

New Perspectives in Biblical and Rabbinic Hebrew

EDITED BY AARON D. HORNKOHL AND GEOFFREY KHAN





<https://www.openbookpublishers.com>

© 2021 Aaron D. Hornkohl and Geoffrey Khan (eds). Copyright of individual chapters is maintained by the chapters' authors.



This work is licensed under a Creative Commons Attribution 4.0 International license (CC BY 4.0). This license allows you to share, copy, distribute and transmit the text; to adapt the text and to make commercial use of the text providing attribution is made to the authors (but not in any way that suggests that they endorse you or your use of the work). Attribution should include the following information:

Hornkohl, Aaron D., and Khan Geoffrey, eds. *New Perspectives in Biblical and Rabbinic Hebrew*. Cambridge Semitic Languages and Cultures 7. Cambridge: University of Cambridge & Open Book Publishers, 2021, <https://doi.org/10.11647/OBP.0250>

In order to access detailed and updated information on the license, please visit, <https://doi.org/10.11647/OBP.0250#copyright>

Further details about CC BY licenses are available at, <https://creativecommons.org/licenses/by/4.0/>

All external links were active at the time of publication unless otherwise stated and have been archived via the Internet Archive Wayback Machine at <https://archive.org/web>

Updated digital material and resources associated with this volume are available at <https://doi.org/10.11647/OBP.0250#resources>

Every effort has been made to identify and contact copyright holders and any omission or error will be corrected if notification is made to the publisher.

Semitic Languages and Cultures 7.

ISSN (print): 2632-6906

ISSN (digital): 2632-6914

ISBN Paperback: 978-1-80064-164-8

ISBN Hardback: 978-1-80064-165-5

ISBN Digital (PDF): 978-1-80064-166-2

DOI: 10.11647/OBP.0250

Cover image: Genizah fragment of the Hebrew Bible with Babylonian vocalisation (Num. 18.27-28, Cambridge University Library T-S A38.12; courtesy of the Syndics of Cambridge University Library). Genizah fragment of the Mishnah (Ḥallah 1, Cambridge University Library MS Add.470.1; courtesy of the Syndics of Cambridge University Library). Linguistic analysis of Ps. 1.1 (Elizabeth Robar). Images selected by Estara Arrant.

Cover design: Anna Gatti

FREQUENCY, ANALOGY, AND SUPPLETION: \sqrt{HLK} IN THE SEMITIC LANGUAGES¹

Jorik (F. J.) Groen

The verbal root \sqrt{hlk} , with the original meaning ‘to go’, is attested in almost every branch of the Semitic language family, including Hebrew. In most cases it behaves irregularly, exhibiting unexpected paradigms. The phonological changes responsible for the anomalous forms are often equally irregular and therefore *ad hoc*.

Irregular forms of \sqrt{hlk} are well known and many scholarly opinions on their appearance in the individual languages have been shared. Despite parallels between the various Semitic languages, an investigation from a general Semitic point of view

¹ This paper entails most of the content of the poster I presented at the conference *Biblical and Rabbinic Hebrew: New Perspectives in Philology and Linguistics*, Cambridge, 8–10 July 2019. I am grateful for the opportunity to elaborate on the matter’s theoretical background. I would also like to thank those who have reviewed this contribution at any stage of its development. Any remaining errors are, of course, my own. Abbreviations: Mb = Moabite, Ph = Phoenician, Pun = Punic, Ug = Ugaritic, DA = Deir ‘Allā, Aram = Aramaic (varieties), ClArab = Classical Arabic, Akk = Akkadian, Ebl = Eblaite, pf. = perfect, impf. = imperfect, pret. = preterite, impv. = imperative, inf. = infinitive, a.ptc. = active participle, X > Y = sound change, X → Y = analogical change.

is lacking. In this paper I will point out these parallels, albeit with a slight focus on Biblical Hebrew and its closest Northwest Semitic relatives. Moreover, I will make use of modern linguistic theory in order to explain why some developments are more likely to have happened than others.

1.0. The Data

We find verbal forms of $\sqrt{h}lk$ in Akkadian, Arabic, and almost all Northwest Semitic languages.² The table on the following page sums up the most common forms in each language.

In most languages the first radical *h* is missing or behaves irregularly in many forms, marked in the table with shading. The rationale behind this peculiar feature of $\sqrt{h}lk$ is the main subject of this paper and will be treated in detail below. Here I confine myself to select observations.

Excluded from the table are the Biblical Hebrew ‘strong’ formations, namely prefix conjugations that preserve the first radical, such as imperfect הָלַךְ and construct infinitive הֲלִיךְ . They are rare: the 19 such formations are contrasted with exactly 1000 ‘weak’ formations. Furthermore, their restricted attestation in presumed foreign or ‘non-Judahite’ passages, such as the book of Job (6x) and the Balaam narrative (3x), suggests that they are

² The root is not found in some scarcely attested epigraphic Northwest Semitic languages. In Modern South Arabian a trace of this root may be found in $\sqrt{t}lk$ ‘to lead (an animal by a rope)’ (Mehri *tłuk*, Jibbali *etlĕk*, and Soqotri *tʕlĕk*), which can be explained as a causative derivative of $\sqrt{h}lk$ (Kogan 2015, 573). Ethiopic attestations of $\sqrt{h}lk$, e.g., Tigre *halkä* ‘to exert oneself, to die’ and Tigrinya *haläkä* ‘to toil, to get weary’ are borrowings from Arabic (Kogan 2015, 234–35, fn. 689).

