs
Word order
Tense and aspect
Sample text
Notes
References
Bibliography

Biblical Hebrew	
Classical Hebrew	
שפת כנען, יהודית, (לשון) עברית, לשון הקדש	
 <div>Siloam Inscription at Istanbul Archaeological Museum</div>	
Region	Kingdom of Israel (united monarchy) <p>Kingdom of Judah</p> Kingdom of Israel (Samaria) <p>Hasmonean dynasty</p> Global (as a liturgical language for Judaism)
Era	attested from the 10th century BCE; developed into Mishnaic Hebrew after the Jewish–Roman wars in the first century CE
Language family	Afro-Asiatic <ul style="list-style-type: none">Semitic <ul style="list-style-type: none">West Semitic <ul style="list-style-type: none">Central Semitic <ul style="list-style-type: none">Northwest Semitic <ul style="list-style-type: none">Canaanite <ul style="list-style-type: none">Biblical Hebrew
Writing system	Proto-Canaanite / Proto-Sinaitic Script <p>Paleo-Hebrew alphabet</p> Hebrew alphabet <p>Samaritan alphabet</p>
	Language codes
ISO 639-3	Either: <p>hbo – Ancient Hebrew</p> smp – Samaritan Hebrew
Linguist List	hbo (http://mul.titree.org/code/s/hbo) <p>smp (http://mul.titree.org/code/s/smp)</p>
Glottolog	anci1244 (http://glottolog.org/resource/lan/uuid/id/anci1244) <p>Ancient Hebrew</p> samal313 (http://glottolog.org/resource/lan/uuid/id/samal313) <p>Samaritan</p>

External links

Nomenclature

The earliest written sources refer to Biblical Hebrew as שפת כנען "the language of Canaan".^{[4][5]} The Hebrew Bible also calls the language יהודית "Judaeen, Judahite"^{[6][5]} In the Hellenistic period, Greek writings use the names *Hebraios*, *Hebraisti*^[7] and in Mishnaic Hebrew we find עברית 'Hebrew' and לשון עברית "Hebrew language".^{[8][5]} The origin of this term is obscure; suggested origins include the biblical Eber, the ethnonyms Ḥabiru, Ḥapiru, and Ḥapiru found in sources from Egypt and the near east, and a derivation from the root עבר "to pass" alluding to crossing over the Jordan River.^{[5][9]} Jews also began referring to Hebrew as לשון הקודש "the Holy Tongue" in Mishnaic Hebrew.^[5]

The term *Classical Hebrew* may include all pre-medieval dialects of Hebrew, including Mishnaic Hebrew, or it may be limited to Hebrew contemporaneous with the Hebrew Bible. The term *Biblical Hebrew* refers to pre-Mishnaic dialects (sometimes excluding Dead Sea Scroll Hebrew). The term *Biblical Hebrew* may or may not include extra-biblical texts, such as inscriptions (e.g. the Siloam inscription), and generally also includes later vocalization traditions for the Hebrew Bible's consonantal text, most commonly the early medieval Tiberian vocalization.

History

The archeological record for the prehistory of Biblical Hebrew is far more complete than the record of Biblical Hebrew itself.^[10] Early Northwest Semitic (ENWS) materials are attested from 2350 BCE to 1200 BCE, the end of the Bronze Age.^[10] The Northwest Semitic languages, including Hebrew, differentiated noticeably during the Iron Age (1200–540 BCE), although in its earliest stages Biblical Hebrew was not highly differentiated from Ugaritic and the Canaanite of the Amarna letters.^[11]

Hebrew developed during the latter half of the second millennium BCE between the Jordan and the Mediterranean Sea, an area known as Canaan.^[5] The Israelite tribes established a kingdom in Canaan at the beginning of the first millennium BCE, which later split into the kingdom of Israel in the north and the kingdom of Judah in the south after a disputed succession.^[12] The earliest Hebrew writing yet discovered was found at Khirbet Qeiyafa and dates to the 10th century BCE.^{[2][3]}

The kingdom of Israel was destroyed by the Assyrians in 722 BCE.^[12] The kingdom of Judah was conquered by the Babylonians in 586 BCE. The upper classes were exiled into the Babylonian captivity and Solomon's Temple was destroyed.^{[12][13]} Later the Persians made Judah a province and permitted Jewish exiles to return and rebuild the Temple.^[12] According to the *Gemara*, Hebrew of this period was similar to Imperial Aramaic;^{[14][15]} Hanina bar Hama said that God sent the exiled Jews to Babylon because "[the Babylonian] language is akin to the *Leshon Hakodesh*".^[16]

Aramaic became the common language in the north, in Galilee and Samaria.^[13] Hebrew remained in use in Judah; however the returning exiles brought back Aramaic influence, and Aramaic was used for communicating with other ethnic groups during the Persian period.^[13] Alexander conquered Judah in 332 BCE, beginning the period of Hellenistic (Greek) domination.^[13] During the Hellenistic period Judea became independent under the Hasmonean dynasty, but later the Romans ended their independence, making Herod the Great their governor.^[12] One Jewish revolt against the Romans led to the destruction of the Second Temple in 70 CE, and the second Bar Kokhba revolt in 132–135 led to a large departure of the Jewish population of Judea.^[12]

Biblical Hebrew after the Second Temple period evolved into Mishnaic Hebrew, which ceased being spoken and developed into a literary language around 200 CE.^[17] Hebrew continued to be used as a literary and liturgical language in the form of Medieval Hebrew, and Hebrew began a revival process in the 19th century, culminating in Modern Hebrew becoming the official language of Israel. Currently, Classical Hebrew is generally taught in public schools in Israel, and Biblical Hebrew forms are sometimes used in Modern Hebrew literature, much as archaic and biblical constructions are used in Modern English literature. Since Modern Hebrew contains many biblical elements, Biblical Hebrew is fairly intelligible to Modern Hebrew speakers.^[18]

The primary source of Biblical Hebrew material is the Hebrew Bible.^{[11][19]} Epigraphic materials from the area of Israelite territory are written in a form of Hebrew called Inscriptional Hebrew, although this is meagerly attested.^{[19][20]} According to Waltke & O'Connor, Inscriptional Hebrew "is not strikingly different from the Hebrew preserved in the Masoretic text."^[20] The damp climate of Israel caused the rapid deterioration of papyrus and parchment documents, in contrast to the dry environment of Egypt, and the survival of the Hebrew Bible may be attributed to scribal determination in preserving the text through copying.^[21] No manuscript of the Hebrew Bible dates to before 400 BCE, although two silver rolls (the Ketef Hinnom scrolls) from the seventh or sixth century BCE show a version of the Priestly Blessing.^{[21][22][23]} Vowel and cantillation marks were added to the older consonantal layer of the Bible between 600 CE and the beginning of the 10th century.^{[24][nb 1]} The scholars who preserved the pronunciation of the Bibles were known as the Masoretes. The most well-preserved system that was developed, and the only one still in religious use, is the Tiberian vocalization, but both Babylonian and Palestinian vocalizations are also attested.^[24] The Palestinian system was preserved mainly in piyyutim, which contain biblical quotations.^[24]

Classification

Biblical Hebrew is a Northwest Semitic language from the Canaanite subgroup.^{[28][29]}

As Biblical Hebrew evolved from the Proto-Semitic language it underwent a number of consonantal mergers parallel with those in other Canaanite languages.^{[25][30][31][nb 2]} There is no evidence that these mergers occurred after the adaptation of the Hebrew alphabet.^{[32][nb 3]}

As a Northwest Semitic language, Hebrew shows the shift of initial */w/ to /j/, a similar independent pronoun system to the other Northwest Semitic languages (with third person pronouns never containing /j/), some archaic forms, such as /nahnu/ 'we', first person singular pronominal suffix -i or -ya, and /n/ commonly preceding pronominal suffixes.^[30] Case endings are found in Northwest Semitic languages in the second millennium BCE, but disappear almost totally afterwards.^[30] Mimimation is absent in singular nouns, but is often retained in the plural, as in Hebrew.^[30]

The Northwest Semitic languages formed a dialect continuum in the Iron Age (1200–540 BCE), with Phoenician and Aramaic on each extreme.^{[30][33]} Hebrew is classed with Phoenician in the Canaanite subgroup, which also includes Ammonite, Edomite, and Moabite.^[30] Moabite might be considered a Hebrew dialect, though it possessed distinctive Aramaic features.^{[33][34]} Although Ugaritic shows a large degree of affinity to Hebrew in poetic structure, vocabulary, and some grammar, it lacks some Canaanite features (like the Canaanite shift and the shift */ð/ > /z/), and its similarities are more likely a result of either contact or preserved archaism.^[35]

Hebrew underwent the Canaanite shift, where Proto-Semitic /aː/ tended to shift to /oː/, perhaps when stressed.^{[30][36]} Hebrew also shares with the Canaanite languages



Coin issued during the Bar Kokhba revolt. The Paleo-Hebrew text reads שמעון לחרות ירושלים "Simeon" on the front and "for the freedom of Jerusalem" on the back.

