

HISTORY OF VOWELS AND STRESS FROM PROTO-SEMITIC TO HRBREW

SERIES OF RULES

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The history of vowels and stress from proto-Semitic to MasHb. (included those discussed in § 10) may be tentatively represented in the following series of rules (phonetic changes, phonemic and morphophonemic rules):

[0] (all epochs). *uω > ū, *ūω > ū, *iy > *ī, *īy > *ī, *iyy > *ī / _|. Exx. 62, 77, 143, 199, 215, 230, 241, 244, 252.

[1] *₁₁₁ωC > *₁₁₁C. Ex. 66.

[2] *₁₁a + *a ⇨ ₁₁ā. Ex. 63.

[3] a) 'stem + ' ₁₁ suffix ⇨ ₁₁stem } ' ₁₁suffix. Exx. 12-3, 15, 18, 71, 74, 87, 90, 106, 131, 138, 144, 146, 150, 154, 162, 195, 207-8, 231-3, 282.

b) 'stem + 'suffix + ' ₁₁ suffix ⇨ ₁₁stem } ₁₁suffix } ' ₁₁ suffix. Exx. 190, 200.

c) 'prefix + ₁₁stem ⇨ 'prefix } °stem. Exx. 39, 41.

d) 'prefix + 'stem ⇨ °prefix } 'stem; 'prefix + °prefix + 'stem ⇨ °prefix } °prefix } 'stem; 'prefix (+ °prefix) + 'stem + °suffix ⇨ °prefix (} °prefix) } 'stem } °suffix. Exx. 31-8, 40, 196.

e) 'stem+₁₁suffix ⇨ 'stem } °suffix. Exx. 16, 22-4, 29-30, 53-5, 79-80, 103-4, 107-9, 112, 122, 125, 183, 194, 197, 235-6, 241, 244.

f) ₁₁stem+₁₁suffix ⇨ ₁₁stem } °suffix. Ex. 17.

g) 'prefix+°prefix+₁₁stem ⇨ °prefix } °prefix } 'stem. Ex. 191.

h) 'prefix (+°prefix) + ₁₁stem + °suffix ⇨ °prefix (} °prefix) } 'stem } °suffix.

Ex. 39.

i) 'prefix + 'stem of a pers. pron. (→ pron. suffix) ⇨ 'prefix } ₁₁pron. suffix. Ex. 192-3.

NB: 1. The same rules are valid for strong (pausal) stress ¹¹, too. 2. In cases (a) and (b), a derived word (built with the suffix in question) may loosen its semantic ties with the source word, and then the stem may lose its ₁₁-stress, e.g. in *ba ₁₁raʔi'š-iy-at-i 'in capitali (parte) > *ba-ray'šiyati > בָּרְאֵי שֵׁי תִּי bārē'šīṭī 'at the beginning' (no. 188) or in *₁₁raʔi'š-iy-um > (morphological analogy) *₁₁raʔa'š-iy-um 'Haupt-...' > *raʔa'š-iy-um > רֵאשִׁי rā'šī 'principal' (ex. 189).

[4] a) $\text{'}\text{'}\text{'}\text{'}$ > $\text{'}\text{'}\text{'}\text{'}$ / $\text{'}\text{'}\text{'}\text{'}$ -. Exx. 131, 208.

b) $\text{'}\text{'}\text{'}\text{'}$ + $\text{'}\text{'}\text{'}\text{'}$ word \rightarrow $\text{'}\text{'}\text{'}\text{'}$ } } $\text{'}\text{'}\text{'}\text{'}$ word (both words forming a compound proper name). Exx. 218-9.

[5] $\text{'}\text{'}$ > $\text{'}\text{'}$ / $\text{'}\text{'}\text{'}\text{'}$ } } }-. Exx. 60-2, 114-5, 130, 218-9.

[6] Beginning of the apotony st. abs./determ. $\text{'}\text{'}\text{'}\text{'}\text{'}\text{'}$ - st. constr. $\text{'}\text{'}\text{'}\text{'}\text{'}\text{'}$. The phonetic starting point of the apophony could have been a rhythmical change: $\text{'}\text{'}\text{'}\text{'}\text{'}\text{'}$ $\text{'}\text{'}\text{'}\text{'}\text{'}\text{'}$ > $\text{'}\text{'}\text{'}\text{'}\text{'}\text{'}$ $\text{'}\text{'}\text{'}\text{'}\text{'}\text{'}$ (e.g. $\text{'}\text{'}\text{'}\text{'}\text{'}\text{'}$ 'bayatim '(a/the) fence of the house' >⁶ $\text{'}\text{'}\text{'}\text{'}\text{'}\text{'}$ 'bayatim, whence Hb. $\text{'}\text{'}\text{'}\text{'}\text{'}\text{'}$ 'gəḏer 'bayit). On another source of apotony see below rule no. 11c and pp. 181-2. The change formulated in rule no. 6 was selective: it operated in the words $\text{'}\text{'}\text{'}\text{'}\text{'}\text{'}$ > $\text{'}\text{'}\text{'}\text{'}\text{'}\text{'}$ 'gəḏer 'gəḏer 'fence', $\text{'}\text{'}\text{'}\text{'}\text{'}\text{'}$ > $\text{'}\text{'}\text{'}\text{'}\text{'}\text{'}$ 'yārēk 'thigh', $\text{'}\text{'}\text{'}\text{'}\text{'}\text{'}$ > $\text{'}\text{'}\text{'}\text{'}\text{'}\text{'}$ 'kā'tip- > $\text{'}\text{'}\text{'}\text{'}\text{'}\text{'}$ 'kā'tip 'shoulder', $\text{'}\text{'}\text{'}\text{'}\text{'}\text{'}$ > $\text{'}\text{'}\text{'}\text{'}\text{'}\text{'}$ 'yārēl 'having foreskin', and probably $\text{'}\text{'}\text{'}\text{'}\text{'}\text{'}$ > $\text{'}\text{'}\text{'}\text{'}\text{'}\text{'}$ 'kā'rēs 'bellow' (st. c. not attested in BHB. and suggested by MHB. st. c. and st. abs. $\text{'}\text{'}\text{'}\text{'}\text{'}\text{'}$ 'keres/keres id.), but not in others like $\text{'}\text{'}\text{'}\text{'}\text{'}\text{'}$ > $\text{'}\text{'}\text{'}\text{'}\text{'}\text{'}$ 'qēb 'heel' or $\text{'}\text{'}\text{'}\text{'}\text{'}\text{'}$ > $\text{'}\text{'}\text{'}\text{'}\text{'}\text{'}$ 'hā'cēr 'enclosure, court', etc. The phonetic factor responsible for this particular selection has not yet been discovered.