Table 1

| | BH | Mb | Ph/Pun | Ug | DA | Aram | CIArab | Akk | Ebl |
|----------|-----------------|---------------------------|--|----------------------------|---------------------------|-----------------------|------------------|---------------------------|-----------------------------------|
| | 'to go' | 'to go' | 'to go' | 'to go' | 'to go' | 'to die' ^a | 'to perish' | 'to go' | 'to go' |
| G pf. | <i>hālāk</i> | | <i>ylkt</i> _{1S} | <i>hлк</i> | <i>hлкw</i> _{3P} | <i>hлк</i> | <i>halaka</i> | | |
| impf. | <i>yālēk</i> | | <i>t[ʔ]k</i> _{3FS} [?] | | | | <i>yahlīku</i> | <i>īllak</i> ^b | |
| pret. | <i>wayyālēk</i> | <i>ʔhлк</i> _{1S} | | <i>ylk</i> | | [<i>yəhāk</i>] | <i>yahlīk</i> | <i>īllīk</i> | |
| impv. | <i>lēk</i> | <i>lk</i> | <i>lk</i> | <i>lk</i> | <i>lkw</i> _{MP} | | <i>ihlīk</i> | <i>alīk</i> | |
| inf. | <i>lēket</i> | | <i>lkt</i> | <i>lkt</i> | | [<i>məhāk</i>] | <i>hulk-</i> | <i>alākum</i> | <i>halākum/</i> <i>haʔākum</i> |
| | <i>hālōk</i> | | <i>hлк</i> [?] | | | | | | |
| a.ptc. | <i>hōlēk</i> | | <i>ʔlk</i> | <i>hлк</i> | | | <i>hālīk-</i> | | |
| Gt impf. | — | | | <i>yīlk</i> | | | <i>yahtalīku</i> | <i>ittallak</i> | |
| D impf. | <i>yahallēk</i> | | | | | <i>yhлк</i> | <i>yuhallīku</i> | | |
| C impf. | <i>yōlīk</i> | | <i>ylk</i> | <i>āšhлк</i> _{1S} | | | <i>yuhlīku</i> | <i>ušāllak</i> | |

^a G-stem perfect forms of *√hлк* are attested in Palmyrene and Nabatean Aramaic only, and at least in Nabatean the meaning is clearly 'to die' (Hoftijzer and Jongeling 1995, s.v. *hлк*). The use of the G-stem with this meaning is probably due to Arabic influence, but the euphemistic use of 'to go' for 'to die' is also attested in other Northwest Semitic languages (cf. English *gone* or *depart* in the same sense). Derivations of the G-stem with meanings that can be associated with 'to go' exist in various Aramaic varieties. The Aramaic meaning of the D-stem of *√hлк*, 'to walk (around)', concurs with the Biblical Hebrew *piʿel*.

style-switching features (cf. Rendsburg 2003, feature II.C.7).³ These forms have been linked to the Moabite consecutive imperfect *w'hlk* 'and I went' (Meshah^c lns. 14–15), but it should be noted that the strong consecutive imperfect is very rare, being attested only twice in Biblical Hebrew, of which וַיִּתְהַלֵּךְ 'and (fire/lightning) ran' (Exod. 9.23) may actually be a *pi^cel* form (Jouion and Muraoka 2011, §75g: *lectio mixta*) (the second is וַיִּהְיֶה 'and he passes' [Job 14.20]).⁴

Prior to the discovery of Ugaritic, the absence of the first radical was commonly explained as a result of dissimilatory loss of this consonant in the *hif^cil*, i.e., **hahlík* > **hālík* > הוֹלִיךְ , after which it spread to the *qal* by analogy with the I-*w* verbs (Praetorius 1882). Not only is it most unlikely for analogy to act from a less commonly occurring paradigm to a more common one (see §3.0), this explanation was also no longer tenable when

³ In the Balaam narrative another instance of forms of וַיִּהְיֶה that alternate between foreigners and speakers of Hebrew is use of the long imperative הִלֵּךְ by foreigners (Balaam, Balak, etc.), while God exclusively commands with the short variant וַיִּלֶּךְ . On the other hand, this can also be explained according to the theory that the long imperative expresses motion towards or for the benefit of the speaker (Fassberg 1999).

⁴ In relation to the Moabite imperative *lk* (Meshah^c ln. 14), where the first radical was lost, Blau (1979, 145–46) suggests that Moabite reflects a more archaic stage than Biblical Hebrew. Although it is indeed most likely that the elision of *h* started in the imperative (cf. below), I would argue that this development happened at an earlier stage (cf. Ugaritic *lk* and *ylk*). I consider it more likely that *w'hlk* does not represent an actual Moabite form, as the consecutive imperfect was not native to the spoken Moabite language, but a literary feature borrowed from the more prestigious Hebrew (Gzella 2011, 430).

Ugaritic turned out to have lost the first radical in the G-stem (impf. *ylk*, inf. *lkt*), but not in the C-stem (impf. *āšhlk*_{1s}). Although Praetorius' theory of dissimilation remains plausible for the *hif'il* (Meyer 1992, §78.9b), it is found nowhere else in Biblical Hebrew, and is therefore an *ad hoc* solution.⁵

2.0. Frequency

There are multiple ways in which frequency, more specifically token frequency,⁶ plays a significant role in language change.

