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7 The Law of Attenuation and other cases of unstressed *a > *i

7.1 Introduction

Like ‘Philippi’s Law’ (chapter 6), the ‘Law of Attenuation’ is a cover term, used to describe several instances of the same phenomenon. The development that it refers to is related to Philippi’s Law in another way, too, as it is more or less its opposite: while the latter covers the shift of stressed *i > *a, the Law of Attenuation is said to change unstressed *a > *i in closed syllables.

We shall see that there is no one Law of Attenuation, but rather, several separate developments of *a > *i and *a > *e > *i. After a review of the literature, which will identify those cases in which the Law of Attenuation has been said to operate and examine various proposed sound laws, the remaining issues will be identified and discussed in detail.

7.2 Previous suggestions

7.2.1 Brockelmann (1908)

Brockelmann (1908) does not go into too much detail about the Law of Attenuation. On page 146, he states that short *a in closed syllables is coloured by surrounding consonants in Hebrew and Aramaic. Noting that “[the shift of *a to *i] seems to gain more and more ground everywhere in the younger tradition”¹ (ibid.), Brockelmann’s wording seems to acknowledge that this is the combined effect of several different developments. In what must be a late development, as it is not yet reflected by the Greek and Latin transcriptions, the Tiberian reading tradition “almost” (*fast*) only preserves *a before laryngeals, *l* and *r*, and geminates. Thus,

¹... scheint überall in der jüngeren Überlieferung ... immer weiter um sich zu greifen.

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while *a became *i in words like *midbār* ‘wilderness’ < **madbār*, cf. the Septuagint transcription $\mu\alpha\delta\beta\alpha\rho$, the *a is retained in words like *mal-āk* ‘messenger’, *ma-āyān* ‘source’, and *mattānā* ‘gift’. Brockelmann holds the same conditioning responsible for the different vocalization of *malke* ‘kings (construct)’ vs. *dibre* ‘words (construct)’, *lahmi* ‘my food’ vs. *zibhi* ‘my sacrifice’, etc. Another conditioning factor is mentioned on page 255: Brockelmann sees the non-operation of the Law of Attenuation before *i* in words like *taklit* ‘end’ as a form of dissimilation, as it does occur in formally similar words without following *i*, like *tīp-éret* ‘glory’.

The “almost” in Brockelmann’s formulation of the Law’s conditioning is imprecise, and consequently, the continued presence of *a > a in this environment, e.g. in *maṭmon* ‘treasure’, remains unexplained.

7.2.2 Bauer & Leander (1922)

Bauer & Leander (1922: 193–194) expand the categories of words in which the Law of Attenuation is said to have operated. Like Brockelmann (1908), they hold that the Law should have affected all short *a in closed, unstressed syllables, except those adjacent to gutturals or preceding *l* and *r*. They do not explicitly list all categories which should have been affected, but their examples include the first vowel of the *pi-el* perfect, like *pittah* ‘he opened’ besides Classical Arabic *fattaḥa*; the prefix vowel in *qal* and *niḗ-al* imperfects, like *yippāṭah* ‘it will be opened’ besides Classical Arabic *yanfatiḥu*; and unprefix nouns like *izzim* ‘goats’ besides *a* in the Classical Arabic singular *anzun*, an exception to the retention of *a following gutturals.

Bauer & Leander are not very confident about the conditioning, referring to “the random alternation between *a* and *i*”² (p. 194). Identifying reliable rules would be preferable.

7.2.3 Blake (1950)

Aiming to discuss all instances of *a/*i interchange (see chapter 6 for Philippi’s Law), Blake (1950) narrows down the conditions of the *a > *i shift. He starts off by establishing that some of the supposed examples of the Law of Attenuation should actually be reconstructed with *i (pp. 76–77): most importantly, he mentions cases like *yliḏtikā* ‘I have begotten you (m.sg.)’, adduced by Bauer & Leander

²Das regellose Schwanken zwischen a und i...

(1922), and notes that some *miqtāl* nouns might go back to a **miqtalum* pattern, attested in other Semitic languages as well, besides the more common **maqṭalum*. He then formulates a sound law to cover the remaining cases, stating it as follows:

The change from unaccented *a* to *i* takes place in a number of cases when a closed syllable containing the unaccented *a* is followed by another closed syllable also containing an *a* with either primary or secondary accent; in other words, it seems to be a process of dissimilation that takes place in types which may be represented by *qatqát* or *qatqàt*, changing them to *qitqát* or *qitqàt*. (p. 77)

In this way, he explains the *i* of the *nīp·al*, *pi·el* and *hiṗ·il* perfects, the nominal forms discussed by Bauer & Leander (1922), and several isolated nouns. Blake attributes the spread and occasional blocking of this sound change to analogy; the absolute state of **maqṭalum* nouns, for instance, should have yielded ***maqṭāl* in his account, but it analogically changed its first vowel to the **i* resulting from the sound change in the construct state **maqṭal* > *miqtal*. Additionally, as previous authors have also noted, “[t]he change is usually prevented by adjacent laryngeals [= gutturals] or *r*” (p. 78).

Blake provides an excellent discussion of all the various examples and possible exceptions to his sound law. Unfortunately, his explanation does not account for all the data. By limiting the sound change to words with a following (short) **a*, he must postulate a very large number of analogical changes, often with the less frequent form influencing the more frequent part of the paradigm. If the absolute state of the **maqṭalum* pattern should have yielded ***maqṭāl*, for instance, it is hard to explain why not one such form is actually attested, except where **a* precedes gutturals (like *maḥšāk* ‘dark place’), geminates (like *maddā·* ‘knowledge’) and *l* (like *mal·āk* ‘messenger’), the conditions already identified by Brockelmann (1908). More seriously, this postulated sound change cannot be dated without encountering some contradictions. If it affected *dibre* ‘words (construct)’, < **dabray* in Blake’s account, it must have preceded the contraction of unstressed diphthongs, as the word would otherwise have developed from **dabray* > **dabrē* > ***dabre*; but this is incompatible with the evidence from words like *meṭab* ‘best (construct)’ < **mayṭabu*, which must still have had **a* when its diphthong was contracted from **ay* > **ē*. While this, too, could be attributed to analogy, it is not a very elegant solution.

7.2.4 Rabin (1960a)

Much like Blake (1950), Chaim Rabin (1960a) discusses both Philippi's Law and the Law of Attenuation in one and the same article. In fact, his scope is even broader, covering the development of all historically short vowels. Aiming to provide a “diachronic–structural” (דיאכרוני-מבני) account of these developments (p. 181), Rabin posits that *a and *i merged into one phoneme, which he represents as /ə/, in all closed syllables (p. 182). “Thus, we can say that in closed syllables, the ‘small’ vowels [i], [ε], and [a] are merely variants of the phoneme /ə/” (ibid.).³

Rabin then considers the phonetic conditioning that determines the surface realization of this phoneme /ə/, which is usually *a* in stressed syllables (traditionally seen as the outcome of Philippi's Law) and usually *i* in unstressed syllables (traditionally seen as reflecting the Law of Attenuation). The details of Rabin's account need not concern us, as the basic premise upon which it rests cannot be maintained. The phonemic contrast between /i/ and *a* in unstressed syllables is clearly demonstrated by minimal pairs like *yir*ֿε ‘he will see’ versus *yar*ֿε ‘he will show’, very similar to examples cited by Rabin himself on page 172; in stressed syllables which did not undergo Philippi's Law, where *i is reflected by *e* (see chapter 6), the distinction was also maintained, cf. *ez* ‘goat’ versus *az* ‘strong’. While we may agree that *i and *a merged in syllables where Philippi's Law was operative, then, they remained distinct phonemes in some closed syllables, at least. No unconditioned merger of *i and *a can explain the attested shifts from *a to *i*.