[7] $\text{'}\text{'}\text{'}\text{'}\text{'}$ > $\text{'}\text{'}\text{'}\text{'}\text{'}$ / $\text{'}\text{'}\text{'}\text{'}\text{'}$ -. Exx. 6-8, 70, 136, 149, 154, 164, 170, 218-9, 274-6.

[8] $\text{'}\text{'}\text{'}\text{'}$ > $\text{'}\text{'}\text{'}\text{'}$. Exx. 93, 135, 137, 150.

[9] $\text{'}\text{'}$ > $\text{'}\text{'}$ / $\text{'}\text{'}\text{'}\text{'}\text{'}\text{'}$ -. Exx. 1-11, 14, 16-7, 22-4, 29-30, 53-5, 64-5, 68-70, 76-7, 79-80, 84-6, 88-9, 94, 96, 103-5, 112-3, 121, 133-6, 147-9, 152-4, 156, 163-5, 167, 170, 173-4, 179, 184, 194, 197-9, 214, 218-22, 230, 234-6, 241, 244, 247, 251, 255, 262, 268-279.

[10] $\text{'}\text{'}\text{'}\text{'}\text{'}$ monosyllabic personal pronoun > $\text{'}\text{'}\text{'}\text{'}\text{'}$ °. $\text{'}\text{'}\text{'}\text{'}\text{'}$ pron. suffix / $\text{'}\text{'}\text{'}\text{'}\text{'}$ -. Exx. 3-5, 61-2, 69, 92, 102, 105-6, 107-113, 136, 143, 145, 198, 225-6, 264.

[11] a) $\text{'}\text{'}\text{'}\text{'}\text{'}$ > $\text{'}\text{'}\text{'}\text{'}\text{'}$ / $\text{'}\text{'}\text{'}\text{'}\text{'}$ -. $\text{'}\text{'}\text{'}\text{'}\text{'}$ > $\text{'}\text{'}\text{'}\text{'}\text{'}$ ~ (in case of functional importance of the last syllable and its vowel) $\text{'}\text{'}\text{'}\text{'}\text{'}$. Exx. 12-3, 15-6, 71, 74, 90, 138, 144, 146, 168-9, 173, 229, 231-2.

b) } } > } (under special semantic circumstances). Exx. 218-9 (cf. comment under ex. 218).

c) $\text{'}\text{'}\text{'}\text{'}\text{'}\text{'}$ > $\text{'}\text{'}\text{'}\text{'}\text{'}\text{'}$. Exx. 248a, 249a, 267. This syncope was the second source of the Hb. apotony (cp. above rule no. 6): in words like $\text{'}\text{'}\text{'}\text{'}\text{'}\text{'}$ 'battle' the st. abs. form did not undergo this change and later shifted its stress to the penultimate syllable (rule no. 14a): $\text{'}\text{'}\text{'}\text{'}\text{'}\text{'}$ 'battle' >^{14a} $\text{'}\text{'}\text{'}\text{'}\text{'}\text{'}$ > Hb. $\text{'}\text{'}\text{'}\text{'}\text{'}\text{'}$ 'war', while the st. c. (due to this syncope) was doomed to have another accentual structure: $\text{'}\text{'}\text{'}\text{'}\text{'}\text{'}$ >^{11c} $\text{'}\text{'}\text{'}\text{'}\text{'}\text{'}$ >^{14d} $\text{'}\text{'}\text{'}\text{'}\text{'}\text{'}$ > Hb. $\text{'}\text{'}\text{'}\text{'}\text{'}\text{'}$. This apotonic pattern spread to some other nomina like Hb. st. abs. $\text{'}\text{'}\text{'}\text{'}\text{'}\text{'}$ 'ten' - st. c. $\text{'}\text{'}\text{'}\text{'}\text{'}\text{'}$ 'šiš'šā 'six' - st. c. $\text{'}\text{'}\text{'}\text{'}\text{'}\text{'}$ 'šiš'šā 'woman' - st. c. $\text{'}\text{'}\text{'}\text{'}\text{'}\text{'}$, etc.