⁵ The only other Biblical Hebrew causative form of a I-*h* verb, the *hof'al* הִפְּחֵהוּ 'it has (been) turned' (Job 30.15), was identified as an analogical restoration by Praetorius (1882, 311–12). On the other hand, the change **ʾa*'- > **ʾā*- (e.g., **ʾa*'*hab* > **ā**hab* > אָהַב vs. **yi*'*hab*- > יִיאָהַב), to which Praetorius links the dissimilation of **hah*-, is unrelated, as it is not a case of dissimilation; a glottal stop was regularly lost in syllable-final position (and only analogically restored in the less frequent verbs; Suchard 2019, 72). Note also that the *qal* prefix conjugation forms of I-*ʾ* virtually always (92 percent) preserves the first radical in spelling (e.g., יִאָכַל), whereas the -*ō*- (< **-aw*-) in the *hif'il* prefix conjugations of יִלְכֹּד (76 percent) and I-*w* verbs (75 percent) is relatively less often written with a *mater lectionis*.

⁶ It is very important in this matter to distinguish between token frequency, how often a phenomenon (word, sound, morpheme, etc.) is *used* in a language, and type frequency, which refers to how often a phenomenon *occurs* in a language (often based on dictionary counts). One could say that type frequency concerns *langue* and token frequency concerns *parole*. The distinction between the two is exemplified by regular vs. irregular verbs in English: almost 95 percent of the verbs are regular (type frequency), but attestations of irregular verbs outnumber

High token frequency can either stimulate or prevent formal change. This paradox is explained by the Frequency–Implementation Hypothesis:

Changes which require analysis—whether syntactic, morphological, or phonological—during their implementation affect the least frequent words first; others affect the most frequent words first. (Phillips 2001, 134)

‘Analysis’ in this context is to be understood as the fragmentation of an utterance into individual words, morphemes, or sounds as performed by the speech recipient in order to interpret the message. Common phrases and words, however, are perceived as single units rather than sequences of elements (Phillips 2001, 127). An example of this is the grammaticalised use of American English *I am going to*, which can be phonetically reduced to [‘aimə̃ə] without becoming misunderstood (Bybee 2001, 11). From the speaker’s perspective, recurring utterances of a word or phrase undergo ‘automation’ like other highly repetitive behaviours, and become less clearly articulated (Bybee 2015, 41). At the other side of the conversation, phonetic reduction (i.e., deficient articulation) generally causes interpretation issues for the listener, but this does not apply to contextually predictable words—and the more frequent a particular form, the more predictable it is.

The other aspect of the Frequency–Implementation Hypothesis, the stability of frequent words, can be attributed to the fact that “the more token frequency a form has, the better

those of regular verbs (token frequency) (Berg 2014, 209). Unless otherwise specified, in the remainder of this paper the label ‘frequency’ refers to token frequency.

and earlier it is stored in the brain” (Dressler 1985, 333). As such, frequent forms are accessed more easily, irrespective of their morphological irregularity (Bybee 2015, 95). A speaker of English will reproduce the past tense of *to go* correctly as *went* without hesitation, whereas he needs to derive the past tense form of a verb like *to vamoose* or *to abscond*. Because *went* occurs frequently, it is stored in the human mind as a lexical item separate from the present tense of *to go*. Hence, very frequent forms are resistant to paradigmatic levelling, which is the most significant change that requires morphological analysis (cf. Phillips 2001, 134). For instance, as word-initial **w* had become **y* in Proto-Northwest Semitic, Biblical Hebrew stative I-*w* verbs like **√wqd* > יָקַד ‘to burn’ were reanalysed as I-*y* verbs on the basis of the forms where it had changed, e.g., the perfect **waqada* > **yaqada*, causing the analogical replacement of word-internal **w* with **y*, such as the imperfect **yiwqadu* → **yiyqadu* > יִיָּקַד ‘it will burn’. The frequently occurring **yiwkalu* ‘he will be able’, however, did not undergo this analogical levelling, resulting in the form יִיָּכַל (Blau 2010, §§1.16.2, 1.16.4). Similarly, נתַן ‘to give’ is the only III-*n* verb in which the third radical is assimilated to a following consonant, e.g., נָתַתִּי ‘I gave’ vs. שָׁכַנְתִּי ‘I dwelt’; the verb’s high frequency blocked a morphological analysis *nātan* + *-tī* (cf. Blau 2010, §4.3.8.3.4).

In conclusion, frequently occurring forms exhibit consistent but irregular phonetic reductions that are resistant to paradigmatic levelling.

The verb for ‘to go’ (i.e., denoting basic motion) belongs to the most basic lexical stratum of every language and is uttered

very often. Within the selection of Biblical Hebrew discourse clauses⁷ (based on the annotations of Van Peursen, Sikkell, and Roorda 2015) $\text{qal} \text{ } \text{h} \text{ } \text{h} \text{ } \text{h}$ ranks among the six most frequently used verbs. Among the forms of this verb the 2ms $\text{h} \text{ } \text{h}$ (and morphological variants, 140 attestations) and 2mpl $\text{h} \text{ } \text{h}$ (83) imperative forms are the most common forms, accounting for more than a quarter of all *qal* forms of $\text{h} \text{ } \text{h} \text{ } \text{h}$ in direct speech (774 in total). This aligns with the paradigmatic independence that is found with imperatives, in particular basic directives like ‘go!’, ‘come!’, ‘give!’, ‘take!’, all over the world (cf. Veselinova 2006, 139; Maiden, Swearingen, and O’Neill 2009, 105–6).⁸ Hence, it is by no means surprising that this form is phonologically reduced throughout Northwest Semitic. At some stage the **h* in **hlik*,⁹

⁷ High-frequency-induced developments are based on occurrences in the spoken language. As the differences in the use of verbal forms between narrative and discourse clauses in Biblical Hebrew are clear (cf. consecutive imperfect vs. imperative), it is a necessity to distinguish these for any frequency analysis.