7.2.5 Harviainen (1977)

Tapani Harviainen discusses the topic of attenuation at length in his book on the development of Hebrew vowels in unstressed, closed syllables. He takes a great deal of evidence into account, mainly focusing on the Palestinian and Babylonian vocalizations, Greek and Latin transcriptions, and post-Biblical Hebrew and Aramaic language varieties. On page 199, he concludes that attenuation originally took place in “certain verbal prefixes in Hebrew and in Aramaic”, an early, pre-Amarna Letters development. Other cases of *a > *i are to be distinguished from this first change. This having taken place in “certain dialects, either geographical or social, of spoken Hebrew”, the Hebrew reading traditions ended up with a variation between forms with *a and forms with *i, originating in different dialects

³ כן נוכל לומר, שבהברה סגורה התנועות הקטנות [ə], [i], [ε], אינן אלא ביצועים של הפונימה /ə/.

or sociolects. Which form was recorded in the vocalization, then, was a more or less arbitrary choice, made by the Masoretes of the various traditions.

This explanation is not implausible, but as is often the case with supposed cases of dialect borrowing, it is unfalsifiable. If the distribution of the *a > *i change could be explained from within one single dialect, that would be a stronger explanation.

7.2.6 Lambdin (1985)

In his article on Philippi's Law (see chapter 6), Thomas Lambdin touches on the subject of the Law of Attenuation, as it interacts with the former development in several ways. He mostly follows Blake (1950), seeing the Law of Attenuation as a *qaṭqát > *qiṭqát dissimilation rule, but he notes (p. 139) that the prefix vowel of the *nīp̄-al* perfect, treated as an example of this law by Blake, must be the result of a different development, for two reasons:

In the first place, the Niphal prefix *ni-* is shared by all of the Hebrew traditions, perhaps including Samaritan, and therefore belongs to a level earlier than the *qaṭqát > qiṭqát* of the preceding paragraph [which is limited to Tiberian Hebrew]. In the second place, there is a qualitative difference in the results of the presumed dissimilation: the treatment of the vowel before gutturals (e.g., *ne-ēbar*) and doubled consonants (e.g., *nittan*) is completely different from that of **maqtal > miqtāl* (e.g., *ma-ābār*, *mattān*). In general, the Niphal prefix *ni-* finds a closer phonetic parallel in the Qal Imperfect prefix *yi-* of the type *yiqtal*.

Lambdin cautions (p. 144) that while these *i vowels behave similarly, they need not have the same origin themselves, a point that is elaborated by Qimron & Sivan (1995).

7.2.7 Huehnergard (1992)

We have seen above that Bauer & Leander (1922) and Blake (1950) consider the *i* in the first syllable of the *pi-el* perfect to be the result of the Law of Attenuation, deriving from earlier *a. In an insightful article on the shape of the *pi-el* perfect in general, John Huehnergard postulates a separate sound law to explain this development, separating this case of *a > *i from those discussed by other authors; the general shape of the sound law is already hinted at by Lambdin (1985: 144).

Based on the cognate forms in Aramaic, *qattēl*, and Ugaritic, /qattīla/, Huehnergard reconstructs *qattīla as the Proto-Northwest-Semitic form of the *pi-el* perfect. As Phoenician also has an *i vowel in the first syllable of this verbal stem, and it can be posited for Amarna Canaanite based on the occurrence of *i in the closely related *hiḇ-il* perfect prefix, he concludes that this development of *a > *i is a Proto-Canaanite sound change. Its non-occurrence in the imperfect, *yVqattīlu > *yqattēl*, shows that it only operated in word-initial syllables. Huehnergard sees the same sound change as the source of the Hebrew *qittēl* adjectives like *ḥiwwer* ‘blind’, which should derive from *qittīlum. This pattern is not attested in other Semitic languages, but *qattīlum is, with similar semantics, in Akkadian. Interestingly, the expected outcome of *qattīlum, ***qattēl*, is not attested in Biblical Hebrew.⁴ Thus, this adjectival pattern seems to have shifted from *qattīlum > *qittīlum, parallel to the change in the vocalization of the *pi-el*. As associated *qattēlēt* abstracts, like *ḥawwērēt* ‘blindness’, could derive from a *qattīltum pattern (with *i > *a in the second syllable due to Philippi’s Law, see chapter 6), Huehnergard holds the sound change only to have affected stressed vowels, assuming that the relevant proto-language was stressed like Classical Arabic: thus, *qattīlum developed to *qittīlum, but *qattīltum remained unchanged. A distribution like that of the *qattīl(t)um nominals is found with the *qattūl(t)um patterns: ***qattol* < *qattūlum is not attested, while *qattōlēt* < *qattūltum is, leading Huehnergard to conclude that “a more general proto-Canaanite rule may be proposed: $a > V_1 / \#C' _ C_1 C_1 V_1$ ” (p. 226), i.e., stressed short *a* in a word-initial syllable preceding a geminate assimilates to the following short vowel. The newly created *i in the *pi-el* perfect was then analogically extended to the *hiḇ-il*: *yVqattīlu (*pi-el* imperfect) : *qittīla (*pi-el* perfect) = *yVhaqtilu (*hiḇ-il* imperfect) : *hiqtila (*hiḇ-il* perfect).

While this sound law adequately accounts for the data, the phonetics of its conditioning are strange: a stressed vowel undergoing assimilation while its unstressed counterpart does not is unexpected. Rather, we should expect stressed vowels, which are by definition more phonologically prominent than unstressed vowels, to be more resistant to assimilation, not more susceptible. The cases of *a/*i alternation in cases like *ḥiwwer* ‘blind’ besides *ḥawwērēt* ‘blindness’ do strongly suggest that this was a conditioned sound change, and stress is a likely candidate

⁴The one possible exception, *ḥaḥer* ‘other’, probably comes from *ḥaḥirum, cf. the plural *ḥaḥirim* < *ḥaḥirīma, not ***ḥaḥerim* < *ḥaḥḥirum. The presence of *a* rather than expected ***ā* in the singular, *ḥaḥer* instead of ***ḥāḥer*, is then due to the surrounding gutturals; see chapter 4 for more examples of *ā > *a* near gutturals. There are also the *pi-el* infinitive and imperative, *qattēl*, but these have preserved their *a due to analogy with the imperfect.

for the conditioning factor: unstressed vowels assimilating to a following stressed vowel, for instance, would be very plausible. For such a sound law to explain the data, however, we would need pre-Proto-Canaanite to have had a stress system which would have resulted in *[◌]awwírum (> *[◌]iwwírum) being stressed on the second syllable, while *[◌]áwwirtum was stressed on the first syllable. Not only is such a stress system completely ad hoc, but it is also typologically very unlikely. In stress systems that take syllable weight into account, heavy syllables tend to attract the stress, when present (Van der Hulst 2010: 38). If the system dictates that the stress fall on the word's first heavy syllable, both *[◌]áwwirum and *[◌]áwwirtum should be stressed on the first syllable; if the system dictates that the stress fall on the last heavy syllable, this results in *[◌]awwirúm and *[◌]awwirtúm, or, if the final syllable can never be stressed (as in the 'Classical Arabic' stress system; see chapter 4 for the artificiality of this notion, however), *[◌]áwwirum and *[◌]awwírútm, as Huehnergard suggests. No typologically plausible stress system would yield *[◌]awwírútm and *[◌]áwwirtum.