Reflexes of Proto-Semitic consonants in Hebrew^{[25][26][27]}

Proto-Semitic	IPA	Hebrew	Aramaic	Arabic	Examples			
					Hebrew	Aramaic	Arabic	meaning
* ḏ	* /ð/ ~ /dð/	/z/ ז	/d/ ד	/ð/ ذ	זהב	דהב	ذهب	'gold'
* z	* /z/ ~ /dz/	/z/ ז	/z/ ז	/z/ ز	מאזנים	מאזנין	موازين	'scale'
* š	* /ʃ/ ~ /s/	/ʃ/ ש	/ʃ/ ש	/s/ س	שנה	שנה	سنة	'year'
* ʕ	* /θ/ ~ /tθ/	/θ/ ת	/θ/ ת	/θ/ ث	שלושה	תלתה	ثلاثة	'three'
* ʔ	* /ʕ/ ~ /tʕ/	/ʕ/ ע	/ʕ/ ט	/ʕ/ ظ	צל	טלה	ظل	'shadow'
* ʕ	* /ʕ/ ~ /tʕ/	/ʕ/ ע	/ʕ/ ע	/dʕ/ ض	ארץ	ארע	أرض	'land'
* ḥ	* /s/ ~ /ts/	/s/ צ	/s/ צ	/s/ ص	צרח	צרח	صرخ	'shout'

system wrote a superscript ◌̣ above the ◌̣ to indicate it took the value /s/, while the Masoretes added the *shin* dot to distinguish between the two varieties of the letter.^{[70][71]}

The original Hebrew alphabet consisted only of consonants, but gradually the letters א, ה, ו, י, also became used to indicate vowels, known as *matres lectionis* when used in this function.^{[64][72]} It is thought that this was a product of phonetic development: for instance, *bayt ('house') shifted to בית in construct state but retained its spelling.^[73] While no examples of early Hebrew orthography have been found, older Phoenician and Moabite texts show how First Temple period Hebrew would have been written.^[72] Phoenician inscriptions from the 10th century BCE do not indicate matres lectiones in the middle or the end of a word, for example לפני and י for later לפני and יה, similarly to the Hebrew Gezer Calendar, which has for instance שערים for שערם and possibly ירהו for ירה.^[72] Matres lectionis were later added word-finally, for instance the Mesha inscription has בנתי בללה, בנתי for later בנייה; however at this stage they were not yet used word-medially, compare Siloam inscription יהה versus אש (for later אשה).^[72] The relative terms *defective* and *full/plene* are used to refer to alternative spellings of a word with less or more matres lectionis, respectively.^{[72][nb 8]}

The Hebrew Bible was presumably originally written in a more defective orthography than found in any of the texts known today.^[72] Of the extant textual witnesses of the Hebrew Bible, the Masoretic text is generally the most conservative in its use of matres lectionis, with the Samaritan Pentateuch and its forebearers being more full and the Qumran tradition showing the most liberal use of vowel letters.^[74] The Masoretic text mostly uses vowel letters for long vowels, showing the tendency to mark all long vowels except for word-internal /aː/.^{[73][nb 9]} In the Qumran tradition, back vowels are usually represented by ה) whether short or long.^{[75][76]} ה) is generally used for both long [iː] and [eː] (אבילים, מיה), and final [iː] is often written as -א in analogy to words like היא, הביא, e.g. כיא, sometimes מיה.^{[75][76]} ה) is found finally in forms like חוטה (Tiberian חוטה) קורה (Tiberian קורה) while (א) may be used for an a-quality vowel in final position (e.g. עליה) and in medial position (e.g. אהום).^[75] Pre-Samaritan and Samaritan texts show full spellings in many categories (e.g. כחי vs. Masoretic כחי in Genesis 49:3) but only rarely show full spelling of the Qumran type.^[77]

In general the vowels of Biblical Hebrew were not indicated in the original text, but various sources attest them at various stages of development. Greek and Latin transcriptions of words from the biblical text provide early evidence of the nature of Biblical Hebrew vowels. In particular, there is evidence from the rendering of proper nouns in the Koine Greek Septuagint (3rd–2nd centuries BCE^[78]) and the Greek alphabet transcription of the Hebrew biblical text contained in the Secunda (3rd century CE, likely a copy of a preexisting text from before 100 BCE^[nb 10]). In the 7th and 8th centuries CE various systems of vocalic notation were developed to indicate vowels in the biblical text.^[79] The most prominent, best preserved, and the only system still in use, is the Tiberian vocalization system, created by scholars known as Masoretes around 850 CE.^{[24][80]} There are also various extant manuscripts making use of less common vocalization systems (Babylonian and Palestinian), known as *superlinear vocalizations* because their vocalization marks are placed above the letters.^{[24][80][nb 11][nb 12]} In addition, the Samaritan reading tradition is independent of these systems, and was occasionally notated with a separate vocalization system.^{[80][81][nb 13]} These systems often record vowels at different stages of historical development; for example, the name of the Judge Samson is recorded in Greek as Σαμψών *Sampsōn* with the first vowel as /a/, while Tiberian שמשון /ʃimʃon/ with /i/ shows the effect of the law of attenuation whereby /a/ in closed unstressed syllables became /i/.^[82] All of these systems together are used to reconstruct the original vocalization of Biblical Hebrew.

At an early stage, in documents written in the paleo-Hebrew script, words were divided by short vertical lines and later by dots, as reflected by the Mesha Stone, the Siloam inscription, the Ophel inscription, and paleo-Hebrew script documents from Qumran.^[83] Word division was not used in Phoenician inscriptions; however, there is not direct evidence for biblical texts being written without word division, as suggested by Nahmanides in his introduction to the Torah.^[83] Word division using spaces was commonly used from the beginning of the 7th century BCE for documents in the Aramaic script.^[83] In addition to marking vowels, the Tiberian system also uses cantillation marks, which serve to mark word stress, semantic structure, and the musical motifs used in formal recitation of the text.^{[84][85]}

While the Tiberian, Babylonian, and Palestinian reading traditions are extinct, various other systems of pronunciation have evolved over time, notably the Yemenite, Sephardi, Ashkenazi, and Samaritan traditions. Modern Hebrew pronunciation is also used by some to read biblical texts. The modern reading traditions do not stem solely from the Tiberian system; for instance, the Sephardic tradition's distinction between qamatz gadol and qatan is pre-Tiberian.^[86] However, the only orthographic system used to mark vowels is the Tiberian vocalization.

Phonology

The phonology as reconstructed for Biblical Hebrew is as follows:

Consonants

Consonants lost and gained during the lifetime of Biblical Hebrew are color-coded respectively.

Name	Paleo-Hebrew	Block	Samaritan	Phonetic value (Pre-Exilic) ^{[56][57]} (IPA)
Aleph	𐤀	א	𐤀	[ʔ]
Beth	𐤁	ב	𐤁	[b], [β]
Gimel	𐤂	ג	𐤂	[g], [ɣ]
Daleth	𐤃	ד	𐤃	[d], [ð]
He	𐤄	ה	𐤄	[h]
Waw	𐤅	ו	𐤅	[w]
Zayin	𐤆	ז	𐤆	[z]
Heth	𐤇	ח	𐤇	[ħ]
Teth	𐤈	ט	𐤈	[tʰ]
Yodh	𐤉	י	𐤉	[j]
Kaph	𐤊	כ, ך	𐤊	[k], [x]
Lamedh	𐤋	ל	𐤋	[l]
Mem	𐤌	מ, ם	𐤌	[m]
Nun	𐤍	נ, ן	𐤍	[n]
Samekh	𐤎	ס	𐤎	[s]
Ayin	𐤏	ע	𐤏	[ʕ], [ɛ] ^{[58][59]}
Pe	𐤐	פ, ף	𐤐	[p], [pʰ]
Tsade	𐤑	צ, ץ	𐤑	[sʰ]
Qoph	𐤒	ק	𐤒	[kʰ]
Resh	𐤓	ר	𐤓	[r]
Shin	𐤔	ש	𐤔	[ʃ], [ʃ̥]
Taw	𐤕	ת	𐤕	[t], [θ]

Biblical Hebrew consonants^{[58][59]}

	Labial	Dental/Alveolar		Post-alveolar	Palatal	Velar	Uvular	Pharyngeal	Glottal
		Central	Lateral						
Nasals	m	n							
Stops	voiceless	p	t			k	q		ʔ
	voiced	b	d			g			
	emphatic		ʔ ^{[58][59][87]}						
Fricatives	voiceless	φ	θ	s	ʃ	χ ^{[58][59]}	χ ^[58]	ħ	h
	voiced	β	ð	z		ʁ ^{[58][59]}	ʁ ^[58]	ç	
	emphatic		ʕ ^{[58][87]}						
Approximants	w		l		j				
Trill		r							

The phonetic nature of some Biblical Hebrew consonants is disputed. The so-called "emphatics" were likely pharyngealized, but possibly ejective or velarized.^{[88][89]} The pharyngealization of emphatic consonants is viewed as a Central Semitic innovation.^[90]

Some argue that /s, z, sʰ/ were affricated (/ts, dz, tsʰ/)^[88] but, Egyptian starts using s in place of earlier ʔ to represent Canaanite s around 1000 BC. It is likely that Canaanite was already dialectally split by that time and the northern, Early Phoenician dialect that the Greeks were in contact with could have preserved the affricate pronunciation until c. 800 BC at least, unlike the more southern Canaanite dialects (like Hebrew) that the Egyptians were in contact with, so that there is no contradiction.

Originally, the Hebrew letters (ת) and (ע) each represented two possible phonemes, velar and pharyngeal, with the distinction unmarked in Hebrew orthography. However the uvular phonemes /χ/ ת and /ʁ/ ע merged with their pharyngeal counterparts /ħ/ ת and /ç/ ע respectively c. 200 BCE.