⁸ Besides token frequency, the paradigmatic autonomy of imperatives can be attributed to their acquisition in a pre-morphological phase in several languages, including Modern Hebrew (Berman 1985, 268). Because the language learner is not aware of a verbal paradigm, “[imperatives] are at this stage indistinguishable from interjections” (Maiden, Swearingen, and O’Neill 2009, 106).

⁹ Some may prefer to reconstruct a bisyllabic form, such as **halik* or **hilik* (e.g., Blau 2010, §4.3.5.2.4.1), as is probably the proto-form of Akkadian *alik*. However, the exact reflex of the form is irrelevant: irregular phonological reduction can just as well account for the loss of an entire (unstressed) syllable **ha-*.

standing in a phonetically unstable position, was dropped.¹⁰ Due to a lack of data, it is impossible to date this development more accurately than somewhere between Proto-Semitic and Proto-Northwest Semitic;¹¹ at least the Akkadian imperative *alik*, probably going back to **halik*, did not participate. Akkadian does show another irregular phonological reduction in the paradigm of *alākum*: original **h* exceptionally assimilated to an adjacent consonant, e.g., *illik* < **yihlik-*, *ittalak* < **yihtalik-* (or **yithalik-*; Kouwenberg 2010, 546, fn. 114).¹² Most likely, this assimilation first occurred in the most frequent form where **h* stood before a consonant, for instance the preterite **yihlik-*, later spreading to other forms, presumably on analogy with I-*n* verbs.¹³

¹⁰ Blau (2010, §3.3.5.5.2; cf. 1979, 145 fn. 14) even appears to assume that the root-initial *h* was lost in the qal imperative of all I-*h* verbs, later being restored by analogy (e.g., **hpuk* > **puk* > 𐤐𐤒). Although it is phonetically not unlikely that the cluster-initial position was too unstable for a glottal consonant, there is no evidence pointing towards this unnecessary sound law.

¹¹ If the Modern South Arabian causative root \sqrt{tlk} ‘to lead (an animal by a rope)’ is indeed related to \sqrt{hlk} (see fn. 2 above), it hints at the loss of *h* in the shared ancestor of Modern South Arabian and Northwest Semitic, i.e., Proto-West Semitic. However, these may reflect two parallel, yet independent, developments.

¹² That **h* does not regularly assimilate to an adjacent consonant in Akkadian can be seen from, e.g., *itawu* < **yihlawiw-* and *ālum* < **ahlum* (Huehnergard 2002, 170, fn. 26).

¹³ Aramaic forms like impf. 3ms *yhk* / ܝܚܟ (attested in Old, Imperial, and Biblical Aramaic) are understood by some as irregular outcomes of Proto-Northwest Semitic **yahlik-*. While the lateral could theoretically be subject to phonetic reduction due to high token frequency, there are

3.0. Analogy

In the past, historical linguistics has been accused of using analogy as a ‘wastebasket’ for linguistic changes that could not be explained by regular change or borrowings (Campbell 2013, 91). There are, however, several tendencies that aid us in understanding how and—perhaps most importantly—in which direction analogical changes operate (Bybee 2015, 115).

In the first place, forms that influence each other must be semantically related (belonging to the same morphological category) as well as phonologically similar. For instance, the past tense of verb A cannot be analogically reshaped directly on the basis of the present tense of verb B. In the second place, analogical change regularly operates from a basic to a derived form within a paradigm (Kuryłowicz 1945, 23). The basic form is identified as the ‘least marked’ in terms of phonology (short > long), morphology (stem only > with affixes), semantics (e.g., singular > plural; masculine > feminine; active > passive; present > past, future), and, above all, token frequency (frequent > rare). Bybee stipulates the following hypothesis:

High-frequency forms are resistant to change on the basis of the structure of other forms or patterns, and more likely

two reasons to question this assumption: (1) the stem-vowel *ā* (attested in Biblical Aramaic) does not agree with the characteristic *i* of *√hlk*; (2) it is very unlikely that the phonetically less stable **h* would be preserved in favour of **l* (Bybee 2001, 73–74). It goes beyond the scope of this contribution to treat the case of Aramaic ‘to go’ in depth, which I intend to do in a future publication (Groen forthcoming).

to serve as the basis of such change in low-frequency forms. (2015, 102)

Accordingly, after the collapse of the case systems, the Bronze Age Northwest Semitic languages generalised the presumably more frequent oblique plural ending **-īm/n* rather than the morphologically less marked nominative **-ūm/n*. Perhaps the most famous case of analogy in Biblical Hebrew verbal morphology is the introduction of *i* in the stem of the strong verb *hif^cil* imperfect יִקְטִיל on the basis of analogy to II-*wy* *hif^cil*, e.g., יָקִים:

(1) juss. **yaqim* : impf. **yaqīmu* :: juss. **yaqtīl* : impf. X; X = **yaqtīl*

It may seem unlikely that a rather limited verb class can influence the paradigm of a regular verb, but less so when we see that among *hif^cil* imperfect forms in Biblical Hebrew direct speech clauses the II-*wy* הָשִׁיב ‘to return (trans.)’ is the most common verb, with הָבִיא ‘to bring, insert’ being third.¹⁴

Thus, even though frequent forms behave independently of the rest of the paradigm, they can conversely serve as an analogical model for less frequent forms within the paradigm.