It may be significant, however, that precisely the words with the feminine suffix *[◌]-t- do not participate in the assimilation. Throughout the Semitic languages, this suffix is found to alternate with *[◌]-at-, a seemingly synonymous allomorph. In Hebrew, this alternation even occurs within paradigms of the same word, as in the absolute state *mamláḳá* 'kingdom' < *mamlakatum vs. the construct state *mamléḳet* < *mamlaktu and the suffixed forms like *mamlakto* 'his kingdom' < *mamlaktahu. Occasionally, the vowelless form of the suffix is analogically extended to the absolute state: for normal *maššebá* 'massebah' < *maššibatam, we find *maššébet* in the absolute state in 2 Sam 18:18. If the alternation found in *mamléḳet* and other words was originally more widespread, this may solve the problem of the conditioning of vowel assimilation. Assuming that words were regularly stressed on their penultimate syllable, as must be the case for some reconstructed stage of pre-Hebrew (see chapter 4), *[◌]awwírútm would have undergone assimilation of unstressed *a before a geminate to the following stressed *í, while the original absolute state *[◌]awwirátum did not undergo the change, as the stress did not immediately follow the syllable with *a in it. Later, the original non-absolute form of the stem, *[◌]awwirt-, analogically intruded into the absolute state, as in the case of *maššébet*. The rule may then be modified to state that *a assimilated in quality to a stressed, short vowel in the following syllable if a geminate intervened. Interestingly, as this is a Proto-Canaanite sound change, this

implies that the penultimate stress system of pre-Hebrew goes back to that stage of the language.

7.2.8 Qimron & Sivan (1995)

After a review of the previous literature, Elisha Qimron and Daniel Sivan note that the various cases of *a (> *e) > *i that are normally treated as the results of the Law of Attenuation (as by Blake 1950) can be separated into three different groups, reflecting at least three different developments (pp. 16ff.):

1. Cases that are shared by all of Northwest Semitic. This category is limited to the result of the Barth–Ginsberg Law (Barth 1894b: 4–6), which states that originally, the prefix vowel in the prefix conjugations of the G-stem (*qal*) was *i if the stem contained an *a (i.e. *yiqṭal-, as in Ugaritic and Amarna Canaanite), but *a elsewhere (*yaqṭul-, *yaqṭil-).
2. Cases that are shared by all Hebrew traditions, but not by all Northwest Semitic languages. This category is limited to the prefix vowel of the *niṣṣal* perfect, which is *neqṭal in Proto-Hebrew, but *naqṭala in Ugaritic and Amarna Canaanite.
3. Cases that vary between the various Hebrew traditions. This category is the main topic of the article.

First and foremost, Qimron and Sivan discuss nouns of the *miqṭāl* pattern and similar forms. They see this uniquely Tiberian case of attenuation as dissimilatory in nature, like Blake (1950) and Lambdin (1985). In their formulation, the first of two a-vowels⁵ in nouns with four consonants becomes *i* (p. 20): *CaCCaC > *CiCCaC and *CaCCāC > *CiCCāC. Thus, for example, *maḥṣar > miḥṣar ‘fortification (construct)’, *maḥṭāḥ > miḥṭāḥ ‘writing’. The sound change also operates in words in which the word-final syllable is open (p. 22): *taqwā > tiqwā ‘hope’. It is blocked before geminates (*maddā > maddā ‘knowledge’), following or preceding a guttural (*maḥbar > maḥḇar ‘ford (construct)’), in reduplicated nouns (*galgal > galgal ‘wheel’), and sometimes before *r* and *l* (*marḥā > marḥā ‘view’, but *qaryā > qiryā ‘village’); *a was analogically restored in the *hiṣṣil* feminine participle *maqṭélēt*. A few other words also resist the sound change

⁵*a, *ā, and, only explicitly included on page 35, *ε.

(p. 26), all of which are either loanwords (like *pat-baḡ* ‘dinner table’, from Persian) or are not stressed on either of the relevant a-vowels (like *mašmannim* ‘festival dishes’), a possibly relevant factor which the authors do not mention.

The rest of the article goes on to discuss several categories that might be considered to have undergone the Law of Attenuation, but which the authors wish to exclude from the sound law formulated above. The occurrence of *miqtol* nouns besides *maqtol* forms is attributed to an original difference in the prefix vowel (pp. 27–28). The *i* in plural construct states like *dibre* ‘words (construct)’ < *dabaray is argued to be an auxiliary vowel, not the result of attenuation, one of the arguments being that the Babylonian vocalization consistently has *i* in these forms, but *a* in non-attenuated forms like *maqṭāl* (Tiberian: *miqṭāl*; pp. 28–29). Apparent cases of attenuation in segolates are explained as morphological alternations, not the result of a phonological development (pp. 30–31), and *i* for normal *a* in verbal forms like *yliḏtiḵā* ‘I have begotten you (m.sg.)’ (besides *yālāḏti* ‘I have begotten’) is held to be the original vowel, which became *a* when stressed due to Philippi’s Law (pp. 31–33; see chapter 6); the latter explanation is also given for the feminine participle and other forms with the feminine *-t* suffix (p. 34). Finally, proper nouns are rightfully excluded from the investigation, as they can be shown to behave irregularly (pp. 33–34).

Qimron and Sivan offer a seemingly watertight sound law that explains the Tiberian change of *a > *i in *CaCCaC, *CaCCā(C) and *CaCCε nouns. The only condition that remains leaky is the law’s occasional non-occurrence before *r* and *l*. Additionally, not all of the explanations they give for other possible cases of *a > *i are as convincing, and some developments, like that of the *nip̄-al* perfect prefix, remain unexplained altogether.

7.2.9 Yuditsky (2010)

Qimron & Sivan (1995) state that the first vowel in construct state plurals⁶ like *dibre* ‘words (construct)’ is irrelevant to their topic; it is not the direct outcome of *a, but an auxiliary vowel which developed after the elision of unstressed, non-pretonic short vowels (dated to the third century CE by Beyer 1984: 128–136). This idea is taken up and developed in a recent article by Alexey Yuditsky. Listing all words attested in a *qVṭle* or *qVṭloṭ* construct state plural (pp. 64–65), he notes

⁶Including the form of the plural noun to which the ‘heavy’ second and third person plural suffixes are attached.

that in the Tiberian tradition, about half of them have an *a* vowel, while the other half have *i* (or ϵ , considered to be an allophone of /i/ here; *qṭl*- forms are mentioned but not considered). Yuditsky identifies three phonetic factors that are associated with an *a* vowel (p. 59):

1. If the second radical consonant is a guttural, the vowel is always *a*, e.g. *ba·āle* ‘lords (construct)’;
2. If the first radical is a guttural, the vowel is usually *a* (38 cases against 16 with /i/), e.g. *ʔabne* ‘stones (construct)’;
3. If the second radical is *r*, *l* or *n*, the vowel is usually *a* (44 cases against 13 with /i/), e.g. *malke* ‘kings (construct)’.

Additionally, 8 words that do not match these criteria have *a*, like *naḫšot* ‘lives (construct)’; all other words have an *i*-vowel, like *biḡde* ‘garments (construct)’. Yuditsky concludes that in the Tiberian tradition, the quality of the auxiliary vowel is mainly dependent on its phonetic environment.