[12] $\text{'}\text{'}\text{'}\text{'}$ > $\text{'}\text{'}\text{'}\text{'}$ / $\text{'}\text{'}\text{'}\text{'}\text{'}$ -. Exx. 1, 6-11, 14-5, 19, 63-5, 68-70, 72, 74, 76-8, 81, 84, 86, 88-9, 91, 93-7, 99, 123, 129, 133-4, 137, 141, 144, 146-9, 151, 153-6, 164, 168-70, 175, 184, 199-201, 203, 205, 210, 214, 218-9, 221, 227, 230, 239, 247-8, 249, 250-2, 262-9, 271-9, 281.

[13] $\text{'}\text{'}\text{'}$ > $\text{'}\text{'}\text{'}$. Ex. 64.

[14] a) $\text{'}\text{'}\text{'}\text{'}\text{'}$ > $\text{'}\text{'}\text{'}\text{'}\text{'}$ / $\text{'}\text{'}\text{'}\text{'}\text{'}$ word, word with pronominal suffixes; word } pronominal suffix|| > $\text{'}\text{'}\text{'}\text{'}\text{'}$ ~ word } 'pronominal suffix|||. Exx. 3-5, 16, 41, 68, 92, 102, 104-14, 121-2, 125, 135-6, 145, 147-9, 156, 183-5, 194-5, 197-8, 225-6, 248, 249, 264-6, 279.

b) $\text{'}\text{'}\text{'}\text{'}$ > $\text{'}\text{'}\text{'}\text{'}$ / $\text{'}\text{'}\text{'}\text{'}\text{'}$ -. Exx. 17, 234.

c) $\text{'}\text{'}\text{'}\text{'}\text{'}$, $\text{'}\text{'}\text{'}\text{'}\text{'}$ > $\text{'}\text{'}\text{'}\text{'}\text{'}$ / $\text{'}\text{'}\text{'}\text{'}\text{'}$ -. Exx. 92, 116-120.

d) $\text{'}\text{'}\text{'}\text{'}\text{'}$ > $\text{'}\text{'}\text{'}\text{'}\text{'}$ / $\text{'}\text{'}\text{'}\text{'}\text{'}$ -. Exx. 98, 100, 186, 248a, 249a, 267.

e) * $\overset{\circ}{\text{m}}\text{'}\text{ } \text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ > $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ [i.e. in verbal forms like * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ timmu > קַבְרֵתֵם $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ ziknē'hem]. Exx. 29-30, 115.

f) (?) in cases of special formal importance of the vowel of the pronominal suffix (gender distinction) there are variant forms with metatony: * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ > $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ / - $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$, $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ > * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ / - $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$. Exx. 3, 69, 192-3.

[15] * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ > $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$. Ex. 64.

[16] a) * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ > $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$. Exx. 39, 65, 68-9, 101, 163-5, 167, 170-2, 174, 176-81, 196, 206-7, 214.

b) * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ > $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$. Ex. 67.

[17] $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ > $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$. Exx. 42-7, 204, 260.

[18] In prefixes and prefix groups:

a) * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ > α . Exx. 38, 82, 126-8, 132, 139;

b) * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ > u. Ex. 39, 261;

c) * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ > \tilde{a} . Exx. 39, 41, 182.

[19] * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ > * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$; * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ > * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$; * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ > * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$. In all other cases * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ did not change. Exx. 31, 32, 147-9, 151-2, 154-5, 157-161, 248-50, 253, 258-9.

[20] * α > a. Exx. 38, 82, 126-8, 132, 139.

[21] * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ > * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ (= * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$?). Exx. 70, 94, 164-5, 235-6, 251. The interpretation of * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ as a single phoneme * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ is valid unless the SamHb. forms (like 'kuw wās 'cup', 'rēpōš 'head', 'šūēfōn 'sheep and goats') find another explanation. Cf. § 7.2.16, § 12.3., comment to rule no. 21.

[22] * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ > \bar{o} ; as well as probably * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ > * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$. Exx. 15, 63, 70, 74, 81, 87, 94-6, 140-1, 144, 146, 153, 164-5, 200-3, 246, 251. The latter formula is necessary and valid on the condition mentioned in rule no. 21.

[23] a) * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ > \bar{a} ; * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ > \bar{a} . Ex. 55.

b) * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ > \bar{a} ; * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ > \bar{a} ; * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ > \bar{a} ; Exx. 49, 51-3, 79-80, 227-8.

c) * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ > \bar{e} . Exx. 72-3.

d) * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$, * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ > \bar{a} . Exx. 75, 242-3.

e) * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$, * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ > $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ (?); rule 22e may account for the final - \bar{e} in $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ 'lion' (if this is a generalization of the gen. form). Ex. 184.

f) * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$, * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ > \bar{e} ; * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$, * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ > \bar{e} ; * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$, * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ > \bar{e} . Exx. 50, 54.

g) * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ > \bar{u} . Ex. 76.

h) * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$, * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ > \emptyset / - \bar{o} , - \bar{u} , - \bar{t} ||. Exx. 74, 87.

i) * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ > \bar{t} / °, - $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$. Ex. 126.

j) * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$, * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ > \emptyset / - $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$. Exx. 82-3, 128, 139, 171.

k) * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$, * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ > * \emptyset / * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$. Exx. 231-3.