Proto-Semitic	IPA	Hebrew	Aramaic	Arabic	Examples			
					Hebrew	Aramaic	Arabic	meaning
*ħ	*ħ/	*ħ/ ת	*ħ/ ת	*ħ/ ح	חמשה צרח	חמשה צרח	خمسة صرخ	'five' 'shout'
*ħ	*ħ/			*ħ/ ح	מלח	מלח	ملح	'salt'
*ğ	*ğ/	*ğ/ ע	*ğ/ ע	*ğ/ غ	עורב מערב	ערב מערב	غراب غرب	'raven' 'west'
*ʕ	*ʕ/			*ʕ/ ع	עבד	עבד	عبد	'slave'

This is observed by noting that these phonemes are distinguished consistently in the Septuagint of the Pentateuch (e.g. Isaac יצחק = Ἰσαάκ versus Rachel רחל = Ραχήλ), but this becomes more sporadic in later books and is generally absent in Ezra and Nehemiah.^{[91][92]}

The phoneme /l/, is also not directly indicated by Hebrew orthography but is clearly attested by later developments: It is written with (ל) (also used for /r/) but later merged with /s/ (normally indicated with (ס)). As a result, three etymologically distinct phonemes can be distinguished through a combination of spelling and pronunciation: /s/ written (ס), /r/ written (ל), and /l/ (pronounced /l/ but written (ל)). The specific pronunciation of /l/ as [l] is based on comparative evidence (/l/ is the corresponding Proto-Semitic phoneme and still attested in Modern South Arabian languages^[71] as well as early borrowings (e.g. *balsam* < Greek *balsamon* < Hebrew *bašam*). /l/ began merging with /s/ in Late Biblical Hebrew, as indicated by interchange of orthographic (ל) and (ס), possibly under the influence of Aramaic, and this became the rule in Mishnaic Hebrew.^{[58][89]} In all Jewish reading traditions /l/ and /s/ have merged completely; however in Samaritan Hebrew /l/ has instead merged with /r/.^[58]

Allophonic spirantization of /b g d k p t/ to [v ɣ ð x f θ] (known as begadkefat spirantization) developed sometime during the lifetime of Biblical Hebrew under the influence of Aramaic.^[nb 14] This probably happened after the original Old Aramaic phonemes /θ, ð/ disappeared in the 7th century BCE,^[93] and most likely occurred after the loss of Hebrew /χ, ʁ/ c. 200 BCE.^[nb 15] It is known to have occurred in Hebrew by the 2nd century CE.^[94] After a certain point this alternation became contrastive in word-medial and final position (though bearing low functional load), but in word-initial position they remained allophonic.^[95] This is evidenced both by the Tiberian vocalization's consistent use of word-initial spirants after a vowel in sandhi, as well as Rabbi Saadia Gaon's attestation to the use of this alternation in Tiberian Aramaic at the beginning of the 10th century CE.^[95]

The Dead Sea scrolls show evidence of confusion of the phonemes /h ʕ h ʔ/, e.g. חמר *ħmr* for Masoretic אָמַר /ʔɔː mar/ 'he said'.^[96] However the testimony of Jerome indicates that this was a regionalism and not universal.^[54] Confusion of gutturals was also attested in later Mishnaic Hebrew and Aramaic (see Eruvin 53b). In Samaritan Hebrew, /ʔ h h ʕ/ have generally all merged, either into /ʔ/, a glide /w/ or /j/, or by vanishing completely (often creating a long vowel), except that original /ʕ h/ sometimes have reflex /ʕ/ before /a v/.^[55]

Geminate consonants are phonemically contrastive in Biblical Hebrew. In the Secunda /w j z/ are never geminate.^[97] In the Tiberian tradition /h ʕ h ʔ r/ cannot be geminate; historically first /r ʔ/ degeminated, followed by /ʕ/, /h/, and finally /h/, as evidenced by changes in the quality of the preceding vowel.^{[98][nb 16]}

Vowels

The vowel system of Biblical Hebrew has changed considerably over time. The following vowels are those reconstructed for the earliest stage of Hebrew, those attested by the Secunda, those of the various vocalization traditions (Tiberian and varieties of Babylonian and Palestinian), and those of the Samaritan tradition, with vowels absent in some traditions color-coded.

Proto-Hebrew ^[99]	Biblical Hebrew ^[99]	Secunda Hebrew ^[100]	Tiberian, Babylonian, and Palestinian Hebrew ^{[101][102][103]}	Samaritan Hebrew ^[104]
------------------------------	---------------------------------	---------------------------------	-------------------------------------------------------------------------	-----------------------------------

	Front	Back
Close	i i:	u u:
Close-mid	(e:)	o:
Open	a a:	

	Front	Back
Close	i ¹ i:	u ² u:
Close-mid	e: ³	o:
Open	a ⁴ a: ⁵	

	Front	Back
Close	i:	u:
Close-mid	e e:	o o:
Open	a ¹ a:	
Reduced	ə	

	Front	Back
Close	i	u
Close-mid	e	o
Open-mid	ɛ ¹	ɔ ²
Open	a	
Reduced	ä ³ ɔ̄ ³ (ɛ̄) ³ ə ³	

	Front	Back
Close	i i:	u u:
Mid	e e: (o) ¹	
Open	a a:	ɔ ɔ:
Reduced	(ə) ²	

possible allophones

1. /i/ - [i] [e/e]
2. /u/ - [u] [o] [ɔ] [u]
3. /e:/ - [e:] [ɛ:]
4. /a/ - [a] [ə]
5. /a:/ - [a:] [ə]

1. possibly pronounced [æ], as the orthography alternates (א) and (ע)^[105]

1. merges with /e/ in the Palestinian tradition and with /a/ in the Babylonian tradition^{[106][107][nb 17][nb 18]}
2. merges with /a/ or /o/ in the Palestinian tradition^{[107][nb 17][108]}
3. The Tiberian tradition has the reduced vowel phonemes /ä ɔ̄/ and marginal /ɛ̄/, while Palestinian and Babylonian have one, /ə/ (pronounced as [ɛ] in later Palestinian Hebrew)

1. /u/ and /o/ only contrast in open post-tonic syllables, e.g. ידו /jɛdu/ ('his hand') ידיו /jɛdu/ ('his hands'), where /o/ stems from a contracted diphthong.^[109] In other environments, /o/ appears in closed syllables and /u/ in open syllables, e.g. דור /dor/ דורות /durot/^[109]
2. results from both /i/ and /e/ in closed post-tonic syllables^[110]

Sound changes

The following sections present the vowel changes that Biblical Hebrew underwent, in approximate chronological order.

Proto-Central-Semitic

Proto-Semitic is the ancestral language of all the Semitic languages, and in traditional reconstructions possessed 29 consonants; 6 monophthong vowels, consisting of three qualities and two lengths, */a a: i i: u u:/, in which the long vowels occurred only in open syllables; and two diphthongs */aj aw/.^{[111][112]} The stress system of Proto-Semitic is unknown but it is commonly described as being much like the system of Classical Latin or the modern pronunciation of Classical Arabic: If the penultimate (second last) syllable is light (has a short vowel followed by a single consonant), stress goes on the antepenult (third to last); otherwise, it goes on the penult.

Various changes, mostly in morphology, took place between Proto-Semitic and Proto-Central-Semitic, the language at the root of the Central Semitic languages. The phonemic system was inherited essentially unchanged, but the **emphatic consonants** may have changed their realization in Central Semitic from **ejectives** to **pharyngealized consonants**.

The morphology of Proto-Central-Semitic shows significant changes compared with Proto-Semitic, especially in its verbs, and is much like in Classical Arabic. Nouns in the singular were usually declined in three cases: /-u/ (nominative), /-a/ (accusative) or /-i/ (genitive). In some circumstances (but never in the construct state), nouns also took a final nasal after the case ending: *nunation* (final /-n/) occurred in some languages, *mimation* (final /-m/) in others. The original meaning of this marker is uncertain. In Classical Arabic, final /-n/ on nouns indicates indefiniteness and disappears when the noun is preceded by a definite article or otherwise becomes definite in meaning. In other languages, final /-n/ may be present whenever a noun is not in the construct state. Old Canaanite had mimation, of uncertain meaning, in an occurrence of the word *urušalemim* (Jerusalem) as given in an Egyptian transcription.^[113]

Broken plural forms in Arabic are declined like singulars, and often take singular agreement as well. Dual and "strong plural" forms use endings with a long vowel or diphthong, declined in only two cases: nominative and objective (combination accusative/genitive), with the objective form often becoming the default one after the loss of case endings. Both Hebrew and Arabic had a special form of nunation/mimation that co-occurred with the dual and masculine sound plural endings whenever the noun was not in the construct state. The endings were evidently felt as an inherent part of the ending and, as a result, are still used. Examples are Arabic strong masculine plural *-ūna* (nominative), *-īna* (objective), and dual endings *-āni* (nominative), *-ayni* (objective); corresponding construct-state endings are *-ū*, *-ī* (strong masculine plural), *-ā*, *-ay* (dual). (The strong feminine endings in Classical Arabic are *-ātu* nominative, *-āti* objective, marked with a singular-style *-n* nunation in the indefinite state only.)

Hebrew has almost lost the broken plural (if it ever had it), and any vestigial forms that may remain have been extended with the strong plural endings. The dual and strong plural endings were likely much like the Arabic forms given above at one point, with only the objective-case forms ultimately surviving. For example, dual *-ayim* is probably from **-aymi* with an extended mimation ending (cf. Arabic *-ayni* above), while dual construct *-ē* is from **-ay* without mimation. Similarly, *-īm* < **-īma*, *-ōt* < **-āti*. (Note that expected plural construct state **-ī* was replaced by dual *-ē*.)

Feminine nouns at this point ended in a suffix /-at-/ or /-t-/ and took normal case endings. When the ending /-at-/ became final because of loss or non-presence of the case ending, both Hebrew and Arabic show a later shift to /-ah/ and then /-a:/. The final /t/ consonant therefore is silent in the absolute state, but becomes /t/ again in the construct state and when these words take suffixes, e.g. תורה /to:ra:/ "law" becomes תורה /to:rat/ "law of", and תורתך /to:ra:təxə:/ "your law", etc. (This is equivalent to the Arabic letter Tā' Marbūṭah ّ, a modified final form of the letter He ھ which indicates this same phoneme shifting, and only its pronunciation varies between construct and absolute state.)

Canaanite shift

Hebrew shows the Canaanite shift whereby */a:/ often shifted to /o:/; the conditions of this shift are disputed.^{[36][nb 19]} This shift had occurred by the 14th century BCE, as demonstrated by its presence in the Amarna letters (c. 1365 BCE).^{[114][115]}

Proto-Hebrew

As a result of the Canaanite shift, the Proto-Hebrew vowel system is reconstructed as */a a: o i i: u u:/ (and possibly rare */e:/).^[99] Furthermore, stress at this point appears to have shifted so that it was consistently on the penultimate (next to last) syllable, and was still non-phonemic. The predominant final stress of Biblical Hebrew was a result of loss of final unstressed vowels and a shift away from remaining open syllables (see below).