As there are still some 34⁷ words that form the construct state plural with a different vowel than Yuditsky’s rules predict, the phonetic explanation does not cover all the data. The exceptions, however, could have taken their vowel from other forms of the same paradigm where it originated phonetically, in an analogical process of paradigmatic leveling. Thus, *pirdehem* ‘their mules’ should have *a* according to Yuditsky’s phonetic rules (***pardehem*), but it could have taken over the *i* found in the singular suffixed form, *pirdo* ‘his mule’. That the vowel must have been conditioned phonetically in some cases, at least, is shown by words like *ʔanše* ‘men (construct)’, as the associated singular, *ʔiš* ‘man’, does not have *a* anywhere else in the paradigm. For Yuditsky’s rules to hold up, then, all their exceptions must have the relevant vowel in some other part of the paradigm, which could then serve as the origin of an analogical vowel change. This seems to be the case. Of the eight words that have *a* for expected ***i*, for instance, seven have *a* (or **a*) in another part of the paradigm, e.g. *naḫšot* ‘lives (construct)’ from the singular *néḫēš* ‘life’ < **napš*. *šadmot* ‘terraces (construct)’, from *šdemā* ‘terrace’, however, remains problematic, as no *a* should occur in any other form of the word. A few other words appear to break the rules, but might take their vowel

⁷Three of the exceptions have a guttural first radical and *r*, *l* or *n* as their second radical, so the numbers given above cannot simply be added up.

from unattested forms of the paradigm; thus *ḥizqe* ‘strong (construct)’ from *ḥāzāq* ‘strong (m.sg.)’ with *i* after a guttural, possibly from unattested **ḥizqat̄*⁸ ‘strong (f.sg. construct)’, or *pirṣehen* ‘their breaches’ from *péreṣ* with *i* before *r*, possibly from unattested ***pirṣ-* before suffixes in the singular. The unexpected *i* before *l* in *yilḏe* ‘children (construct)’ may be explained by an additional, phonetically plausible rule that *i* occurs after *y*, even when *r*, *l* or *n* follows; the alternative form, *yalḏe* ‘idem’, would then be the result of analogy with the forms with **a* found in the rest of the paradigm, like *yélēḏ* ‘child’ < **yald*.

Morphologically different but phonologically similar parallels can be found in three other forms that have been seen as the result of attenuation: *dimḵem* ‘your (m.pl.) blood’ and *yēḏḵem/yēḏḵen* ‘your (m./f.pl.) hand’. As *dām* ‘blood’ and *yāḏ* ‘hand’ are both **qaṭum* nouns, their original **a* was in an open, unstressed, non-pretonic syllable in these forms, e.g. **damVḵémm*, just like the **a* in the construct state plurals discussed above. The *i/ε* that is attested in these forms, then, is another instance of the same auxiliary vowel, which obeys Yuditsky’s rules in these cases as well.

To sum up, the distribution of *a-* and *i-*vowels in construct state plurals is complex, but when allowance is made for the workings of analogy, Yuditsky’s rules, which have been shown to be tenable, go a long way towards an explanation. We are dealing with different reflexes of an auxiliary vowel that appeared after the elision of unstressed short vowels in the third century CE (Beyer 1984). As the development is shared by the Tiberian and Babylonian traditions (Qimron & Sivan 1995), it is probably to be dated earlier than the attenuation seen in **maqṭāl* > *miqṭāl* nouns and similar forms.

7.2.10 Summary

We have seen that many different cases of **a* (> **e*) > **i* have been identified by previous scholars. The following conclusions can be drawn from this review of the literature:

- The **a* > **i* change in **maqṭalum* and similar patterns seems to be nearly completely explained by Qimron & Sivan (1995). When the change occurs before *r* and *l* needs clarification.

⁸Itself with attenuated *i* < **a* due to Qimron & Sivan (1995)’s rule.

- The *i* in the first syllable of the *pi·el* and *hiḫ·il* perfects, as well as the development of *qatt̄ilum > qitt̄el adjectives, is adequately explained by Huehnergard (1992). The sound law can be made phonetically more plausible by changing the stress conditioning and the reconstructed stress system of Proto-Canaanite.
- The distribution of *a and *i vowels in construct state plurals is adequately explained by Yuditsky (2010). His rules also explain the occurrence of *i/ε* in *dimk̄em* ‘your (m.pl.) blood’ and *yεdk̄em/yεdk̄en* ‘your (m./f.pl.) hand’.
- The *a > *i change in the *niḫ·al* perfect prefix, the imperfect prefixes of the fientive *qal*, and in some segolate forms before suffixes must still be explained.

7.3 Remaining issues

7.3.1 Attenuation before *l* and *r*

Qimron & Sivan (1995: 25–26) list the examples and counterexamples of attenuation before *r* and *l* given in tables 7.1 and 7.2. To these, we may add attenuated *mirbaṣ* ‘resting place (construct)’, *mirzaḥ* ‘banquet (construct)’, *merḥāq* ‘distance’, *mirkēbet* ‘chariot (construct)’, and *mir·ε* ‘pasture ground’; and unattenuated *mar·ε* ‘sight’, *parbār* ‘court’, *parsā* ‘cloven hoof’, *yaldā* ‘girl’, *malkā* ‘queen’, *malmad* ‘goat (construct)’, *šalmā* ‘dress’, and *šalwā* ‘ease’.

Of these, some words must be excluded. *mirbā* and *šal·ānān* are probably corrupt (Koehler & Baumgartner 1994–2001: 967, 1502), and *sirpad* is of uncertain etymology. *karpas*, *tartān*, *parbār* and its plural *parwārim*, *mēṣar* and *meltāḥā* are late loanwords;⁹ if they were still current in spoken Aramaic at the time the Tiberian vocalization was codified, their known pronunciation may have prevented attenuation of their first vowel, or, contrarily, they may have been borrowed with an *i*-vowel. The non-attenuation of *dardar* and arguably *qarqa·* is already covered by Qimron & Sivan’s observation that attenuation does not take place in reduplicated syllables, and *·almān* is covered by their rule that it does not occur after gutturals. *·elgābiš* should not undergo attenuation either, as its first consonant

⁹Loaned from Sanskrit (by way of Persian?) *karpāsa-* ‘cotton plant’, Assyrian /*tartānu*/ ‘high official’, Persian *fra-bar* ‘court’ or a related Iranian form, Akkadian /*maṣṣāru*/ ‘guard’, and Akkadian /*maštaktu*/ ‘wardrobe’, respectively (Koehler & Baumgartner 1994–2001: 500, 1799, 962, 594).