[24] (?) * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ > $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$. Ex. 78.

[25] a) * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ > $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$. Exx. 53-5, 59, 80.

b) * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ > $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$. Ex. 79.

c) * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ > * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ / $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ __. Ex. 57. But * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ of imprt. m. sg. remains, probably because this form got the subj. ending *-i|u by analogy with pS subj. (> CS new impf.).

d) * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ (= * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$) > $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$. Exx. 70, 94, 164-5, 251.

[26] a) * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ > * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ ~ m (in cases of functional pressure) * $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$ / - $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$, - $\text{\$}\text{\$}\text{\$}\text{\$}\text{\$}$. Exx. 3-4, 23, 40, 53, 55, 59, 61-2, 69, 80, 92, 108-9, 112-3, 117-8, 143, 195, 225-6, 235-6, 241, 244.

b) * $\}Cu >^m *_{\}Cu /_{-}\} ;$ this phonetic change occurred in the pronoun * $\}a'ni\}nu$ 'we' as well (though here *-nu does not follow any morpheme boundary), probably due to analogy with * $\}nu$ -forms. Exx. 54, 79.

c) * $\}Ci > *_{\}^{\circ}Ci /_{-}\}.$ Exx. 5, 24, 135, 145, 225-6, 264.

d) * $\}C\check{V}CV > *^{\circ}C\check{V}CV /_{-}\}.$ Ex. 233.

[27] a) * $\}^{\circ} > \emptyset /_{-}\}.$ Exx. 2, 21, 23-4, 29-34, 44, 49-50, 56, 85, 98, 100, 124, 141, 152, 157-9, 204, 209, 211-4, 220, 222, 237-8, 240, 248a, 249a, 255-7, 261, 270.

b) * $\}a > *_{\}a /_{-}\}.$ Exx. 3-4, 23, 40, 45, 53, 55, 59, 61, 69, 80, 92, 99, 108-9, 112, 235-6, 241, 244.

c) * $\}u > *_{\}u /_{-}\}.$ Exx. 54, 79.

d) * $\}i > *_{\}i /_{-}\}.$ Ex. 194.

e) * $\}VC_{\} > *_{\}VC_{\}.$ Exx. 41, 126-7, 132.

[28] a) * $i > *e /_{-}\}.$ Exx. 9, 29-30, 41, 66-7, 78, 84-6, 91-2, 96, 98, 115-21, 127-8, 132, 139, 153, 177, 185, 212-3, 211, 213, 236, 238. The apparent exception $\}im,r\bar{a}$ 'utterance, speech' is probably a Hb. derivation (built with the pattern $CiC,C\bar{a}$) rather than an inherited word.

b) * $u > *o, *u > *o /_{-}\}.$ Exx. 11, 31-4, 40, 44-6, 48, 57, 59, 100-1, 114, 133, 157-8, 178, 204, 220-2, 247, 261, 269-272.

c) * $i > *e /_{-}\}.$ Exx. 68, 214.

[29] * $Cwu > *Cu /_{-}\}.$ Ex. 88.

[30] * $\}Ca > *_{\}Ca \sim *_{\}Ca /_{-}\}.$ Exx. 3, 69, 92.

[31] a) * $\}C\check{V}\check{V} > *_{\}C\check{V}\check{V}; *_{\}C\check{V}\check{V} > *_{\}C\check{V}\check{V}.$ Exx. 26, 28, 39, 160-1, 196.

b) * $\}C\check{V}CV > _{\}C\check{V}CV.$ Ex. 81.

c) * $\}C\check{V}C\check{V} > *_{\}C\check{V}C\check{V}.$ Exx. 42-3.

[32] * $\}V > *^{\circ}V \sim *_{\}V.$ Exx. 102, 104-11, 136, 198, 200, 218-9.

[33] a) * $a > \bar{a} /_{-}\} & \bar{a} /_{-}\}; *i > \bar{e} /_{-}\} (except /_{-}\}) & \bar{a} /_{-}\}; *u > \bar{o} /_{-}\} (except /_{-}\}) & \bar{a} /_{-}\}.$ Exx. 3-5, 19-20, 25-8, 33, 35, 46-7, 69, 88, 93, 95, 97, 102, 105, 111, 113, 127, 129, 135-7, 142, 145, 147-9, 151, 154-6, 168-9, 172, 181-3, 192-3, 198, 205-6, 210, 223-4, 239, 245, 248, 249, 250, 253-4, 258-9, 264, 266, 279.

b) * $aw > *o /_{-}\}.$ Exx. 125, 262-3, 281-2.

c) * $i > \bar{i} /_{-}\}; *u > \bar{u} /_{-}\}.$ Exx. 225-6.

[34] * $\} > \emptyset /_{-}\}.$ Exx. 1, 4-16, 19-20, 33, 46, 62-5,68, 70-1, 74, 76-8, 81, 84, 86-7, 89-91, 93-7, 99, 111, 113-7, 119, 121-3, 125, 133-5, 137-8, 142-9, 151, 153-5, 162-5, 167-70, 172-82, 185, 195, 205-7, 210, 214-5, 218-9, 221, 225-32, 240, 245-8, 249, 250-2, 264-6, 268-9, 271-82.