Loss of final unstressed vowels

Final unstressed short vowels dropped out in most words, making it possible for long vowels to occur in closed syllables. This appears to have proceeded in two steps:

1. Final short mood, etc. markers dropped in verbal forms.
2. Final short case markers dropped in nominal forms.

Vowel lengthening in stressed, open syllables occurred *between* the two steps, with the result that short vowels at the beginning of a -VCV ending lengthened in nouns but not verbs. This is most noticeable with short /a/: e.g. **kataba* ('he wrote') > /kəˈθav/ but **dabara* ('word' acc.) > /dɔˈvɔr/.

The dropping of final short vowels in verb forms tended to erase mood distinctions, but also some gender distinctions; however, unexpected vowel lengthening occurred in many situations to preserve the distinctions. For example, in the suffix conjugation, first-singular **-tu* appears to have been remade into **-tī* already by Proto-Hebrew on the basis of possessive *-ī* (likewise first singular personal pronoun **ʔana* became **ʔanī*).

Similarly, in the second-singular, inherited **-ta -ti* competed with lengthened **-tā -tī* for masculine and feminine forms. The expected result would be *-t* or *-tā* for masculine, *-t* or *-tī* for feminine, and in fact both variants of both forms are found in the Bible (with *-h* marking the long *-ā* and *-y* marking the long *-ī*). The situation appears to have been quite fluid for several centuries, with *-t* and *-tā/tī* forms found in competition both in writing and in speech (cf. the *Secunda* (Hexapla) of Origen, which records both pronunciations, although quite often in disagreement with the written form as passed down to us). Ultimately, writing stabilized on the shorter *-t* for both genders, while speech chose feminine *-t* but masculine *-tā*. This is the reason for the unexpected *qamatz* vowel written under the final letter of such words.

The exact same process affected possessive **-ka* ('your' masc. sing.) and **-ki* ('your' fem. sing.), and personal pronouns **ʔanta*, **ʔanti*, with the same split into shorter and longer forms and the same ultimate resolution.

Short vowel lengthening (esp. pretonic), lowering

The short vowels **/a i u/* tended to lengthen in various positions.

- First, short vowels lengthened in an open syllable in pretonic position (i.e. directly before the stressed syllable).
- Later, short vowels lengthened in stressed open syllables.^{[116][nb 20]}

In the process of lengthening, the high vowels were lowered. In the *Secunda*, the lengthened reflexes of **/a i u/* are */a e o/*; when kept short they generally have reflexes */a e o/*.^{[117][nb 21][nb 22]}

Reduction of short open stressed syllables

Stressed *open syllables* with a short vowel (i.e. syllables consisting of a short vowel followed by a consonant and another vowel) had the vowel reduced to */ə/* and the stressed moved one syllable later in the word (usually to the last syllable of the word).^[118] Stress was originally penultimate and loss of final short vowels made many words have final stress. However, words whose final syllable had a long vowel or ended with a consonant were unaffected and still had penultimate stress at this point. This change did not happen in pausal position, where the penultimate stress is preserved, and vowel lengthening rather than reduction occurs.

The previous three changes occurred in a complex, interlocking fashion:

1. Shift of stress to be universally penultimate.
2. Loss of final short vowels in verbs, pre-stress lengthening in open syllables. Pre-stress lengthening/lowering becomes a *surface filter* that remains as a rule in the language, automatically affected any new short vowels in open syllables as they appear (but ultra-short vowels are unaffected).
3. Stress movement from light syllable to following heavy syllable when not in *pausa*, with newly unstressed light syllable reducing the schwa.
4. Tonic lengthening/lowering in open syllables.
5. Loss of final short vowels in nouns.

Examples:

Possible derivation of some nominal/verbal forms

	'killing/killer (masc. sg.)'	'he killed'	'she killed'	'they killed'	'they killed' (pausa)	'you (masc. sg.) kill'	'you (fem. sg.) kill'
Proto-Central-Semitic	*qa.ʔilu	*ʔaʔala	*ʔaʔalat	*ʔaʔalu:	*ʔaʔalu:	*ʔaʔtulu	*ʔaʔtu li:(na)
Pre-Hebrew	*qa.ʔilu	*ʔaʔala	*ʔaʔalat	*ʔaʔalu:	*ʔaʔalu:	*ʔaʔtulu	*ʔaʔtuli:
Canaanite shift	*qo.ʔilu	—	—	—	—	—	—
Penultimate stress	*qo.ʔilu	*qa.ʔala	*qa.ʔalat	*qa.ʔalu:	*qa.ʔalu:	*taq.ʔulu	*taq.ʔuli:
Final short vowel loss (verb)	—	*qa.ʔal	—	—	—	*taq.ʔul	—
Pre-tonic lengthening	—	*qa.ʔal	*qa.ʔalat	*qa.ʔalu:	*qa.ʔalu:	—	—
Stress shift / de-stressed reduction	—	—	*qa.ʔə.ʔal	*qa.ʔə.ʔalu:	—	—	*taqʔə.ʔli:
Tonic lengthening/lowering	*qo.ʔe.lu	—	—	—	*qa.ʔa.lu:	—	—
Final short vowel loss (noun)	*qo.ʔe.l	—	—	—	—	—	—
Feminine /-at/ > /a:/	—	—	*qa.ʔə.ʔa:	—	—	—	—
Short vowel lowering	—	—	—	—	—	*taq.ʔol	—
Law of attenuation	—	—	—	—	—	*tiq.ʔol	*tiqʔə.ʔli:
Tiberian /a:/ > /ɔ:/	*qo.ʔe.l	*qo.ʔal	*qo.ʔə.ʔo:	*qo.ʔə.ʔu:	*qo.ʔo.ʔu:	—	—
Loss of phonemic vowel length; attested Tiberian form	qo.ʔel	qo.ʔal	qoʔə.ʔo	qoʔə.ʔu	qo.ʔolu	tiq.ʔol	tiqʔə.ʔli

Note that many, perhaps most, Hebrew words with a schwa directly before a final stress are due to this stress shift.

This sound change shifted many more originally penultimate-stressed words to have final stress. The above changes can be seen to divide words into a number of main classes based on stress and syllable properties:

1. Proto-Hebrew words with an open penult and short-vowel ending: Become final-stressed (e.g. /qo.ʔal/ ('he killed') < PHeb. /qa.ʔala/).
2. Proto-Hebrew words with a closed penult and short-vowel ending: Become penultimate due to segholate rule (e.g. /ˈmɛlex/ ('king') < */malku/).
3. Proto-Hebrew words with an open short penult and longer ending: Become final-stressed due to stress shift (e.g. /qoʔə.ʔu/ ('they killed') < PHeb. /qa.ʔalu:/).
4. Proto-Hebrew words with a closed penult and longer ending: Remain penultimate (e.g. /qo.ʔalti/ ('I killed') < PHeb. /qa.ʔalti:/).
5. Proto-Hebrew words with an open long penult and longer ending: ???

Pre-stress reduction of short vowel

*/a i u/ were reduced to /ə/ in the second syllable before the stress,^[100] and occasionally reduced rather than lengthened in pretonic position, especially when initial (e.g. שְׁמוֹ = שְׁמוֹ /ʃəˈmo/ 'his name').^{[119][nb 23]} Thus the vowel system of the Secunda was /a e i o u ə/.^[100]

Later developments

The later Jewish traditions (Tiberian, Babylonian, Palestinian) show similar vowel developments. By the Tiberian time, all short vowels in stressed syllables and open pretonic lengthened, making vowel length allophonic.^{[120][nb 24][121]} Vowels in open or stressed syllables had allophonic length (e.g. /a/ in יְרַחֵם /jəˈraːˈheːm/ ('he will have mercy') < previously short [jəˈraːˈheːm] < [jəˈraːhˌeːm] by Tiberian degemination of /h/ < PSem */juraħˈhimu/).^{[121][nb 25]} The Babylonian and Palestinian vocalizations systems also do not mark vowel length.^{[86][107][122]} In the Tiberian and Babylonian systems, */a/ and lengthened */a/ become the back vowel /ɔ/.^{[107][123]} In unaccented closed syllables, */i u/ become /ɛ-ɔ/ (Tiberian), /a-i u/ (Babylonian), or /e-i ɔ-u/ (Palestinian) – generally becoming the second vowel before geminates (e.g. לָבִי) and the first otherwise.^{[107][108][123][124][nb 26]} In the Tiberian tradition pretonic vowels are reduced more commonly than in the Secunda. It does not occur for */a/, but is occasional for */i/ (e.g. מַסְמְרִים /masˈmɪrɪm/ 'nails' < */masmɪrɪm/), and is common for */u/ (e.g. רְחוּב /rəˈhuːb/ 'open place' < */ruħaːb/).^{[119][125]} In Tiberian Hebrew pretonic */u/ is most commonly preserved by geminating the following consonant, e.g. אַדְמִים /ədumˈmim/ ('red' pl.) (cf. דָּם /dām/ 'red' sg.); this pretonic gemination is also found in some forms with other vowels like אֲסִיר־אֲסִיר /asˈsir-/ ('prisoner').^[126]