Table 7.1: Attenuation and lack thereof before *r* according to Qimron & Sivan (1995)

attenuated		unattenuated	
BH	meaning	BH	meaning
<i>mirbā</i>	see text	<i>barqōnim*</i>	‘threshing sledge?’
<i>mirmā</i>	‘deceit’	<i>dardar</i>	‘thistles’
<i>mirmās</i>	‘trampled down pasture ground’	<i>karpas</i>	‘fine cotton’
<i>mirpaś</i>	‘muddied water (construct)’	<i>maršēpēt</i>	‘pavement’
<i>mirqāhat</i>	‘ointment mixture’	<i>marḥēšet</i>	‘cooking pan’
<i>mirśāʿat</i>	‘wickedness’	<i>marʾā</i>	‘vision’
<i>sirpaḍ</i>	‘stinging nettle’	<i>marḥaddim</i>	‘coverlets’
<i>pirḥah*</i>	‘brood?’	<i>markābot</i>	‘chariots’
<i>qiryā</i>	‘town’	<i>markbot</i>	‘chariots (construct)’
<i>merḥaqqim</i>	‘distant lands’	<i>marḥaqqim</i>	‘distant lands’
<i>merḥāb</i>	‘spacious place’	<i>tartān</i>	‘commander’
<i>merkāb</i>	‘saddle’	<i>parwārim</i>	‘courts’
<i>merkābā</i>	‘chariot’	<i>qarqaʿ</i>	‘floor’
<i>merqāhim</i>	‘scented herbs’	<i>sarʿappotāw</i>	‘boughs’
<i>merqāḥā</i>	‘ointment pot’	<i>śarʿappāy</i>	‘my disquieting thoughts’

*These are the attested forms in the Leningrad Codex; Qimron & Sivan write *pirḥāh* and *barqānim*, respectively.

Table 7.2: Attenuation and lack thereof before *l* according to Qimron & Sivan (1995)

attenuated		unattenuated	
BH	meaning	BH	meaning
<i>zilʿāpōt</i>	‘irritation’	<i>balʿāde</i>	‘except’
<i>bilʿādēkā</i>	‘except for you (m.sg.)’	<i>zalʿāpā</i>	‘irritation’
<i>bilʿāday</i>	‘except for me’	<i>zalʿāpōt</i>	‘fits (construct)’
<i>milḥāmā</i>	‘battle’	<i>malʿāk</i>	‘messenger’
<i>tilbōšet</i>	‘raiment’	<i>malʿākūt</i>	‘assignment (construct)’
<i>ʿelgābiš</i>	‘sleet’	<i>ʿalmān</i>	‘widower’
<i>mēlšar</i>	‘guardian’	<i>šalʿānan</i>	see text
<i>mēlqaháyim*</i>	‘snuffers’	<i>malqāḥéhā</i>	‘its snuffers’
<i>mēltāḥā</i>	‘wardrobe’		

*Qimron & Sivan and many manuscripts: *mēlqāḥáyim*.

Table 7.3: Attenuation and lack thereof before *r* and *l*

attenuated		unattenuated	
BH	meaning	BH	meaning
<i>mirmā</i>	‘deceit’	<i>marṣéṗet</i>	‘pavement’
<i>mirmās</i>	‘trampled down pasture ground’	<i>marḥéšēt</i>	‘cooking pan’
<i>mirpaś</i>	‘muddied water (construct)’	<i>marṣā</i>	‘vision’
<i>mirqāḥat</i>	‘ointment mixture’	<i>marḥaddim</i>	‘coverlets’
<i>mirśá·at</i>	‘wickedness’	<i>markāḇot</i>	‘chariots’
<i>qiryā</i>	‘town’	<i>marḥaqqim</i>	‘distant lands’
<i>merḥaqqim</i>	‘distant lands’	<i>sar·appotāw</i>	‘boughs’
<i>merḥāḇ</i>	‘spacious place’	<i>śar·appāy</i>	‘my disquieting thoughts’
<i>merkāḇ</i>	‘saddle’	<i>mar·ε</i>	‘sight’
<i>merkāḇā</i>	‘chariot’	<i>parsā</i>	‘cloven hoof’
<i>merqāḥim</i>	‘scented herbs’	<i>zal·āpā</i>	‘irritation’
<i>merqāḥā</i>	‘ointment pot’	<i>mal·āk</i>	‘messenger’
<i>mirbaṣ</i>	‘resting place (construct)’	<i>malqāḥéhā</i>	‘its snuffers’
<i>mirzah</i>	‘banquet’	<i>yaldā</i>	‘girl’
<i>merḥāq</i>	‘distance’	<i>malkā</i>	‘queen’
<i>mirkéḇet</i>	‘chariot (construct)’	<i>malmad</i>	‘goad (construct)’
<i>mir·ε</i>	‘pasture ground’	<i>śalmā</i>	‘dress’
<i>zil·āpōt</i>	‘irritation’	<i>śalwā</i>	‘ease’
<i>bil·ādékā</i>	‘except for you (m.sg.)’		
<i>bil·āday</i>	‘except for me’		
<i>milḥāmā</i>	‘battle’		
<i>melqaháyim</i>	‘snuffers’		

is also a guttural; it is attested with /a/ in Akkadian /algamešu/ and Ugaritic <algbt>, indicating a kind of precious stone, but the irregular correspondences between this word, its ‘cognates’ in other languages, and even alternative forms in Hebrew (*gābiš* and *kāpis*, also cf. Akkadian /gamēsu/), which identify it as a loanword, mean we cannot be sure it ever had *a in Hebrew to begin with. *tilbóšēt* does not have an a-vowel, so it does not belong in the current discussion. Finally, we may exclude the words with *šwā* or a *ḥāteṗ* vowel following the non-attenuated *a*, as attenuation never takes place in this context. This leaves us with the words listed in table 7.3.

Considering the data, a purely phonetic account of the distribution of *a* and *i/ε* seems impossible. That analogy must have played some role is shown by the occurrence of the doublet *marḥaqqim/merḥaqqim*; assuming both of these forms go

back to the same word, it seems sensible to see one form as the outcome of sound change, and the other as the result of analogy. The most economical approach, then, is to try and establish conditions that cover the majority of attested forms and are phonetically plausible, while accounting for the exceptions by positing reasonable analogies.

First of all, we may note that attenuation does not take place before unaccented¹⁰ *a*. Thus, *marḇaddim*, *marḥaqqim*, *sarʿappotāw*, and *śarʿappay* all maintain their *a*, as do the assorted non-loanword exceptions listed by Qimron & Sivan (1995: 26), *mašmannim*, *mamtaqqim*, *manʿammehem*, and *mašʿabbim*. The words that do have an attenuated vowel, like *mērḥaqqim*, can easily have taken it from the singular, like *mērḥāq*, based on the model of words that did not change their prefix vowel in the plural.

If the vocalization of the Leningrad Codex is to be taken seriously, the unaffixed form of the word ‘snuffers’ should be read as *mēlqaḥáyim*. This should go back to an earlier form with a geminate *ḥ, *malqaḥḥáyim. The suffixed form *malqāḥéhā* < *malqaḥḥéhā must then have undergone an otherwise unknown development of *aḥḥε > *aḥε > *āḥε. This is problematic; if we reconstruct the word as *malqāḥéhā, however, it has exactly the same vowels as *balʿādékā (see below), which does undergo attenuation. As no phonetically plausible explanation based on the different consonants in the two words is apparent, this would make it impossible to explain the different outcome of the *a in the first syllable. The problematic reconstruction as *malqaḥḥéhā should therefore tentatively be retained. Thus, the presence of unaccented *a and accented *ε in *malqaḥḥéhā do not seem to trigger attenuation; in *malqaḥḥáyim, however, the *a is accented, and the *a in the first syllable is attenuated to ε.

While *a only triggers attenuation when accented, then, forms like *bilʿādékā* show that even unaccented *ā (as in *balʿādékā) was enough to cause the change to *i* or *ε*. The non-attenuation of *malqaḥḥéhā shows that the accented *ε is not the conditioning factor here.

mērḥābā and the other forms of this paradigm show an interesting distribution, with *ε/i* in the singular and *a* in the plural. This is hard to match with the phonetic conditioning established so far, and analogy might be a more promising way of explaining the data. In the Hebrew Bible, the majority of singular attestations are in the absolute state (22, versus 5 in construct state or with suffixes, Even-

¹⁰As this sound change only affects the Tiberian tradition, it is probably late enough to speak of accentuation rather than stress.