[35] * $C? > C /_{-}\}.$ Ex. 82. For the fate of * $C?$ cf. ex. 268.

[36] a) * $at > \bar{a} /_{-}\}, '(\$)_{-}\}.$ Exx. 25, 51.

b) * $\} > \bar{\}.$ Exx. 147-9, 151, 154, 156, 248, 249, 266, 279.

c) (* $\} > *_{\} > \bar{\}.$ Ex. 234.

d) * $a? , *a? > \bar{a} /_{-}\}.$ Exx. 235, 237, 239-40.

e) * $e? > \bar{e} /_{-}\}.$ Exx. 236, 238.

f) (?) * $o? > \bar{o} /_{-}\}.$ Ex. 247.

[37] * $C: > C /_{-}\}.$ Exx. 29-30, 65, 68, 78, 91, 99-100, 114-7, 119, 120, 167, 174-8, 180, 185, 213-4.

[38] * $e > 'a, *o > 'a, *i > 'a, *i > 'a /_{-}H_{\}.$ This is a tendency rather than a strict rule. To formulate strict rules, we need additional information or research. Ex. 98.

- [39]** a) *e > *ε / ' _C₁C₂ (but not ' _C₁C₂ll), ' _C₁ll, ' _C₁C₂. Exx. 9, 54, 84-6, 128, 211, 267.
- b) *oC > ɔC / ° _i, ° _i-ll. Ex. 100.
- c) *\$CeC₁ll > \$CeC₁ll; *\$'Cenll > *\$'Cenll ~ *\$'Cenll; *₁CeC₁ll > *₁CeC₁ll [but *₁C' 'eC₁ll did not change]. Exx. 91, 114-7, 119, 121, 127, 185, 212-3.
- [40]** a) *'ε > 'a / _CC. Exx. 9, 54, 84, 211.
- b) *'iε > 'ia / _Cll. Ex. 85.
- c) *ξ > ã / ₁ll, 'll, 'll-ll. Ex. 68, not 214!
- [41]** a) *'i > *'e / ° _i, ° _i-ll. Exx. 3, 10, 31-7, 40, 48, 69, 81, 92-3, 137, 140-1, 143-9, 156, 168-9, 189, 196, 214-5, 219, 225-6, 251-2, 257, 264, 267, 274, 280-1.
- b) *° _i, ° _i > *° _i, ° _i. Exx. 36, 39, 41-3, 132, 138, 142-3, 162, 173, 197-8, 229, 245, 251-2.
- c) *₁HiCC > *₁HeCC. Exx. 34, 279.
- d) *'i > *'ē; *° _i, ° _i > *° _i, ° _i. Exx. 163-4, 170-3, 196, 215.
- [42]** a) *'aHC, *'āHC > 'aHaC, *'aHC, *'āHC > 'aHaC / _ll, where H = *'ɣ, *'ɣ, *'h, *'χ. Exx. 8, 273-4, 276-8.
- b) *'āhC > *'āhεC, *'āhC > *'āhεC / _ll. Exx. 7, 170, 275. This rule did not apply to *' ,āχC (< pS *' ,aχi, cp. ex. 276 בְּחַיִּי), which suggests that the changes labelled as 42 preceded the merger of *'h and *'χ.
- c) *'eHC > *'aHaC, *'eHC > *'aHaC, *' ,oχC > *' ,oχaC, *' ,oɣC > *' ,oɣaC, (?) *' ,oħC > *' ,oħaC / _ll. Exx. 96, 153, 271-2.
- d) *'ayC > 'ayiC / _ll. Exx. 122-3, 125, 183, 197.
- e) *Cy > *Cī / _ll. Exx. 85-6, 89, 128, 133, 220-2.
- f) in all other cases *'VCC > 'VCεC, *'VCC > 'VCεC / _ll. Exx. 1-2, 6, 9, 10-1, 14, 134, 139, 152, 163, 173, 179, 209, 211, 218-9, 248a, 249a, 267-70, 280. NB: In the verbal forms of pf. the change reflected by rule 42f was blocked by analogy (generalization within the paradigm of the pf.), so that the final consonant cluster was preserved (possibly followed by a vocoid *ə?): *CC >^m CC₁ / _ll. On phonological interpretation of the processes no. 42a-f cf. § 12.4 [rule no. 42]. For the fate of *' ,oħC (which belongs to no. 42f and not to no. 42c) cf. exx. 269-70. Hb. nouns of the type 'CohaC (e.g., זֹהָר 'zohar 'shining') are later derivatives (build with the pattern 'CoHaC) rather than inherited words.
- [43]** *'i > 'i / _i, _Clll. Exx. 46, 86, 173, 179.
- [44]** *'amll > *'āmll ~ *'amll. Exx. 175-6.
- [46]** a) *hū > w ~ hū / 'ī-ll. Ex. 104.
- b) *'āhū > 'āw ~ 'āhū / _ll. Exx. 102, 105, 136, 198.
- c) *' ,ayhū > ' ,aww / _ll. Exx. 106-7.
- d) *th > tt ~ th. Ex. 110.
- e) *'a'hε > 'ā / V(C)C-ll. Exx. 120-1.
- f) *° _i'hε > 'i / V(C)C-ll (but *° _i'hε / V(C)C-ll does not change: cf. *'a,bi 'šimmu > *'a,bi 'šimmu > *'a,bi 'himmu > *'a,bi 'hem > *'a,bi 'hem > אָבִי אָבִי 'hem 'their father'). Ex. 185.
- [47]** a) *ay > ē / ° _C, ° _i. Exx. 17-8, 107-8, 122, 124, 131, 150, 208, 233.
- b) *āw > ā / ° _i, ° _i-ll. Exx. 102, 105, 136, 198.
- c) *ay > ē / ' _i, ° _iC. Exx. 108-9.
- [48]** a) *ē > ē / ' _ll. Exx. 72, 129.
- b) *' ,eCāll > ' ,eCāll. Exx. 4, 108-9.
- c) *ay > ē / ' _ll. Ex. 184, 260.