The Babylonian and Palestinian systems have only one reduced vowel phoneme /ə/ like the Secunda, though in Palestinian Hebrew it developed the pronunciation [ɛ].^{[100][107][127]} However the Tiberian tradition possesses three reduced vowels /ä ɔ̄ ɛ̄/ of which /ɛ̄/ has questionable phonemicity.^{[128][129][nb 27]} /ä/ under a non-guttural letter was pronounced as an ultrashort copy of the following vowel before a guttural, e.g. יִקְרָהּ /uʁqəˈʁə/, and as [ɪ] preceding /j/, e.g. תְּדַמֶּינִי [θäðamːiː juni], but was always pronounced as [ä] under gutturals, e.g. שָׁהָרְהִי /ʃəˈhəːrəˈhi/.^{[130][131]} When reduced, etymological */a i u/ become /ä ɛ̄-ä ɔ̄/ under gutturals (e.g. אָמַרְתָּ /ʔäˈmɪrːtə/ 'you [mp.] said' cf. אָמַר 'he said'), and generally /ä/ under non-gutturals, but */u/ > /ɔ̄/ (and rarely */i/ > /ɛ̄/) may still occur, especially after stops (or their spirantized counterparts) and /s/ /ʃ/ (e.g. דָּמִי /däˈmi/).^{[132][133]} Samaritan and Qumran Hebrew have full vowels in place of the reduced vowels of Tiberian Hebrew.^[134]

Samaritan Hebrew also does not reflect etymological vowel length; however the elision of guttural consonants has created new phonemic vowel length, e.g. /rɔb/ רב ('great') vs. /rɔːb/ רחב ('wide').^[135] Samaritan Hebrew vowels are allophonically lengthened (to a lesser degree) in open syllables, e.g. אֲמִיסְרִי [ammisˈriː], though this is less strong in post-tonic vowels.^[135] Pretonic gemination is also found in Samaritan Hebrew, but not always in the same locations as in Tiberian Hebrew, e.g. גַּלְמִים TH /gämalːim/ SH /gämalːim/; שְׁלֵמִים TH /ʃələːmim/ SH /ʃələːmim/.^[136] While Proto-Hebrew long vowels usually retain their vowel quality in the later traditions of Hebrew,^{[123][137]} in Samaritan Hebrew */i/ may have reflex /e/ in closed stressed syllables, e.g. דִּין /den/, */a/ may become either /a/ or /ɔ/,^[138] and */o/ > /u/.^[138] The reduced vowels of the other traditions appear as full vowels, though there may be evidence that Samaritan Hebrew once had similar vowel reduction. Samaritan /ɔ/ results from the neutralization of the distinction between /i/ and /e/ in closed post-tonic syllables, e.g. /bit/ בית ('house') /abbət/ הבית ('the house') /ger/ הגר /aggəːr/.^[139]

Various more specific conditioned shifts of vowel quality have also occurred. Diphthongs were frequently monophthongized, but the scope and results of this shift varied among dialects. In particular, the Samaria ostraca show /jeːn/ < */jajn/ < */wajn/.^[nb 28] for Southern /jajn/ ('wine'), and Samaritan Hebrew shows instead the shift */aj/ > /i/.^{[139][139]} Original */u/ tended to shift to /i/ (e.g. אֶבֶר and אֶרֶב 'word'; הוֹרֵן 'outside' / הוֹרֵן 'outer') beginning in the second half of the second millennium BCE.^[140] This was carried through completely in Samaritan Hebrew but met more resistance in other traditions such as the Babylonian and Qumran traditions.^[140] Philippi's law is the process by which original */i/ in closed stressed syllables shifts to /a/ (e.g. */bint/ > בַּת /bat/ 'daughter'), or sometimes in the Tiberian tradition /ɛ/ (e.g. */ʔamint/ > אָמַרְתָּ /ʔəmet/ 'truth').^{[141][nb 29]} This is absent in the transcriptions of the Secunda,^[142] but there is evidence that the law's onset predates the Secunda. In the Samaritan tradition Philippi's law is applied consistently, e.g. */libː-u/ > /lab/ ('heart').^{[143][nb 30]} In some traditions the short vowel */a/ tended to shift to /i/ in unstressed closed syllables: this is known as the law of attenuation. It is common in the Tiberian tradition, e.g. */ʔabʕat/ > Tiberian שִׁבְעָה /ʃivˈʕə/ ('seven'), but exceptions are frequent.^[144] It is less common in the Babylonian vocalization, e.g. /ʔabʕə/ ('seven'), and differences in Greek and Latin transcriptions demonstrate that it began quite late.^[144] Attenuation generally did not occur before /i-e/, e.g. Tiberian מַפְתָּח /mafˈteħ/ ('key') versus מִפְתָּח /mifˈtaħ/ ('opening [construct]'), and often was blocked before a geminate, e.g. מַתָּה /matˈteħ/ ('gift').^[144] Attenuation is rarely present in Samaritan Hebrew, e.g. מַקְדָּף /maqˈdäf/.^{[145][nb 31]} In the Tiberian tradition /e i o u/ take offglide /a/ before /h ʕ/.^{[146][nb 32]} This is absent in the Secunda and in Samaritan Hebrew but present in the transcriptions of Jerome.^{[139][147]} In the Tiberian tradition an ultrashort echo vowel is sometimes added to clusters where the first element is a guttural, e.g. יִשְׁמְעֶנּוּ /jəˈʂmɛːnə/ ('he will listen') / יִשְׁמְעֶנּוּ /jəˈʂmɛːnə/ ('his work') but יִשְׁמְעֶנּוּ /jəˈʂmɛːnə/ ('he will make glorious') / יִשְׁמְעֶנּוּ /jəˈʂmɛːnə/ 'its breadth'.^{[132][nb 33][nb 34]}

The following charts summarize the most common reflexes of the Proto-Semitic vowels in the various stages of Hebrew:

Proto-Semitic	Proto-Hebrew	Secunda	Tiberian	Babylonian	Palestinian	Samaritan ¹
*a:	*a:	a:		ɔ	a	a, ɔ
	*o:	o:		o		u
*i:	*i:	i:		i		e, i
*u:	*u:	u:		u		o, u ⁴

Proto-Semitic	Proto-Hebrew	"lengthened" ⁵					"reduced" ⁶					word-final					otherwise ⁷				
		Sc	T	B	P	Sm ¹	Sc	T	B	P	Sm ¹	Sc	T	B	P	Sm ¹	Sc	T	B	P	Sm ¹
*a	*a	a:	ɔ		a	a, ɔ	ə	ä	ə	* ⁹							a	a, i ²			a, ɔ
*i	*i	e:	e				ə	ä, ɛ̄	ə	* ⁹							∅	e	ɛ, i ⁸ , a ³	e, i ⁸ , a ³	e, i, a ³
*u	*u	o:	o			a, ɔ, i	ə	ä, ɔ̄	ə	* ⁹							o	ɔ, u ⁸		o, u ⁸	a, ɔ, i

- Samaritan vowels may be lengthened in the presence of etymological guttural consonants. /ə/ results from both /i/ and /e/ in closed post-tonic syllables.
- under the conditions of the law of attenuation
- under the conditions of Philippi's law
- Samaritan /o u/ are nearly in complementary distribution (/o/ in open syllables, /u/ in closed syllables)
- lengthening occurs in some open pretonic syllables and some stressed syllables; precise conditions depend on the vowel and on the tradition
- reduction occurs in the open syllables two syllables away from the stress and sometimes also in pretonic and stressed open syllables
- effectively in most closed syllables
- more common before geminate consonants
- Samaritan Hebrew has full vowels when the other traditions have reduced vowels, but these do not always correlate with their Proto-Hebrew ancestors

Stress

Proto-Hebrew generally had penultimate stress.^{[148][nb 35]} The ultimate stress of later traditions of Hebrew usually resulted from the loss of final vowels in many words, preserving the location of proto-Semitic stress.^[nb 36] Tiberian Hebrew has phonemic stress, e.g. בָּנוּ /bɔˈnu/ ('they built') vs. בְּנוּ /bɔˈnu/ ('in us'); stress is most commonly ultimate, less commonly penultimate, and antepenultimate stress exists marginally, e.g. הִכְנִיחֵנוּ /hɔˈhɛːnə/ ('into the tent').^{[149][nb 37]} There does not seem to be evidence

for stress in the Secunda varying from that of the Tiberian tradition.^[150] Despite sharing the loss of final vowels with Tiberian Hebrew, Samaritan Hebrew has generally not preserved Proto-Semitic stress, and has predominantly penultimate stress, with occasional ultimate stress.^[151] There is evidence that Qumran Hebrew had a similar stress pattern to Samaritan Hebrew.^[134]

Grammar

Medieval grammarians of Arabic and Hebrew classified words as belonging to three parts of speech: Arabic *ism* ('noun'), *fi'l* ('verb'), and *ḥarf* ('particle'); other grammarians have included more categories.^[152] In particular, adjectives and nouns show more affinity to each other than in most European languages.^[152] Biblical Hebrew has a typical Semitic morphology, characterized by the use of roots. Most words in Biblical Hebrew are formed from a *root*, a sequence of consonants with a general associated meaning.^[153] Roots are usually triconsonantal, with biconsonantal roots less common (depending on how some words are analyzed) and rare cases of quadri- and quinquiconsonantal roots.^[153] Roots are modified by *affixation* to form words.^[153] Verbal patterns are more productive and consistent, while noun patterns are less predictable.^[154]

Nouns and adjectives

The most common nominal prefix used is /m/, used for substantives of location (מִשְׁבַּח 'assembly'), instruments (מִפְתָּח 'key'), and abstractions (מִשְׁפֵּט 'judgement').^[155] The vowel after /m/ is normally /a/, but appears sometimes as /i/, or in the case of מִשְׁבַּח as /o/ (contracted from */aw/).^[155] The prefix /t/ is used to denote the action of the verb; it is derived from more common for initial-/w/ verbs, e.g. תּוֹדָה ('thanksgiving'; < ydy).^[155] Prefixed /ʔ/ is used in adjectives, e.g. אֲדוּכָה ('deceptive'), and also occurs in nouns with initial sibilants, e.g. אֶצְבַּע ('finger').^[155] In the latter case this prefix was added for phonetic reasons, and the א prefix is called either "prothetic" or "prosthetic".^[155] Prefixed ו often occurs in quadriliteral animal names, perhaps as a prefix, e.g. פְּטָרִי ('bat'), עֵבֶר ('mouse'), עֶקְרָב ('scorpion').^[155]