¹⁴ Unfortunately, the data (Van Peursen, Sikkell, and Roorda 2015) does not distinguish between imperfect and jussive or ‘short imperfect’ forms (consecutive imperfects are marked and have been excluded from this count). Although the distinction between these forms is essential in this analogy—only the II-*wy* (long) imperfect **yaqīmu* > יָקִים triggered the analogical change to **yaqrību* > יִקְרִיב (vs. jussive **yaqim* > יָקֵם and consecutive imperfect **wayyaqrīb* > וַיִּקְרַב)—the length of the theme vowel is obscured by such factors as verbal ending, object suffix, weak third radical (e.g., הָבִיא ‘to bring, insert’), and ambiguous origin (such as the frequent יִזְקֶה/יִזְקֶה; Huehnergard 2005, 467–68).

Given the morphological relationship between the imperative and the prefix conjugations (including the construct infinitive), we may expect the latter to be reshaped in analogy to the phonologically reduced imperative of $\sqrt{h}lk$, as shown in (2). After all, the imperative $*(h)lik$ is more basic than the imperfect $*ya-(h)lik-$ in terms of phonology, morphology, and frequency.¹⁵

(2) impv. $*qtl$: impf. $*yaqtl-$:: impv. $*lik$: impf. X; X = $*yalik-$

Additionally, the anomalous paradigm of $\sqrt{h}lk$ was associated with the scheme of the active I-*w* verbs already before Praetorius (1882). The active I-*w* verbs, most of which are motion verbs like $\sqrt{h}lk$ (e.g., $\sqrt{w}rd$ ‘to descend’, $\sqrt{w}\$’$ ‘to go out’, $\sqrt{w}\theta b$ ‘to sit down’, $\sqrt{w}bl$ ‘to bring’), are characterised by a biradical stem with stem vowel *i* throughout the Semitic languages.

Table 2

| | BH | Ph | Ug | Aram | ClArab | Akk |
|---------|--------------|------------------------|------------|---------------|---------------|--------------|
| impf. | <i>yēreḏ</i> | <i>yšb</i> | <i>yrd</i> | <i>yittib</i> | <i>yaridu</i> | <i>urrad</i> |
| impv. | <i>rēḏ</i> | <i>ld_{FS}</i> | <i>rd</i> | <i>teb</i> | <i>rid</i> | <i>rid</i> |
| inf.cs. | <i>rédeṭ</i> | <i>šbt</i> | <i>θbt</i> | — | — | — |

The similarities of this verb class with $\sqrt{h}lk$ may have formed an additional impetus for the previous analogical development and also explain the feminine ending *-t* for the construct infinitive (another hallmark of I-*w* verbs in Northwest Semitic):

¹⁵ Cf. Maiden, Swearingen, and O’Neill (2009, 100, with examples on pp. 102–3): “imperatives are ‘basic’ members of their paradigms, in that they tend both to *resist* intraparadigmatic leveling and sometimes to be the *source* of such leveling” (emphasis in the original).

- (3) impv. *rid : impf. *yarid/-u : inf.cs. *rid-t :: impv. *lik : impf. X : inf.cs. Y; X = *yalik/-u, Y = *lik-t

This development could have happened at any time in the history of the (West) Semitic languages after the loss of the first radical in the imperative. Only in Phoenician did it also spread to the *qal* perfect *ylkt*_{1s} */yalaktī/, parallel to the levelling in the paradigm of the verb √*ntn* ‘to give’ in both Phoenician and Ugaritic (impv. */tin/, impf. */yatin-/, pf. */yatan(a)/¹⁶). On the basis of Hebrew (Blau 2010, §3.3.5.5.1) and Phoenician (*yipʿil* pf. *ylk* and impf. *ylk*), I would postulate an additional extension of I-*w* forms to the causative stem of √*hlk* in Proto-Canaanite. The dissimilatory rule **hah-* > **hā-* (> *hō-*) put forward by Praetorius (1882) would explain the dissimilarity with Ugaritic *āšhlk*_{1s} */ʾašahlik-/, though it is unnecessary and otherwise *ad hoc* (see above). If it happened, it must have done so before Phoenician shifted the causative morpheme from **hi-* to **yi-*.

But were the imperfect forms of √*hlk* not frequent enough to resist paradigmatic levelling?¹⁷ It is possible that the loss of *h*

¹⁶ Note that the root-initial *y* also occurs in Phoenician and Ugaritic nominal derivatives of original √*ntn* (e.g., Punic *ytn* ‘giving, presentation’; Ugaritic *ynt* ‘gift, offering’), but not with √*hlk* (e.g., Ugaritic *hlk* ‘walk, course’ and *hlkt* ‘conduct, way of acting’); Punic *uulech* ‘traveller, guest’ probably reflects /(h)ōlik/, but theoretically could be the outcome of **yōlik* > */wōlik/.