- [49] a) *a_ww_{||} > *āw_{||}. Exx. 106-7.
 b) *y_yy_{||} > *ū_yy_{||}. Ex. 195.
- [50] a) *^lVC_{||}VC_{||} > *VC^lVC_{||}. Ex. 41.
 b) *^lVC_{||}VC_{||} > *VC^lVC_{||}. Ex. 132.
 c) *\$^l\$^lCeC_{||} > \$^l\$^lCεC_{||}. Exx. 29-30. This rule explains the vowel of the suffix in 2 pl. m. & f. of the Hb. perfect, except for that of the verbs III y (ל"י) (קָמַתְּם) *qam'tem*) which seems to be of analogical origin.
- [51] a) *^oe > *^ob / $\bar{V}C$, VC:, VCC-^lC₁, ^lC₁, ^lC₁, ^l\$^l\$; *^oe > *^ob / \bar{C}_1 -^lC₁, ^lCa, ^lCā, ^lCē; *^oe > *^ob / \bar{C}_1 -^lC₁, ^lC₁, ^lC₁. Exx. 81, 93, 137, 145, 192-3, 201, 203, 265-6, 274. NB: There are cases of a change *^oe >^m *^ob / \bar{C}_1 -^lC₁ in cases of morphological analogy only (exx. 192-3, 254 B [?], 264), hence this latter change cannot be considered a phonetic law.
 b) *^oe > *^ob / $\bar{V}C(C)$ -^lCV. Exx. 3, 41-2, 69, 81, 92, 144, 146.
 c) *^oa, *^oo > *^ob, *e > *b / \bar{C}_1 CV, ^lVC_{||}CV. Exx. 18, 26, 28, 131, 141, 150, 161, 196, 208, 214, 233.
 d) *^o > *^ob. Exx. 42-7, 204, 260.
 e) *^oC₁̄C₁r₁ ||C... > *^oC₁̄C₁r₁ ||C... > *^oC₁̄C₁r₁ ||C... (whence later >⁶⁰ *^oC₁̄C₁r₁ ||C...). Exx. 255-7.
- [52] *^o > V. Exx. 39, 41, 65, 68-9, 101, 163-5, 167, 170-2, 174, 176-82, 196, 206-7, 214-5.
- [53] a) *a > ā / \bar{C}_1 -^lCV. Exx. 12-3, 15-6, 19-25, 27, 56-9, 61-3, 71-2, 74-5, 90, 97, 102-3, 106, 109-11, 116-9, 138, 140, 151, 182-3, 185, 195, 199, 206, 218-9, 226, 229, 231-2, 235-9, 241-4, 248, 249, 252.
 b) *e > ē / \bar{C}_1 -^lCV, ^lC₁̄C₁-^lCV. Exx. 87, 144, 146, 210, 214.
 c) *_{||}a > _{||}ā, *_{||}u > _{||}ū / \bar{C}_1 . Ex. 120.
- [54] ^l\$^l\$_{||} > _{||}\$^l\$^l. Exx. 26, 28, 36, 39, 160-1, 196, 198.
- [55] a) *^oa & *^oo > b, *^oe > b / \bar{C}_1 -^lCV; \bar{C}_1 -^lCV. Exx. 12-3, 15-6, 29-30, 39, 60, 71, 73, 90, 98, 102, 104, 106, 110-2, 114-5, 138, 146, 168-9, 173, 183, 185, 194-5, 199-200, 202, 215, 218-9, 229, 240, 246, 251-2, 267.
 b) *^oa, *^oā > *^ob / \bar{C}_1 -^lCV. Exx. 131, 142, 200, 245-6, 252. In the same position *^oo did not change (e.g., in infinitive forms like *בַּרְצִיִּתְּךָ* *barצit'ħit*, cf. ex. 143).
 c) *^oo₁CV > *^ob₁CV ~^m *^oo₁CV ("Verschärfung"). Here C₁CV denotes a geminate on a syllable border. Exx. 36, 142-3, 160, 203, 205, 229, 245. "Verschärfung" occurred in cases of morphological pressure only (cf. § 12.3, discussion of rule no. 55c).
 d) *^oe > *^ob / \bar{C}_1 -^lCV. Ex. 208, 252.
- [56] *a, *ā > ε / \bar{C}_1 -^lCV, ^lC₁-^lCV. Exx. 1-2, 6-7, 9, 14, 84-5, 89, 134, 152, 163, 170, 209, 211, 218-9, 248a, 249a, 267-8, 275.
- [57] a) *ε > *a / \bar{C}_1 -H_{||} (where H = *ʕ*, *ħ*, *h*). Exx. 134, 211.
 b) *^o > *^o / \bar{C}_1 . Ex. 268.
- [58] *ā > a. Exx. 135-6, 149-50.
- [59] a) *^lεC₁ > *^lb₁C₁, *^lεC₁ > *^lb₁C₁ / \bar{C}_1 . Exx. 84-5, 89, 128.
 b) *^loC₁ > ^lʕ₁C₁, *^lHoC₁ > ^lħ₁C₁, *^lC₁oC₁ > *^lC₁b₁C₁. Exx. 133, 220-2.
 c) *^lāC₁ > *^lb₁C₁. Ex. 223.
- [60] *^ob & *^ob > *a (everywhere except / \bar{C}_1 -^lCV, \bar{C}_1 -^lCV). Exx. 3, 12-3, 15-6, 18, 26, 28-30, 39, 42-7, 69, 71, 73, 81, 84-5, 89-90, 92-3, 98, 102, 104, 106, 110-2, 114-5, 128, 131, 137-8, 141-3, 145, 150, 160-1, 168-9, 173, 183, 185, 188-9, 192-6, 199-205, 215, 225, 233, 240, 245-6, 251-2, 255-7, 260, 264-7, 274, 281.