In proto-Semitic nouns were marked for case: in the singular the markers were */-u/ in the nominative, */-a/ in the accusative (used also for adverbials), and */-i/ in the genitive, as evidenced in Akkadian, Ugaritic, and Arabic.^[156] The Amarna letters show that this was probably still present in Hebrew c. 1350 BCE.^[157] In the development of Hebrew, final */-u, -i/ were dropped first, and later */-a/ was elided as well.^[158] Mimiation, a nominal suffix */-m/ of unclear meaning, was found in early Canaanite, as shown by early Egyptian transcriptions (c. 1800 BCE) of Jerusalem as *Urušalimim*, but there is no indication of its presence after 1800 BCE.^{[158][nb 38]} Final */-a/ is preserved in לַיְלָה /ˈlajlə/, originally meaning 'at night' but in prose replacing לַיְלָה /ˈlajl/ ('night'), and in the "connective vowels" of some prepositions (originally adverbials), e.g. עִמָּנוּ ('with us'); nouns preserve */-i/ in forms like בָּנוּ.^{[159][nb 39]} Construct state nouns lost case vowels at an early period (similar to Akkadian), as shown by the reflexes of */ʾadaju/ (אֲדָיָה in absolute but אֲדָיָה in construct) and the reflexes of */jadu/ (יָדָה and יָדָה).^[160] However forms like בָּנוּ show that this was not yet a feature of Proto-Hebrew.^[161]

Biblical Hebrew has two genders, masculine and feminine, which are reflected in nouns, adjectives, pronouns, and verbs.^[162] Hebrew distinguishes between singular and plural numbers, and plural forms may also be used for collectives and honorifics.^[163] Hebrew has a morphological dual form for nouns that naturally occur in pairs, and for units of measurement and time this contrasts with the plural (יוֹם 'day' יוֹמִים 'two days' 'days').^[164] A widespread misconception is that the Hebrew plural denotes three or more objects. In truth, it denotes two or more objects.^[165] However adjectives, pronouns, and verbs do not have dual forms, and most nominal dual forms can function as plurals (שֵׁשׁ כַּנְפִּים 'six wings' from Isaiah 6:2).^{[164][166]} Finite verbs are marked for subject person, number, and gender.^[167] Nouns also have a *construct* form which is used in genitive constructions.^[168]

Nouns are marked as definite with the prefix /ha-/ followed by gemination of the initial consonant of the noun.^[169] In Tiberian Hebrew the vowel of the article may become /ɛ/ or /ɔ/ in certain phonetic environments, for example הַחָכֵם /hɛħɔˈxɑm/ ('the wise man'), הַאִישׁ /hɔˈʔiʃ/ ('the man').^[170]

The traditions differ on the form of *segolate* nouns, nouns stemming from roots with two final consonants. The anaptyctic /ɛ/ of the Tiberian tradition in segolates appears in the Septuagint (3rd century BCE) but not the Hexapla (2nd century CE), e.g. אֶרֶץ /ʔɛθɛr/ = Γαθερ versus כֶּסֶל /ˈkesɛl/ = Χεσλ (Psalms 49:14).^[171] This may reflect dialectal variation or phonetic versus phonemic transcriptions.^[171] Both the Palestinian and Babylonian traditions have an anaptyctic vowel in segolates, /e/ in the Palestinian tradition (e.g. /ʔeres/ 'land' = Tiberian אֶרֶץ Deuteronomy 26:15) and /a/ in Babylonian (e.g. /hepas/ 'item' = Tiberian הֶפֶס Jeremiah 22:28).^[172] The Qumran tradition sometimes shows some type of back epenthetic vowel when the first vowel is back, e.g. אֶהוּל (אֶהוּל) for Tiberian אֶהוּל /ˈʔohɛl/ ('tent').

Biblical Hebrew has two sets of personal pronouns: the free-standing independent pronouns have a nominative function, while the pronominal suffixes are genitive or accusative.^[173] Only the first person suffix has different possessive and objective forms (־ and וּ-).^[174]

Verbs

Verbal consonantal roots are placed into derived verbal stems, known as בנינים *binyanim* in Hebrew; the binyanim mainly serve to indicate grammatical voice.^[174] This includes various distinctions of reflexivity, passivity, and causativity.^[174] Verbs of all binyanim have three non-finite forms (one participle, two infinitives), three modal forms (cohortative, imperative, jussive), and two major conjugations (prefixing, suffixing).^{[175][nb 40]} The meaning of the prefixing and suffixing conjugations are also affected by the conjugation ו, and their meaning with respect to *tense* and *aspect* is a matter of debate.^[175]

Word order

The default word order in Biblical Hebrew is commonly thought to be VSO,^[176] though one scholar has argued that this is due to the prevalence of clauses with a *wayyiqtol* verb form compared to other less marked forms that use SVO either more often or at least to a comparable degree.^[177] Attributive adjectives normally follow the noun they modify.^[178] In Biblical Hebrew, possession is normally expressed with *status constructus*, a construction in which the possessed noun occurs in a phonologically reduced, "construct" form and is followed by the possessor noun in its normal, "absolute" form.^{[179][180]} Pronominal direct objects are either suffixed to the verb or alternatively expressed on the object-marking pronoun אֹת.^[181]

Tense and aspect

Biblical Hebrew has two main conjugation types, the suffix conjugation, also called the Perfect, and the prefix conjugation, also called Imperfect. The Perfect verb form expressed the idea of the verb as a completed action, viewing it from start to finish as a whole, and not focusing on the process by which the verb came to be completed, stating it as a simple fact. This is often used in the past tense, however there are some contexts in which a Perfect verb translates into the present and future tenses.^[182]

The Imperfect portrays the verb as an incomplete action along with the process by which it came about, either as an event that has not begun, an event that has begun but is still in the process, or a habitual or cyclic action that is on an ongoing repetition. The Imperfect can also express modal or conditional verbs, as well as commands in the Jussive and Cohortative moods. It is conjectured that the imperfect can express modal quality through the *paragogic nun* added to certain imperfect forms.^[183] While often future tense, it also has uses in the past and present under certain contexts. Biblical Hebrew tense is not necessarily reflected in the verb forms per se, but rather is determined primarily by context. The Participles also reflect ongoing or continuous actions, but are also subject to the context determining their tense.

The verbal forms can be Past Tense in these circumstances:^[184]

- *Perfect, Simple Past*: in narrative, reflects a simple completed action, perception, emotion or mental process, and can also be past tense from the perspective of a

prior verb which is used in future tense

- *Imperfect, Waw Consecutive Preterite*: simple past tense which takes the ו prefix as a conjunction, appears at the beginning of a clause when it's connected in a narrative sequence with previous clauses, where the conjunction can be translated as 'and then', 'then', 'but', 'however', sometimes is not translated at all, and can even have a parenthetical function as if suggesting the clause is like a side note to the main focus of the narrative
- *Imperfect, Past*: reflecting not just a past action but also suggesting the process with which it was being done, e.g.: "I brought the horse to a halt", "I began to hear"
- *Imperfect, Cyclic Past*: reflecting a habitual or cyclic action over time, e.g. "this is what Job would always do"
- *Participle in Past Tense*: an active or passive Participle being used in its imperfect verbal sense in the past, e.g. "and the Spirit of God was hovering"

The verbal forms can be Present Tense in these circumstances:^[184]

- *Perfect, Proverbial/General Present*: a general truth in the present tense which is not referring to a specific event, e.g. "the sun sets in the west"
- *Perfect, Stative Present*: present tense with verbs that depict a state of being rather than an action, including verbs of perception, emotion or mental process, e.g. "I love", "I hate", "I understand", "I know"
- *Perfect, Present Perfect*: a Present Perfect verb, e.g. "I have walked"
- *Imperfect, Present Condition*: an Imperfect verb in the present, one which implies that an action has been going on for some time and is still ongoing in the present, especially used of questions in the present, e.g. "what are you seeking?"
- *Imperfect, Cyclic Present*: an Imperfect verb in the present, reflecting a cyclic action in the present, e.g. "it is being said in the city", "a son makes his father glad"
- *Participle in Present Tense*: an active or passive Participle being used in its imperfect verbal sense in the present, e.g. "I am going"

The verbal forms can be Future Tense in these circumstances:^[184]

- *Perfect, Waw Consecutive Future*: by analogy to the Preterite, a simple future tense verb which takes the ו prefix as a conjunction, appears at the beginning of a clause when it's connected in a narrative sequence with previous clauses, where the conjunction can be translated as 'and then', 'then', 'but', 'however', sometimes is not translated at all, and can even have a parenthetical function as if suggesting the clause is like a side note to the main focus of the narrative
- *Perfect, Waw Consecutive Subjunctive*: takes the ו prefix as a conjunction to continue the Subjunctive Mood in a narrative sequence
- *Perfect, Waw Consecutive Jussive/Cohortative*: takes the ו prefix as a conjunction to continue the Jussive and Cohortative Moods in a narrative sequence
- *Perfect, Promise Future*: the completeness of the verb form here expresses an imminent action in the context of promises, threats and the language of contracts and covenants in general, e.g. "I will give you this land", "will I have this pleasure?"
- *Perfect, Prophetic Future*: the completeness of the verb form here expresses an imminent action in the context of prophecy, e.g. "you will go into exile"
- *Imperfect, Future*: reflects a future event which has not yet come into completion, or one that has not yet begun, or future tense from the perspective of a prior verb which is used in past tense
- *Imperfect, Subjunctive*: reflects a potential, theoretical or modal verb, such as in conditional clauses, e.g. "If you go...", "she should stay"
- *Imperfect, Jussive/Cohortative*: reflects a non-immediate command, invitation, permission or wishful request, e.g. "let there be light", "you may eat from the tree", "let's go", "O that someone would get me a drink"

Sample text

The following is a sample from Psalm 18 as appears in the Masoretic text with medieval Tiberian niqqud and cantillation and the Greek transcription of the Secunda of the Hexapla along with its reconstructed pronunciation.