¹⁷ Individually, the frequency numbers of imperfect forms of 𐤎𐤌𐤍 in direct speech do not come near those of the masculine imperative forms (2ms 140 attestations, 2mpl 83), with 3mp being most frequent (43), followed by the 1s (34), 2ms (33), and 3ms (30). Also the construct infinitive (62) and masculine singular participle (58) are more frequent.

in the imperfect **yahlik-* should indeed be attributed to a phonological reduction similar to that in imperative **hlik*, but there is evidence that the imperfect of $\sqrt{h}lk$ (and active I-w verbs) was not as paradigmatically independent as the imperative. If Biblical Hebrew יִלֵּךְ goes back to **yaylik-* (Joüon and Muraoka 2011, §75c; Suchard 2019, 250),¹⁸ it reflects insertion of a first root consonant **y*. This can only be explained by two-stage analogical levelling with I-wy verbs:

(4) pf. **qatal* : impf. **yiqtul* :: pf. **yarad* : impf. X; X = **yayrid*

(5) impv. **rid* : impf. **yayrid* :: impv. **lik* : impf. X; X = **yaylik*

This analogy is additional proof of the paradigmatic autonomy of the imperative, where the **y* was analogically added in neither I-w verbs nor $\sqrt{h}lk$. It is unclear whether this development happened only in (Biblical) Hebrew, as the Canaanite data provides no information on the prefix vowel of the relevant verbs. In Ugaritic, we can infer from 1s impf. *álk* / ʾalik- /, *árd* / ʾarid- / (vs. **ʾay- > / ʾē- / < ʾi >) and the attestation of syllabic representations of /yatin-/ (vs. BH יִתֵּן) and similar forms (Sivan 1985, 292) that this development did not occur. Given that in Biblical Hebrew this -ē- < **-ay-* is never spelled with a *mater lectionis* ʾ (contrasting*

¹⁸ Others attribute the šērē in the prefix to an original *i*-vowel in the prefix, e.g., **yilik* (e.g., Blau 2010, §4.3.8.4.12). This does not work for the active I-wy verbs, where the prefix vowel is preserved in case of remote stress, as in יִפְּרֹךְ ‘he shall know you’ (Joüon and Muraoka 2011, §75c), but this solution cannot be excluded for יִלֵּךְ , as suffixed forms do not occur with *qal* forms of this verb.

with I-y, e.g., דָּרַךְ ‘it will burn’), this analogy might be as late as the reading traditions.¹⁹

The forms of $\sqrt{h}lk$ attested in Arabic have not been discussed so far, as they are completely regular. The origin of this regularity is a semantic shift ‘to go’ > ‘to perish’ and a concomitant loss of frequency. No longer afforded the protection of high token frequency, any morphological anomalies were ousted by paradigmatic levelling.

4.0. Suppletion

In his thorough study of suppletion as a synchronic state (rather than a morphological process), Mel’čuk (1994) summarises his definition of suppletion as follows:

...for the signs X and Y to be suppletive their semantic correlation should be maximally regular, while their formal correlation is maximally irregular... (1994, 358)

Thus, e.g., the semantic difference between *go* and *went* is a regular grammatical difference (viz. ‘-/+ past tense’), but there is no rule in English grammar that can explain their morphological dissimilarity. After all, past tense is regularly marked by the suffix *-ed* (as in *play* : *played*) or vowel alternation (as in *swim* : *swam*). Biblical Hebrew *qal* הָשָׁתַּח ‘to drink’ has no *hif’il*, but instead the causative ‘to make to drink’ is expressed by using the *hif’il* הִשְׁתַּחֵּךְ. The formal correlation between ת and ק is, however, not “grammatically corepresentable” (cf. Mel’čuk 1994, 347).

¹⁹ The Babylonian vocalisation tradition has \bar{e} too: e.g., *yēšab*, *yēšēbū*; *yēlak*, *tēlēkī* (Khan 2013, 961).

While both of these examples are instances of suppletion through lexical change, a suppletive paradigm can also be the result of irregular and regular phonological changes.²⁰ This type of suppletion is generally rarer, as it is often eliminated via paradigmatic levelling (Kim 2019, 457). Moreover, most regular sound laws lead only to regular alternations. For instance, as post-vocalic spirantisation in Biblical Hebrew is a regular phenomenon, כָּתַב [k^hːʕˈθaːv] does not stand in a suppletive relationship to כָּתַבְּ [jiχˈt^hoːv], even though two of the three root consonants are phonetically different.²¹ The absence of the first radical of active I-*w* verbs in several forms of the paradigm is another alternation, as it occurs regularly in this class of verbs.

Contrastively, there is no allophonic alternation (**w* >) *y* : *h* in Northwest Semitic that can account for the difference between √*h*lk in the perfect, absolute infinitive, and participle, on the one hand, and the imperative, imperfect, jussive, and construct infinitive, which are derived from a root *√*w*lk, on the

²⁰ Rudes (1980, 660) regards suppletion of etymologically related forms, being the result of phonological change, ‘pseudo-suppletion’. In many cases, however, language users are unaware of any etymological relation. For instance, German *ist* and *sind* correspond regularly to their Proto-Indo-European forms **h₁és-ti* and **h₁s-énti*, but there is no reason to assume that speakers of the language understand the formal discrepancy—instead, they consider them different stems (cf. Kim 2019, 460).