- [61]** a) *_b > ä, *_b > ǣ / $\text{ḥ}^* \text{ḳ} \text{---} \text{CV}$, $\text{ḥ}^* \text{ḳ} \text{---} \text{C} \bar{\text{c}}$; *_{b,ḥ} C $\bar{\text{c}}$ > ä C $\bar{\text{c}}$, *_{b,ḥ} C $\bar{\text{c}}$ > ǣ C $\bar{\text{c}}$ / $\text{ḥ}^* \text{ḳ} \text{---} \text{Ḥ}$.
 Exx. 60, 202, 214, 218-9, 282.
 b) *_a > ǣ / $\text{ḳ} \text{---} \text{Ḥ}$, $\text{ḥ}^* \text{ḳ} \text{---} \text{C} \bar{\text{c}}$, $\text{ḥ}^* \text{ḳ} \text{---} \text{Ḥ}$; *_a > ǣ ~ ǣ / $\text{C} \bar{\text{c}}$, $\text{Ḥ} \text{CV}$: אַבּוּסָה, אַרוּזָה - f. from אַבּוּס, but אַמּוּנָה, אַמּוּנָה - pl. from both אַמּוּן and אַמּוּן, etc.). Exx. 201, 203-4, 214, 281.
- [62]** a) *_a > ä / $\text{H} \text{---}$, $\text{ḳ} \text{---}$. Exx. 60, 114-5, 199-200, 215, 223, 229, 255.
 b) in cases of morphemic analogy: *_a >^m ǣ /+ 0, u. Ex. 138.
 c) *_ḳ > Ø / $\text{---} \text{C} \bar{\text{c}}$, Ḥ (under certain, not yet defined, conditions). Exx. 71, 183, 188, 252.
- [63]** a) *_C C C C C V > C C C C V. Exx. 42-3, 131, 142, 208, 245-6.
 b) *_C C C C C V > C a C C V. Exx. 18, 150.
 c) *_C: a > C / --- , Ḥ , Ḥ (under certain, not yet defined, conditions, e.g. זְכָרוֹנוֹת, זְכָרוֹן [st.c.], וְיַהֲבִיחַ, וְיַדְבִּיר, הַמְבַּקְשִׁים, hambak'sīm < הַמְבַּקְשִׁים הַמְבַּקְשִׁים, etc., cf. BL HGHS 220). Exx. 128, 141.
 d) *_C C C C C V > C C C C V. Ex. 143.
- [64]** *_v > °V. Exx. 3-4, 23, 26, 28, 36, 39-40, 45, 53-5, 59, 61, 69, 79-81, 92, 102, 104, 110, 112, 118, 120, 144, 160-2, 167, 172, 174, 176-7, 179-182, 196, 207, 235-6, 241, 244, 246.
- [65]** a) *_H C C C > H C C. Ex. 154.
 b) *°H C C C > °H C C. Ex. 156.
 c) *_z C C > C C. Exx. 245-6.
 d) ? (a dialectal process) *_m C C C > *_m C C C / $\text{---} \text{C}$. Exx. 249, 250.
- [66]** a) *_z > a / $\text{C} \bar{\text{c}}$, $\text{H}^1 \text{C} \bar{\text{c}}$. Ex. 157.
 b) *_z > ε / $\text{ḳ} \text{---} \text{H}^1 \text{C} \bar{\text{c}}$, $\text{---} \text{H}^1 \text{C} \bar{\text{c}}$. Exx. 158-9.
- [67]** a) *_e > i / ° $\text{---} \text{C}$, ° $\text{---} \text{C}$; *_z > i Ḥ a / ° $\text{---} \text{C}$. Exx. 31-3, 35-7, 40-3, 48, 92, 126-7, 131-2, 140-2, 147, 151-2, 155, 168-9, 196, 208, 215, 249a. The symbols "i Ḥ a" mean a dialectal difference in the reflexes (cf., § 12.4, discussion of rules no. 19 and no. 67a).
 b) *_o > u / ° $\text{---} \text{C}$. Exx. 162, 169, 173, 229.
- [68]** a) *_h > hǣ, *_h > hǣ, *_z > zǣ, *_ḳ > ḳǣ / ° a $\text{---} \text{C}$. Ex. 157.
 b) *_h > hǣ, *_h > hǣ, *_z > zǣ, *_ḳ > ḳǣ / ° ε $\text{---} \text{C}$. Exx. 158-9.
 c) *_h > hǣ, *_h > hǣ, *_z > zǣ, *_ḳ > ḳǣ / ° ḥ $\text{---} \text{C}$. Exx. 197-8.
- [69]** a) *_ā C C C > a C C / H --- , ḳ --- . Ex. 200.
 b) *_a H C C C V > a H a C C V. Ex. 160.
 c) *_ε H C C C V > ε H ε C C V. Ex. 161.
- [70]** a) *_e C C > C C. Ex. 163.
 (?) b) *_o C C & *_u C C > C C.
 c) *_a C C > C C (under certain conditions, yet to be defined). Ex. 167.
 d) *_e C C > C C; *_a C C > C C. Exx. 164-6, 207.
 e) *_o C C & *_u C C > C C. Exx. 168-9.
 f) *_e C C > C C. Ex. 171.
 g) *_o C C & *_u C C > C C. Ex. 173.
- [71]** a) *_a h h > ā h, *_a h h > *_ε h h, *_a C C > *_ā C / $\text{---} \text{ā}$. Exx. 174, 176, 179.
 b) *_a h h > *_ε h h, *_a h h > *_ε h h, *_a C C > *_ε C C / $\text{---} \text{ā}^1 \text{C}$ V. Exx. 206-7.
 c) *_a h h > *_ε h h / $\text{---} \text{ḥ}$. Exx. 181-2.
 d) *_a h h > ā h / $\text{---} \text{e}$. Ex. 177.
- [72]** *_a C C > C C / $\text{---} \text{V}$. Ex. 178.
- [73]** *_i C C V > *_i C C V. Exx. 190, 200.