Shoshan 1989), where attenuation may be expected to have yielded *markāḇā > *merkāḇā*, while the majority of plural attestations is in the construct state or before heavy suffixes (13 attestations versus only 4 in the absolute state), yielding forms like *markḇot*. Given this distribution, if the more common prefix vowel in each number was generalized, this should yield the attested forms. Taking the words with consonants other than *r* and *l* following unstressed *a into account, a similar explanation might hold for a problematic form which is not mentioned by Qimron & Sivan (1995), *mamlākā* ‘kingdom’. The majority of the attested forms of this word are forms without *ā* or accented *a*, like the construct state plural *mamlkōt*. As *mamlākā* is quite a frequent word, however, an analogical explanation is less convincing here than in the case of *merkāḇā*.

Analogy may also explain the non-occurrence of attenuation in the *qaṭlā* nouns listed above. While most *qaṭlā nouns underwent attenuation, new forms with restored *a could be derived from an associated masculine *qaṭl noun.¹¹ The process is nicely illustrated by a doublet of words for ‘ewe lamb’: attenuation yields *kabśā > *kibśā*, while the related masculine *kabś (> *kéḇēs*) ‘male lamb’ gave rise to a form with analogically restored *a, *kabśā*. Similarly, *yaldā* ‘girl’ can be based on *yald (> *yéled*) ‘boy’, and *malkā* ‘queen’ on *malk (> *mélēk*) ‘king’; the attenuated, non-analogical form of the latter is attested in the personal name *milkā* (Milcah). The masculine–feminine relationship is not as clear between *šalwā* ‘ease’ and *šalw (attested with a personal suffix in *šalwi* ‘my ease’), but an analogical derivation does not seem implausible. Finally, *parsā* ‘cloven hoof’ has a formal counterpart in *pars (> *péres*), a kind of unclean bird, but other than the shared relevance for dietary laws and the occurrence of both words in the same passage (Lev 11), it is hard to see a real semantic connection. Perhaps *parsā* took its *a* from its Aramaic cognate, *parstā* (attested with this vocalization in Syriac); as this is a term of religious significance, however, the direction of borrowing is unclear.

This leaves us with only a few words in which the non-occurrence of attenuation cannot be explained by the following vowels or analogical restoration. In the case of *mar·ā*, *mar·ε*, and *mal·āk*, the *·* following the *r* or *l* is a plausible inhibitor

¹¹Given the late date of the sound change, *qaṭlum nouns had probably already developed into *qéṭel, a development which is reflected in the Babylonian tradition as well as the Tiberian one. The *qaṭl form of these nouns would still be preserved before suffixes, however. For the sake of clarity, both the attested Tiberian form and their pre-segolization form will be cited.

of attenuation. This is confirmed by the lack of attenuation in *masʿat* ‘tribute (construct)’.

For both *malmaḏ* and *śalmā*, no analogical base for the retention of *a is available. A phonetic explanation based on the *lm* cluster following the *a* is made especially likely by the occurrence of an attenuated synonym of *śalmā*, *śimlā*. Both words go back to *śamlā, as is reflected by Classical Arabic *šamlatun*; *śalmā* underwent metathesis of *ml > *lm, while *śimlā* underwent attenuation. There are no unambiguous examples of attenuation before a *Cm cluster, as *mirmā* and *mirmās* could be formed with a *mi- prefix, rather than *ma-. As the evidence is scarce, this condition can almost be formulated as narrowly or broadly as one likes. Most conservatively, we may state that attenuation did not take place before *lm clusters; to push the conditioning as far as it will go, we could say that it did not take place before clusters of any consonant and a nasal, as there is no convincing evidence for attenuation or lack thereof before *n* at all.

maršēpēt and *marḥéšēt* remain unexplained. As in two other exceptions which are not mentioned by Qimron & Sivan (1995), *maṭwē* ‘yarn’ and *maswē* ‘veil’, their unattenuated *a* is followed by an *ε*. Attenuation did normally take place before accented *ε*, though, as is shown by the great number of *miqtélēt* and *miqtē* nouns. Perhaps these four exceptions have been vocalized as *hiṗ·il* participles, in which the *a was analogically restored, but there is no real semantic motivation to support this. The non-attenuation in *zal·āpā*, finally, defies explanation.

7.3.2 The *niṗ·al* perfect prefix

As is noted by Lambdin (1985) and Huehnergard (1992), the change of *a > *i in the *niṗ·al* perfect prefix must not be identified with the similar development in the first syllable of the *pi·el* and *hiṗ·il* perfects. For one thing, the conditioning is different: in open syllables, the *hiṗ·il* also has *i, as in *heqim* < *hiqīma ‘he erected’, while the *niṗ·il* has maintained its *a there, as in *nāsoḡ* < *nasōga ‘he turned back’. If Huehnergard is correct, however, the *i in the *hiṗ·il* was introduced analogically, both in open and closed syllables, so it could have spread to some categories in the *hiṗ·il*, but not in the *niṗ·al*. More convincingly, the sound changes are shown to have taken place at a different time by the evidence from Amarna Canaanite, which attests a *hiṗ·il* form with *i in *ḥi-iḥ-bi-e* /*hiḥbi·(a)*/ ‘he hid’ (EA 256:7), but *niṗ·al* forms with *a like *na-az-a-qú* /*naz·aqū*/ ‘they were rallied’ (EA 366:25).

While the fact that this change in the *nip̄·al* prefix is a separate development was noted by Lambdin (1985), its precise conditioning has not yet been established. Garr (1993) takes the origin of the *ni*-prefix in *na- as read (*pace* Koller 2013), and rightfully so, but does not discuss exactly how and when the change from the latter to the former took place. Qimron & Sivan (1995: 19) note that the change is shared by all Hebrew traditions and transcriptions, but not by Northwest Semitic in general or Amarna Canaanite, making it a later development than the Barth–Ginsberg Law (see below).

This sound change, then, must have operated at some point between Proto-Canaanite and Proto-Hebrew. To be precise, we are probably dealing with an original change of *a > *e, as is witnessed by the ε in Secunda forms like νεμσαλ (Tiberian *nimšal*) ‘it was like’ (Brønno 1943). The sound change only affected the *nip̄·al* perfect prefix,¹² as other instances of unstressed *a in closed syllables, like those discussed above, were preserved until later times. This may be attributed to phonetic characteristics of all these cases in which the sound change was not operative. The pattern of the *nip̄·al* perfect, *naq̄tal or *naq̄tala, would not have been matched by nouns at any time: noun stems ending in a single consonant would have already undergone tonic lengthening (see chapter 4) – like *maq̄tāl – or still have preserved their case endings, while those with short *a in their stressed syllable would have had a geminate or consonant cluster following it, unlike the single consonant of the *nip̄·al*. Furthermore, the sound change seems to have been operative in all closed syllables, including those closed by a guttural or a geminate, but not in open syllables: thus, *na·man > *ne·man > ne·man ‘he proved faithful’, *nattan > *nettan > nittan ‘it was given’, *naglā > niḡlā ‘it was revealed’, but *nasōg > nāsōg ‘he turned back’ and *namass > nāmās ‘it melted (pause)’ with preserved *a. We can therefore formulate a regular sound law: before a stressed, short *a in a word-final, singly closed syllable or a stressed, word-final *ā, unstressed *a in a closed syllable became *e; or formulaically, *a > *e / _CCáC#, _CCā.¹³

This sound change also seems to have affected the *nip̄·al* participle, *niq̄tāl* < *naq̄talum (cf. Amarna Canaanite *na-aq-ša-pu* ‘angry (m.sg.)’, EA 82:27’), which would violate the conditions we have just established. However, this participle can

¹²And seemingly that of the *nip̄·al* participle, on which see below.