	Secunda ^[105]	Pronunciation (Secunda) ^[105] (IPA)
Tiberian Hebrew	29. חִי אֱתָהּ תִּאֶיֶר וְיָרִי יִהְיֶה אֱלֹהֵי יְגִיָּה הַשָּׁמַיִם	29. [ki: ʔat:a: ta:ʔi:r ne:ri: **** ʔalo:haj agi:h ʔofki:]
30. כִּי־בָרַךְ אֲרָץ גְּדוּד לְבִאֲלֵהִי אֲדֹלֶגְ-שׁוּרִי	30. חִי βαρχ αρους γεδουδ ουβελωαι εδאלlegg σουρ	30. [ki: ba:k ʔa:ru:sʕ gedu:d ubelo:haj ʔedal:eg fu:r]
31. הָאֵלִים תִּתְמֵם יְהוָה אֲמַרְתִּי יְהוָה צְרוּפָה מִגֵּן הָאוּר לְכָל לַחַיִּים בָּוִי	31. αηλ θαμμιν (*-μ) δερχω εμαραθ YHWH σερουφα μαγεν ου λαχολ αωσιμ βω	31. [ha:ʔe:l tam:i:m derko: ʔemərat **** sʕəru:fa: ma:gen hu: lakol haʔo:si:m bo:]
32. כִּי מִי אֵלֹהִים מְבַלְעָדִי יְהוָה וְגַם צֹר זִלְתִּי אֶלְהֵינוּ	32. חִי מי ελω μεββελαδη YHWH ουμι σουρ ζουλαθι ελωννου (*-ηνω)	32. [ki: mi: ʔelo:h meb:elʕade: **** umi: sʕu:r zu:la:ti: ʔelo:he:nu:]

Notes

- This is known because the final redaction of the Talmud, which does not mention these additions, was ca. 600 CE, while dated manuscripts with vocalization are found in the beginning of the tenth century. See Blau (2010:7)
- However it is noteworthy that Akkadian shares many of these sound shifts but is less closely related to Hebrew than Aramaic. See Blau (2010:19)
- However, for example, when Old Aramaic borrowed the Canaanite alphabet it still had interdentals, but marked them with what they merged with in Canaanite. For instance 'ox' was written שר but pronounced with an initial /θ/. The same phenomenon also occurred when the Arabs adopted the Nabatean alphabet. See Blau (2010:74–75).
- As a consequence this would leave open the possibility that other proto-Semitic phonemes (such as */ð/) may have been preserved regionally at one point. See Rendsburg (1997:72)
- Such contraction is also found in Ugaritic, the El-Amarna letters, and in Phoenician, while the anaptyctic vowel is found in Old Aramaic and Deir Alla. Sáenz-Badillos (1993:44)
- At times the Moabites, Ammonites, Edomites, and Philistines would also use the Paleo-Hebrew script. See Yardeni (1997:25)
- Though some of these translations wrote the tetragrammaton in the square script See Tov (1992:220)
- Ktiv male, the Hebrew term for full spelling, has become de rigueur in Modern Hebrew.
- There are rare-cases of (א) being used medially as a true vowel letter, e.g. אַף for the usual אֵף 'fish'. Most cases, however, of (א) being used as a vowel letter stem from conservative spelling of words which originally contained /ʔ/, e.g. שֵׁאֵף ('head') from original */raʔ/. See Blau (2010:86). There are also a number of exceptions to the rule of marking other long vowels, e.g. when the following syllable contains a vowel letters (like in קוֹלוֹת 'voices' rather than קוֹלוֹת) or when a vowel letter already marks a consonant (so אֲמִיּוֹת 'nations' rather than *אֲמִיּוֹת), and within the Bible there is often little consistency in spelling. See Blau (2010:6)
- The Secunda is a transliteration of the Hebrew biblical text contained in the Hexapla, a recension of the Old Testament compiled by Origen in the 3rd century CE. There is evidence that the text of the Secunda was written before 100 BCE, despite the later date of the Hexapla. For example, by the time of Origen (η, αι) were pronounced [i:, ε:], a merger which had already begun around 100 BCE, while in the Secunda they are used to represent Hebrew /e: aj/. See Janssens (1982:14)
- The Palestinian system has two main subtypes and shows great variation. Blau (2010:7) The Babylonian vocalization occurred in two main types (simple / *einfach* and complex / *kompliziert*), with various subgroups differing as to their affinity with the Tiberian tradition. Sáenz-Badillos (1993:97–99)
- In the Babylonian and Palestinian systems only the most important vowels were written. See Blau (2010:118)
- Almost all vocalized manuscripts use the Masoretic Text. However there are some vocalized Samaritan manuscripts from the Middle Ages. See Tov (1992:40)
- Or perhaps Hurrian, but this is unlikely See Dolgoposky (1999:72–3).

15. According to the generally accepted view, it is unlikely begadkefat spirantization occurred before the merger of /χ, ʁ/ and /h, ʕ/, or else [x, χ] and [χ, ʁ] would have to be contrastive, which is cross-linguistically rare. However Blau argues that it is possible that lenited /k/ and /χ/ could coexist even if pronounced identically, since one would be recognized as an alternating allophone (as apparently is the case in Nestorian Syriac). See Blau (2010:56).
16. The vowel before originally geminate /r ʔ/ usually shows compensatory lengthening, e.g. אָבִי /hɑːʔ/ 'the father' < */haʔ:ab/; with /ʕ/ preceding */i/ tends to remain short; with /h/ original */a/ also remains short, and /h/ generally does not cause compensatory lengthening, e.g. אָרַם ('he will have compassion'). See Blau (2010:81–83)
17. In this respect the Palestinian tradition corresponds to the modern Sephardi pronunciation, and the Babylonian tradition to the modern Yemenite pronunciation.
18. While the vowels /a e i o u/ certainly have phonemic status in the Tiberian tradition, /e/ has phonemic value in final stressed position but in other positions it may reflect loss of the opposition /a : i/. See Blau (2010:111–112)
19. In fact, its scope of application is different in Samaritan and Tiberian Hebrew (e.g. הֵרָה 'here' Tiberian /pɑ/ vs. Samaritan /fa/), see Ben-Hayyim (2000:83–86). Even in Tiberian Hebrew doublets are found, e.g. /k'an:ɑ(ʔʔ)/ = /k'an:ɑ(ʔʔ)/ ('zealous'). See Steiner (1997:147)
20. Parallels to Aramaic syllable structure suggest pretonic lengthening may have occurred in the Second Temple period. See Blau (2010:128–129)
21. Long /a: e: o:/ were written as (א ה ו), while short /a e o/ were written (אֵ אֶ אֹ). This length distinction is also found in the LXX. See Blau (2010:110–111), Janssens (1982:54), and Dolgopolsky (1999:14)
22. In the Secunda */a *i *u/ are preserved as short in syllables closed by two consonants and in the third syllable before the stress. See Janssens (1982:54, 58–59)
23. The Secunda also has a few cases of pretonic gemination. See Janssens (1982:119).
24. In fact, first all stressed vowels were lengthened in pause, see Janssens (1982:58–59). This can be seen by forms like Tiberian כָּ /kaʔ/ < */kaʔi/, pausal קָ /kɑʔ/ < */kɑʔi/ < */ka:ʔ/ < */kaʔi/. The shift in Tiberian Hebrew of */a: / > */ɑ:/ occurred after this lengthening, but before the loss of phonemicity of length (since words like אָרַם with allophonically long [a:] don't show this shift).
25. This is attested to by the testimony of Rabbi Joseph Qimḥi (12th century) and by medieval Arabic transcriptions, see Janssens (1982:54–56). There is also possible evidence from the cantillation marks' behavior and Babylonian patah, see Blau (2010:82).
26. The Palestinian reflexes of Tiberian /ɔ/ (/a/ and /o/) thus reflect the qamatz gadol-qamatz qatan distinction.
27. See אֲנִי /ʔ ni/ ('ships') אָנִי /ä ni/ ('I'), חָלִי /ħä li/ ('sickness') חָלִי /hä li/ ('ornament'), אָנִי /ʔä li/ ('ascend!') (Num 21:17) and בָּעָנִי /baʕä ni/ ('[with the] pestle'; Prov 27:22). Blau (2010:117–118) /ä/ alternates with /ä/ frequently and rarely contrasts with it, e.g. אֲדוֹמִי /ʔä ðomi/ ('Edom') versus אֲדוֹמִי /äðomi/ ('Edomite'). Blau (2010:117–118) /ä/ is clearly phonemic but bears minimal functional load. Sáenz-Badillos (1993:110) /ä/ is written both with *mobile šwa* (◌ֶ) and *hataf patah* (◌ֶ). Blau (2010:117)
28. For /w- / > /j-/, see above. The Semitic form */wajn-/ was borrowed into Proto-Indo-European as */wojn-om/, eventually yielding Latin *vinum* and English *wine*.
29. Note that this /a/ does not become /ɔ/ in pause, thus בַּת has a patah vowel in pause as well as in context. *Eblaitica: essays on the Ebla archives and Eblaitic language, Volume 1*. Eisenbrauns. 1987. p. 20. ISBN 978-0-931464-34-8.
30. The only known case where Philippi's Law does not apply is in the word קָן /qen/ < */qinn-u/ ('nest'). The shift */i/ > /a/ has been extended by analogy to similar forms, e.g. *ʔim-u/ > /ʔam/ ('name'; but *ʔim-u/ > /ʔem/ 'reputation!'). Ben-Hayyim (2000:76, 79)
31. Verbal forms such as יִפְקֹד = Samaritan /jifqɑd/ < */jafqɑd/ may be examples of Barth's law rather than attenuation.
32. This is known as *patah furtivum*, literally 'stolen patah' and perhaps a mistranslation of Hebrew פַּתַּח גִּנוּבָה ('patah of the stolen [letter]'), as if א were being inserted. See Blau (2010:83)
33. It is evident that this epenthesis must have been a late phenomenon, since a short vowel preceding a guttural is preserved even though it becomes in an open syllable, see Blau (2010:85).
34. This is less common when the consonant following the guttural is a begadkefat letter, e.g. תִּקְחֶלֶת /taħbol/ ('you take in pledge'). This suggests that begadkefat spirantization was no longer automatic by the time that this epenthesis occurred, see Blau (2010:79)
35. For the purposes of vowel quality shifts, words in the construct state are treated as if the stress fell immediately on the first syllable following the word. See Janssens (1982:52)
36. Additionally, short stressed vowels in open syllables were reduced and lost stress, leading to ultimate stress in forms like קָטַל < */qa t'alu/. In Tiberian Hebrew some words have penultimate stress in pause (before a break in reading), but ultimate stress in context, such as שָׁמְרָה and שָׁמְרָה ('she watched'), because the penultimate vowel in the original form *ʔa maru/ lengthened in pause, while in context it was not lengthened, and then lost the stress and was reduced due to this sound shift. See Blau (2010:146–148, 154)
37. It is not clear that a reduced vowel should be considered as comprising a whole syllable. Note for example that the rule whereby a word's stress shifts to a preceding open syllable to avoid being adjacent to another stressed syllable skips over ultrashort vowels, e.g. בָּרוּךְ עַם יִשְׂרָאֵל /ʔim-joräde vor/ ('with those who go down into the pit') מְטַעֲנִי מֵאֵל מְטַעֲנֵי חֶכְמָה /mā t'ɑ'säne 'ħochw/ ('pierced with a sword'). See Blau (2010:143–144)
38. It has been suggested that the construct forms אָבִי, אָמִי have long /i:/ lacking in the absolute אָב אָמִי because the later stem from forms like *ʔabu:m/ > */ʔabum/ (because Proto-Semitic did not allow long vowels in closed syllables) > */ʔab/ (loss of mimation and final short vowel), see Blau (2010:267)
39. The unstressed suffix -ה in words like אֲרֶצָה ('to the earth'), occurring also in exclamations like חַלִּילָה and used ornamentally in poetry, e.g. יְשׁוּעָה, may have originally terminated in consonantal *-h/ which was later elided, following the suffix */-a/. This is evidenced by Ugaritic orthography, almost purely consonantal, where אֲרֶצָה appears with /h/, see Blau (2010:91–92, 268)
40. The modal forms may be taken to form a single volitional class, as cohortative is used in first person, imperative (or prefixing) in second person positive, jussive (or prefixing) in second person negative, and jussive in third person. They also overlap semantically, for example a jussive form like 'May my soul ...' is semantically equivalent to a cohortative like 'May I ...'. However, the three moods stem from different classes in proto-West-Semitic. As preserved in Classical Arabic, there were originally three prefix tenses, indicative *yaqtulu*, jussive *yaqtul*, and subjunctive *yaqtula*, which existed for every person. In Biblical Hebrew, *yaqtulu* developed into the prefixing class, while *yaqtul* remained the jussive and *yaqtula* the cohortative. For most roots in Biblical Hebrew, the jussive form is identical to the indicative form. (Differentiation is typical of forms with "long" and "short" forms, e.g. indicative יִכְרֶת, jussive יִכְרַת; indicative יִרְאֶה, jussive יִרְאֵה) See Waltke & O'Connor (1990:564–565, 566) and Blau (2010:206).