[74] *a > a / _ } Hǎ; *a > ε / _ } Hě; *a > ɔ / _ } Hĩ. The change occurs in new (or newly rebuilt) combinations of a nomen (substantive, numeral) with preceding proclitic agglutinated prepositions and conjunctions (bə-, lə-, kə- and wə-). The previous stage (-a } Hě-, etc.) is attested in Origen's Hexapla: βαεμουναθαχ [baʔǎmūnā'tāk] (Ps. 89.50) 'in thy (m.) belief', where α, as usual, transcribes ə (> הַתְּיָמָנָה בַּעֲרֵם מִן אֱלֹהִים, replaced in the canonical text, as usual, by a form with a gender-distinguishing ending: הַתְּיָמָנָה בַּעֲרֵם מִן אֱלֹהִים) (cf. Brønno SHMV 223). Exx. 216-7.

[75] *ħ > əħ, *ç > əç, *h > əh / *'ē, *'ī, *'ō, *'ū—||, *'ē, *'ī, *'ō, *'ū—||, *''ē, *''ī, *''ō, *''ū—|||. Exx. 95, 97, 142, 201. Henceforth ə symbolizes *pathach furtivum* (הַחֲפִזָּה פַּתַּח פִּרְטָנִים), i. e. a vocoid which was not phonemic at the epoch of its appearance, but later became a full-fledged unstressed vowel a.

[76] a) A dialectal process of the Northern dialect (reflected in the Tiberian vocalization): ā > ɔ. Exx. 12, 15, 19, 181-2, 206-7, etc.

b) ȳ (except for ā) > ȳ̄ (i.e., the opposition of long vs. short vowels was lost). Exx. 12, 15, 180, 206-7, etc.

[77] *çç > ç, *hh > h, *ħħ > ħ. Exx. 180-2, 206-7, etc.

On some sound changes in Post-Biblical Hebrew

The processes reflected in rules 76 and 77 belong to the latest period (Post-Biblical Hebrew = Middle Hebrew) prior to the invention of the Tiberian vocalization. They are not reflected in the transcription of Hebrew used here: we transcribe הַחֲפִזָּה and הַחֲפִזָּה as s̄ā'ḏē and məpəħ'hēḏ rather than sɔ'ḏɛ and məpəħ'hēḏ. This transcription differs from the situation reflected by the Tiberian vocalization in three points: (1) it indicates the length of vowels (lost by rules no. 76a and no. 76b), (2) it does not reflect the Northern Hebrew (Tiberian) labialization of ā to ɔ (rule no. 74a), (3) in cases of so-called "virtual gemination", where the geminated ç, h and ħ were still extant up to (or even later to) the loss of vowel length, it indicates them as geminated (unlike the traditional Romanized transcription of Masoretic Hebrew): הַחֲפִזָּה mih'her '(he) hurried', participle הַחֲפִזָּה məpəħ'hēḏ 'being afraid', הָיָהּ מִיָּצֵטּוּ 'they became less numerous' (Koh. 12.3), etc.