¹³While strong *nip̄·al* perfects with a guttural first radical all have *ne*- in the prefix, there are a few III-wy forms like *na·ššā* ‘it was done’. This may indicate that the change in the strong *nip̄·al* prefix did not affect words with a word-final vowel, but that these rather participated in the same sound law as the *qal* imperfect prefix, discussed below.

easily have been analogically adapted to the shape of the perfect, based on the model of the semantically very similar stative *qal*. Considering pairs like *kābed ‘he was heavy’ : *kābēd ‘heavy (m.sg. participle)’, the *nīp̄·al* perfect *neq̄tal could plausibly have given rise to the associated participle *neq̄tāl. This analogical explanation seems preferable to a phonetic one, as it would be hard to explain why *naq̄tāl shifted to *neq̄tāl (attested in the Hexapla, see Brønno 1943: 107) while *maq̄tāl remained unchanged until much later.

7.3.3 The *qal* imperfect prefix

As was already mentioned, the Barth–Ginsberg Law (Barth 1894b: 4–6) states that the prefix vowel of the *qal* imperfect was originally *a if the stem contained *u or *i, as in *yaq̄tul- and *yaq̄til-, but *i if the stem contained *a, as in *yiq̄tal-. There is some disagreement about when exactly this state of affairs came into effect (Hasselbach 2004b). For present purposes, it is sufficient to note that the Barth–Ginsberg Law certainly applied in Proto-Northwest-Semitic, as it is reflected in Ugaritic (Ginsberg 1939), Amarna Canaanite (Rainey 1978), Hebrew, and Syriac.¹⁴

Like the *a > i change in the *nīp̄·al* perfect prefix discussed above, however, the change in Hebrew imperfect prefixes that should have *a according to the Barth–Ginsberg Law (e.g. *yaq̄tul > *yiq̄tol*) has been mentioned by many scholars, but a precise description is still lacking. Authors preceding Harviainen (1977) simply attributed it to the general tendency towards attenuation of unstressed *a, but as we have seen, this is not a single development. This change, then, must be described in its own right.

Phonetically, the sound change is similar to that in the *nīp̄·al* perfect prefix. The main difference is that it was not operative before gutturals: the distribution of *i and *a is still governed by the Barth–Ginsberg Law in I-guttural verbs, with statives like *yεḥērab* ‘it will be dry’ reflecting *i and fientives like *yaḥāroš* ‘he will plow’ reflecting *a. As in the *nīp̄·al*, though, *a became *e > *i before geminates, as in *yatten > *yitten* ‘he will give’. Unlike the change in the *nīp̄·al*, this change operated before any short vowel in the following syllable, not just *a, and also before the long, word-final vowel in III-wy imperfects like *yibnε* < *yabnē. Notably, *a was preserved in the *hiḫ·il* imperfect, as in *yaq̄til* < *yaq̄tīl, which shows that this

¹⁴Kossmann & Suchard (forthcoming) argue that the Barth–Ginsberg Law is much older than this and should be reconstructed for the shared ancestor of Proto-Semitic and Proto-Berber.

sound change was conditioned by the weight of the following syllable, and that the strong verb had already analogically adopted *ī (originating in II-wy verbs) in this part of the paradigm: in other words, *yaqṭīl did not shift to *yiqṭīl because the long vowel occurred in a closed and therefore superheavy syllable. Thus, the sound law can be formulated as follows: unstressed, short *a in a closed syllable, preceding a stressed, heavy, but not superheavy syllable, shifted to *e, except before gutturals; or formulaically, *a > *e / $_C^{[-guttural]}C\check{V}C\#, _C^{[-guttural]}C\check{V}\#$.

This sound change is shared by all Hebrew traditions, so it can be dated to Proto-Hebrew. Joüon & Muraoka (2009: 118, n. 3) cite Rainey (1996: II 35–36) for evidence that the change to *i is already attested in Amarna Canaanite, but in fact, Rainey states that this is not the case on pages 73–75. Forms like *yi-il₅-qé* ‘he took’ derive “from the adoption of Akkadian themes, either of the *iparras* or *iprus* type, to which the Canaanite consonantal person morphemes, *y-*, *t-*, and $\emptyset-$, were applied.” (p. 75) The change of *a to *e in the imperfect prefix should therefore be dated between Proto-Canaanite and Proto-Hebrew.

7.3.4 *a > *i in *qaṭlum nouns

The interchange between stressed *a and unstressed *i in many *qaṭlum nouns was already noted by Brockelmann (1908: 147). The example he gives, *zēbaḥ* < *zabḥ ‘sacrifice’ besides *zibḥi* ‘my sacrifice’, is not the most felicitous, however; Classical Arabic *dibḥun* ‘sacrifice’ makes it likely that this word goes back to *dibḥum, not *ḍabḥum, and that the *a in the unsuffixed form is due to Philippi’s Law (see chapter 6).¹⁵ Of the segolates that show this *a/*i interchange, those in table 7.4 can securely be reconstructed as *qaṭlum nouns based on cognates in other languages. These words all have *i* before suffixes, and, in the case of *mas* and *saḥ*, in the plural. Thus, ‘his grave’ is *qibro*, ‘bowls’ is *sippim*, etc.

The *a > *i shift seems to be conditioned by the accent. Any attempt to formulate a true sound law, however, runs into difficulties, as this change is almost exclusively limited to this morphological class; thus, nouns from other patterns and verbs maintain *a in nearly identical position. *missim*, for instance, can be contrasted with *massâḍ* ‘foundation’, *massâ* ‘trial’ and its plural *massot*, *massekâ* ‘molten image’, and yet other words with various vowels following *mass-*.

¹⁵Classical Arabic also has *ḍabḥun* ‘slaughter’, with *a*, but *dibḥun* is a better semantic match with the Hebrew.

Table 7.4: Unambiguous *qaṭlum nouns with *a/*i interchange

BH	meaning	cognates
<i>béṭen</i>	‘belly’	EA /baṭnu/, Arab. <i>baṭnun</i>
<i>yéṭer</i>	‘cord’	Syr. <i>yaṭrā</i> , Gə. <i>watr</i>
<i>mas</i>	‘forced labour’	EA /mass-/ Akk. /sappu/ and /šappu/
<i>saḫ</i>	‘bowl’	Akk. /sappu/ and /šappu/
<i>péreš</i>	‘gut contents’	JBA <i>partā</i> , Arab. <i>farṭun</i> , Akk. /paršu/
<i>qéber</i>	‘grave’	Arab. <i>qabrun</i> , Akk. /qabrum/

Counterexamples can be found for any plausible conditioning of this supposed sound change.

Qimron & Sivan (1995: 30–31) accordingly dismiss the apparent interchange. According to them, this is a morphological development, not a phonological one. They cite many examples of words with the same meaning, but a different segolate noun pattern in different Semitic languages – like ʾašpā ‘quiver’, Ugaritic <utpt>, Akkadian /išpatu/ – or even within Tiberian Hebrew, like *bósem* and *bésem*, both ‘balsam, perfume’. Hebrew forms with *i* for reflexes of *a in other languages, then, are not the result of a sound change from *a > *i, but simply go back to a historical *i.