²¹ The line between alternations and irregularities can be somewhat arbitrary. Is a morphological substitution shared by only two pairs regular or not? As this differs per case, Mel’čuk (1994, 378) leaves this up to the researcher, although he states that, theoretically, such a case is “not quite’ suppletive.” Note that his definition of suppletion allows for various degrees of suppletion (1994, 346, 376–81).

other. Biradical imperatives regularly correspond to a perfect with initial *n* (*śa' : *naśa'a) or *y* (*rid : *yarada), while perfect forms with initial *h* also regularly have it in the imperative (*haraga : *hrug). The meanings of the forms in which this alternation is distributed correlate like any other verb, with the differences being completely grammatical. As both conditions of Mel'čuk's definition are met, it follows that $\sqrt{h}lk$ and a hypothetical $\sqrt{w}lk$ were in a suppletive relationship in Proto-Northwest Semitic and to varying degrees in most of its descendants Ugaritic (not in the C-stem), Phoenician (also in the perfect), and Hebrew.

Further proof of this suppletive relationship is seen in the fact that the $\sqrt{h}lk$ forms did not participate in the Biblical Hebrew analogical levelling of I-*w* verbs presented in (4)–(5), whereas the imperfect and jussive did.

5.0. Conclusions

We have seen three linguistic phenomena that account for the anomalous forms of $\sqrt{h}lk$ in Biblical Hebrew and other Semitic languages. These explanations are not completely new; Blau (2010, §3.3.5.5.2; cf. 1979, 145, fn. 14) already pointed towards the role of high token frequency in the shortening of the imperative $\sqrt{h}lik > \sqrt{l}ik$; analogy has been commonly accepted for the similarity between $\sqrt{h}lk$ and active I-*w* verbs for a long time (e.g., Praetorius 1882); and Gesenius (1816, §86) already mentioned the suppletive character of $\sqrt{h}lk$. What is new, however, is the use of modern linguistic theories in order to explain the parallels and differences in this paradigm across Semitic languages.

The imperative **hlik* was likely the first form to behave anomalously, being phonetically reduced to **lik* because of its high token frequency, probably in an early stage of West Semitic. Subsequently, the prefix-conjugations (and the construct infinitive) were reshaped in analogy to the imperative and the morphologically and semantically similar active I-*w* verbs. This resulted in a paradigm in which affected forms, going back to a hypothetical **√wlk*, and unaffected forms, regularly formed from the root *√hlk*, are in a suppletive relationship with each other. Along the way we saw irregular, high frequency-induced assimilation (and subsequent analogy) in Akkadian, and paradigmatic levelling in Arabic, where the verbal forms had lost their paradigmatic independence due to a semantic shift.

By way of a summary, the following table provides a concise overview of the development of the G-stem forms of *√hlk* from Proto-Semitic to Biblical Hebrew. Phase I is not unlikely to correspond to Proto-West Semitic; the changes in Phase II occurred thereafter, the latest in Proto-Northwest Semitic; the loss of the first radical in the *hif^cil* (Phase III) can be postulated for Proto-Canaanite; Phase IV is the (probably Hebrew-only) insertion of **y* in the prefix of I-*w* verbs and *√hlk* by analogy with the strong verb, which could have happened at any time before the split of the Tiberian and Babylonian reading traditions.

Table 3

| | PS | Phase I | Phase II | Phase III | Phase IV | BH |
|-----------------------------|-----------------------------|----------------|-------------------|-------------------|---------------------|------------------------------|
| G pf. | * <i>halaka</i> | | | | | > <i>hālāk</i> |
| impf. | * <i>yahliku</i> | | → * <i>yaliku</i> | | → * <i>yēlék</i> | > <i>yēlēk</i> |
| juss. | | | | | → * <i>yélek</i> | > <i>yēlēk</i> |
| pret. | * <i>yahlik</i> | | → * <i>yalik</i> | | → * <i>wayyélek</i> | > <i>wayyélek</i> |
| impv. | * <i>h^(a)lik</i> | > * <i>lik</i> | | | | > <i>lēk</i> |
| inf.cst. (* <i>hlik</i> -?) | | | → * <i>lik-t</i> | | | > <i>lēket</i> |
| inf.ab. * <i>halāk-</i> | | | | | | > <i>hālōk</i> |
| a.ptc. * <i>hālik-</i> | | | | | | > <i>hōlēk</i> |
| D impf. | * <i>yuhalliku</i> | | | | | > <i>y^hhallēk</i> |
| C pf. | * <i>šahlika</i> | | | → * <i>hōléka</i> | | > <i>hōlīk</i> |
| impf. | * <i>yušaliku</i> | | | → * <i>yōléko</i> | | > <i>yōlīk</i> |

References

- Berg, Thomas. 2014. 'On the Relationship between Type and Token Frequency'. *Journal of Quantitative Linguistics* 21 (3): 199–222.
- Berman, Ruth A. 1985. 'The Acquisition of Hebrew'. In *The Cross-linguistic Study of Language Acquisition*, edited by Dan I. Slobin, I: 255–371. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Blau, Joshua. 1979. 'Short Philological Notes on the Inscription of Meša'. *Maarav* 2 (2): 143–57.
- . 2010. *Phonology and Morphology of Biblical Hebrew. An Introduction*. Linguistic Studies in Ancient West Semitic 2. Winona Lake, IN: Eisenbrauns.
- Bybee, Joan L. 2001. *Phonology and Language Use*. Cambridge Studies in Linguistics 94. Cambridge: Cambridge University Press.