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19. Blau (2010:10)
20. Waltke & O'Connor (1990:8): "The extrabiblical linguistic material from the Iron Age is primarily epigraphic, that is, texts written on hard materials (pottery, stones, walls, etc.). The epigraphic texts from Israelite territory are written in Hebrew in a form of the language which may be called Inscriptional Hebrew; this "dialect" is not strikingly different from the Hebrew preserved in the Masoretic text. Unfortunately, it is meagerly attested."
21. Waltke & O'Connor (1990:16)
22. Yardeni (1997:17–25)
23. Tov (1992:118)
24. Blau (2010:7)
25. Blau (2010:25–40)
26. Frank (2003:12)
27. Kogan (2011:54–150)
28. Rendsburg (1997:65)
29. Sáenz-Badillos 1993, p. 29.
30. Sáenz-Badillos (1993:36–38, 43–44, 47–50)
31. Dolgopolsky (1999:57–59)
32. Blau (2010:76)
33. Waltke & O'Connor (1990:8)

34. Blau (2010:18)
35. Blau (2010:21)
36. Blau (2010:136–137)
37. Garnier & Jacques (2012)
38. Blau (2010:7, 11)
39. Sáenz-Badillos (1993:52)
40. Rendsburg (1997:66)
41. Sáenz-Badillos (1993:56)
42. Sáenz-Badillos (1993:60)
43. Sáenz-Badillos (1993:61)
44. Sáenz-Badillos (1993:57–60)
45. Sáenz-Badillos (1993:71)
46. Sáenz-Badillos (1993:55)
47. Sáenz-Badillos (1993:132)
48. Blau (2010:8, 40–41)
49. Rendsburg (1997:70)
50. Kogan (2011:69)
51. Rendsburg (1999:255)
52. Blau (2010:8, 96–97)
53. Blau (2010:8)
54. Sáenz-Badillos (1993:83, 137–138)
55. Ben-Hayyim (2000:38–39)
56. Blau (2010:6, 69)
57. Rendsburg (1997)
58. Blau (2010:69)
59. Rendsburg (1997:70–73)
60. Yardeni (1997:15)
61. Hanson (2011)
62. Yardeni (1997:13, 15, 17)
63. Tov (1992:218–220)
64. Sáenz-Badillos (1993:16–18)
65. Yardeni (1997:23)
66. Yardeni (1997:18, 24–25)
67. Yardeni (1997:42, 45, 47–50)
68. Yardeni (1997:65, 84–91)
69. Blau (2010:74–75, 77)
70. Sperber (1959:81)
71. Blau (2010:77)
72. Tov (1992:221–223)
73. Blau (2010:6)
74. Tov (1992:96, 108, 222)
75. Tov (1992:108–109)
76. Sáenz-Badillos (1993:136)
77. Tov (1992:96–97)
78. Jobes & Silva (2001)
79. Ben-Hayyim (2000:5)
80. Rendsburg (1997:68–69)
81. Ben-Hayyim (2000:6)
82. Waltke & O'Connor (1990:25)
83. Tov (1992:208–209)
84. Blau (2010:7, 143)
85. Yeivin (1980:157–158)
86. Blau (2010:110–111)
87. Laufe, Asher; Baer, Thomas (1988). *THE EMPHATIC AND PHARYNGEAL SOUNDS IN HEBREW AND IN ARABIC* (http://www.haskins.yale.edu/SR/SR095/SR095_03.pdf) (PDF). *Language and Speech*. p. 64.
88. Blau (2010:68)
89. Rendsburg (1997:73)
90. Hetzron, Robert (2011). *The Semitic Languages An International Handbook*. De Gruyter Mouton. pp. 1.3.1.3. ISBN 9783110186130.
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92. Blau (2010:56, 75–76)
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94. Dolgopolsky (1999:73)
95. Blau (2010:78–81)
96. Sáenz-Badillos (1993:137–138)
97. Janssens (1982:43)
98. Blau (2010:82–83)
99. Steinberg (2010)
100. Janssens (1982:54)
101. Blau (2010:105–106, 115–119)
102. Sáenz-Badillos (1993:88–89, 97, 110)
103. Sperber (1959:77, 81)
104. Ben-Hayyim (2000:43–44, 48)
105. Janssens (1982:173)
106. Blau (2010:112)
107. Blau (2010:118–119)
108. Yahalom (1997:16)
109. Ben-Hayyim (2000:44, 48–49)
110. Ben-Hayyim (2000:49)
111. Blau (2010:111)
112. Blau (2010:151)
113. Blau (2010:267)
114. Steiner (1997:147)
115. LaSor (1978, Part 2, §14.11)
116. Janssens (1982:56–57)
117. Janssens (1982:54, 118–120, 132)
118. Janssens (1982:56–57).
119. Janssens (1982:120)
120. Steiner (1997:149)
121. Blau (2010:82, 110)
122. Janssens (1982:54–56)
123. Rendsburg (1997:77)
124. Bergstrasser & Daniels (1995:53)
125. Blau (2010:129, 136)
126. Blau (2010:124, 136)
127. Sáenz-Badillos (1993:97)
128. Blau (2010:117–118)
129. Sáenz-Badillos (1993:110)
130. Yeivin (1980:281–282)
131. Blau (2010:105–106)
132. Blau (2010:84–85)
133. Yeivin (1980:282–283)
134. Sáenz-Badillos (1993:160)
135. Ben-Hayyim (2000:45, 47–48) (while Ben-Hayyim notates four degrees of vowel length, he concedes that only his "fourth degree" has phonemic value)
136. Ben-Hayyim (2000:62)
137. Janssens (1982:54, 123–127)
138. Ben-Hayyim (2000:83)
139. Sáenz-Badillos (1993:156)
140. Sáenz-Badillos (1993:138–139)
141. Blau (2010:133–136)
142. Janssens (1982:66)
143. Ben-Hayyim (2000:79)
144. Blau (2010:132)
145. Ben-Hayyim (2000:81)
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152. Waltke & O'Connor (1990:66–67)
153. Waltke & O'Connor (1990:83)
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156. Blau (2010:266)
157. Waltke & O'Connor (1990:17)
158. Blau (2010:267–268)
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160. Blau (2010:119–120, 268)
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 - [Brown–Driver–Briggs Hebrew Lexicon – with an appendix containing Biblical Aramaic \(Wikisource\)](#)
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