This explanation is plausible for some cases of Hebrew *i* corresponding with reflexes of *a in cognates, as in the correspondence of ʿez ‘goat’ to Classical Arabic ʿanzun cited by Bauer & Leander (1922: 194). For the words given in table 7.4, however, it is not very convincing. It requires Hebrew to have had two by-forms of all of these words, with *qabr and *qibr, for instance, existing side by side with no difference in meaning. Then, later, these two separate words were merged into one, suppletive paradigm, the form with *i always being selected for forms where the vowel was unstressed and that with *a always taking the stressed position. This does not seem very likely.

When combined with the fact that Philippi’s Law applied to *qiṭlum nouns (see chapter 6), however, a simpler scenario is thinkable. In this scenario, the *qaṭlum nouns with *a/*i interchange were first shifted to *qiṭlum in a morphological change of the kind suggested by Qimron & Sivan. When stressed, their *i vowel was then affected by Philippi’s Law, eventually resulting in *a; or if the shift was made after the first phases of Philippi’s Law had already taken place, the *qaṭlum

nouns would have been adapted to the phonetically regular reflexes of *qīṭlum in use at the time. Thus, *qabr/*qabrō could have shifted to *qεbr/*qεbrō, based on phonetically regular *qīṭlum forms like *ṣedq/*ṣedqō ‘(his) righteousness’.

Alternatively, the change could have occurred at a relative late point in time, after the last stage of Philippi’s Law (more accurately, Blau’s Law, see chapter 6) had taken place and unsuffixed *qīṭlum nouns had become *qaṭl, merging with historical *qaṭlum nouns. *qīṭlum nouns that still preserved their *i (> *e) in suffixed forms would have provided a model for analogical introduction of *e to suffixed forms of original *qaṭlum nouns: *ṣadq ‘righteousness’ : *ṣedqō ‘his righteousness’ = *qabr ‘grave’ : *qεbrō ‘his grave’. This analogical account seems simpler than the one described immediately above, which postulates a lot of unmotivated morphological change, but both scenarios are possible. Either way, the *a/*i interchange in *qaṭlum nouns can be explained through non-phonological processes.

7.4 Conclusion

In the long prehistory of Biblical Hebrew, several separate changes of *a > *i took place. As the Secunda transcribes this vowel as ε in most words that had already undergone the change by that time, we are probably actually dealing with changes of *a > *e, with a later change of unstressed *e > i in Biblical Hebrew.¹⁶ The following instances of *a > *e or *i can be distinguished:

1. *a followed by a geminate consonant and a short, stressed vowel assimilates in quality to that following vowel (based on Huehnergard 1992). Thus, the *pi-el* perfect *qaṭṭila > *qiṭṭila, *qaṭṭilu(m) adjectives > *qiṭṭilu(m) (and *qaṭṭulu(m) adjectives > *quṭṭulu(m)). The *i vowel was analogically extended to the rest of the paradigm and to the *hiṭ-il* perfect. This change is shared with Phoenician and Amarna Canaanite and therefore probably dates back to Proto-Canaanite.
2. *a in a closed syllable, followed by a stressed a-vowel in a word-final heavy syllable dissimilates to *e: *a > *e / _CCáC#, _CCá#. Thus, the *niṭ-al* perfect *naṭṭal > *neṭṭal. The *e was analogically extended to the other persons

¹⁶This change of *e > *i is also attested in Aramaic (Beyer 1984: 138–140) and is thus probably an effect of the Aramaic vernacular on the Hebrew reading tradition.

and numbers of the *niḫ-al* perfect, and to the participle. This sound change probably postdates the first apocope and possibly postdates tonic lengthening, (see chapter 4), as **maqṭalum* > **maqṭāl* nouns were unaffected. It was not operative in Amarna Canaanite and probably goes back to Proto-Hebrew, as it is attested in all Hebrew reading traditions and transcriptions.

3. **a* in a closed syllable, followed by any stressed vowel in a word-final heavy syllable shifts to **e*, except before gutturals: **a* > **e* / $_C^{[-\text{guttural}]}C\acute{V}C\#, _C^{[-\text{guttural}]}C\acute{V}\#$. Thus, the *qal* imperfect **yaqṭol* > **yeqṭol*. The **e* vowel analogically spread to the second and third person plural and the second person feminine singular. This sound change must have operated somewhere in the same time frame as 2.
4. When **a* or **i* was deleted as the first of two unstressed vowels in open syllables, as in construct state plurals like **qaṭalē*, it was replaced by a full vowel, the quality of which was determined by the surrounding consonants (Yuditsky 2010). The resulting vowel was **a* if the preceding or following consonant was a guttural or before *r*, *l* or *n*, **i* elsewhere; **i* was also the result between **y* and **l* in *yilde* ‘children (construct)’. This phonetic distribution was often disturbed by analogical spread of **a* or **i* from other parts of the paradigm. The sound change must have taken place after the elision of unstressed, non-pretonic short vowels in the third century CE.
5. Unstressed **a* in a closed syllable dissimilates to **e* or **i* before following **ā* or accented **a* or **e*, either in the following syllable or later in the word, except in certain conditions (based on Qimron & Sivan 1995). Thus, **maqṭāl* nouns shifted to **miqṭāl*, their construct state **maqṭal* to **miqṭal*, etc. This change does not take place before or after gutturals, before geminates, in reduplicated syllables, before clusters of a consonant and *ṣ*, or before clusters of any consonant and a nasal; thus **maṣrāb* ‘west’, **aḳbār* ‘jerboa’, **mattān* ‘gift’, **dardar* ‘thistles’, **malṣāḳ* ‘messenger’, **śalmā* ‘dress’, etc., all remain unchanged. This sound change only took place in the Tiberian tradition and must therefore be very late. That it postdates the operation of Blau’s Law (see chapter 6) is shown by its operation in words like *mirbaṣ* < **marbaṣ* < **marbeṣ* ‘resting place (construct)’, cf. the associated absolute state *marbeṣ*.
6. The apparent **a* > **i* shift in **qaṭlum* nouns like *qéber*, *qibr-* before suffixes, is not a phonological development. Rather, it is either the result of a mor-

phological shift of these words to a *qitlum pattern, or of analogy with the latter, once their absolute states had become *qaṭl, merging with original *qaṭlum nouns. In the former case, the development is nearly impossible to date; in the latter, it must postdate the operation of Blau's Law, and must therefore be dated later than the fourth century CE.

Only a few words contradict these rules: *šadmōt* 'terraces (construct)', *marṣéṗēt* 'pavement', *marḥéšēt* 'cooking pan', *maṭwε* 'yarn', *maswε* 'veil', and *zal·āpā* 'irritation' should all have *i* instead of *a* in their first syllable. Given the large number of words that do follow the rules, however, the occurrence of a few exceptions, which may have received their attested vocalization through processes which can no longer be identified, is acceptable. Alternatively, the recent origin of the Law of Attenuation and the difficulty of identifying its phonetic conditioning may indicate that this is a case of lexical diffusion (see Introduction). Due to the previous cases of *a > *e, unstressed *a in closed syllables would have been somewhat rare, which may have triggered an irregularly spreading change to *e in the Tiberian tradition.