- . 2015. *Language Change*. Cambridge Textbooks in Linguistics. Cambridge: Cambridge University Press.
- Campbell, Lyle. 2013. *Historical Linguistics: An Introduction*. 3rd edition. Edinburgh: Edinburgh University Press.
- Dressler, Wolfgang U. 1985. 'On the Predictiveness of Natural Morphology'. *Journal of Linguistics* 21 (2): 321–37.
- Fassberg, Steven. 1999. 'The Lengthened Imperative הִלְטֻךְ in Biblical Hebrew'. *Hebrew Studies* 40: 7–13.
- Gesenius, Wilhelm. 1816. *Hebräische Grammatik*. 2nd edition. Halle: Renger.
- Groen, Jorik (F. J.). Forthcoming. 'The Development of Lexical Suppletion in Aramaic'.
- Gzella, Holger. 2011. 'North-West Semitic in General'. In *The Semitic Languages: An International Handbook*, edited by Stefan Weninger et al., 425–51. Handbücher zur Sprach- und Kommunikationswissenschaft 36. Berlin: De Gruyter Mouton.
- Hoftijzer, Jacob, and Karel Jongeling. 1995. *Dictionary of the North-West Semitic Inscriptions*. 2 volumes. Handbuch der Orientalistik. Section I, The Near and Middle East 21. Leiden: Brill.
- Huehnergard, John. 2002. 'izuzzum and itūlum'. In *Riches Hidden in Secret Places: Ancient Near Eastern Studies in Memory of Thorkild Jacobsen*, edited by Tzvi Abusch, 161–85. Winona Lake, IN: Eisenbrauns.
- . 2005. 'Hebrew Verbs I-w/y and a Proto-Semitic Sound Rule'. In *Memoriae Igor M. Diakonoff*, edited by Leonid Kogan, Natalia Koslova, Sergey Loesov, and Sergey Tishchenko, 457–74. Babel und Bibel 2. Winona Lake, IN: Eisenbrauns.

- Joüon, Paul, and Takamitsu Muraoka. 2011. *A Grammar of Biblical Hebrew*. 2nd edition. Rome: Gregorian & Biblical Press.
- Khan, Geoffrey. 2013. 'Vocalization, Babylonian'. In *Encyclopedia of Hebrew Language and Linguistics*, edited by Geoffrey Khan et al., III: 953–63. Leiden: Brill.
- Kim, Ronald I. 2019. 'Suppletive Stem Distribution: A Diachronic Perspective'. *Transactions of the Philological Society* 117 (3): 455–70.
- Kogan, Leonid E. 2015. *Genealogical Classification of Semitic: The Lexical Isoglosses*. Berlin: De Gruyter.
- Kouwenberg, N.J.C. 2003–2004. 'Initial Plene Writing and the Conjugation of First Weak Verbs in Akkadian'. *Jaarbericht 'Ex Oriente Lux'* 38: 83–103.
- . 2010. *The Akkadian Verb and Its Semitic Background*. Languages of the Ancient Near East 2. Winona Lake, IN: Eisenbrauns.
- Kuryłowicz, Jerzy. 1945. 'La nature des procès dits «Analogiques»'. *Acta Linguistica* 5: 15–37.
- Maiden, Martin, Andrew Swearingen, and Paul O'Neill. 2009. 'Imperative Morphology in Diachrony: Evidence from the Romance Languages'. In *Historical Linguistics 2007: Selected Papers From the 18th International Conference on Historical Linguistics, Montreal, 6–11 August 2007*, edited by Etleva Vocaj, Fernande Dupuis, and Monique Dufresne, 99–108. Amsterdam Studies in the Theory and History of Linguistic Science. Series IV, Current Issues in Linguistic Theory 308. Amsterdam: John Benjamins.
- Mel'čuk, Igor A. 1994. 'Suppletion: Toward a Logical Analysis of the Concept'. *Studies in Language* 18 (2): 339–410.

- Meyer, Rudolf. 1992. *Hebräische Grammatik: Mit einem bibliographischen Nachwort*. Berlin: De Gruyter.
- Peursen, Wido T. van, Constantijn Sikkels, and Dirk Roorda. 2015. *Hebrew Text Database ETCBC4b*. DANS. doi.org/10.17026/dans-z6y-skyh
- Phillips, Betty S. 2001. 'Lexical Diffusion, Lexical Frequency, and Lexical Analysis'. In *Frequency and the Emergence of Linguistic Structure*, edited by Joan L. Bybee and Paul J. Hopper, 123–36. *Typological Studies in Language* 45. Amsterdam: John Benjamins.
- Praetorius, Franz. 1882. 'לִּהֵ and לִּי'. *Zeitschrift für die alttestamentische Wissenschaft* 2: 310–2.
- Rendsburg, Gary A. 2003. 'A Comprehensive Guide to Israelian Hebrew: Grammar and Lexicon'. *Oriens* 38: 5–35.
- Rudes, Blair A. 1980. 'On the Nature of Verbal Suppletion'. *Linguistics* 18 (7/8): 655–76.
- Sivan, Daniel. 1984. *Grammatical Analysis and Glossary of the Northwest Semitic Vocables in Akkadian Texts of 15th–13th C. B.C. from Canaan and Syria*. AOAT 214. Kevelaer: Verlag Butzon & Bercker and Neukirchen-Vluyn: Neukirchener Verlag.
- Suchard, Benjamin D. 2019. *The Development of the Biblical Hebrew Vowels*. *Studies in Semitic Languages and Linguistics* 99. Leiden: Brill.
- Veselinova, Ljuba N. 2006. *Suppletion in Verb Paradigms: Bits and Pieces of the Puzzle*. *Typological Studies in Language* 67. Amsterdam: John Benjamins.