Philippi's Law and Other Cases of Stressed *i > *a

6.1 Introduction

In an 1878 article, F.W. Philippi mentions some cases where Biblical Hebrew has an *a* vowel for an original *i (reflected as *e* in Biblical Hebrew), like בַּת 'daughter' beside בֵּן 'son', or תֵּלַ֖דְנָה 'they/you (f.pl.) will give birth' besides תֵּלֵד 'she will give birth'. He concludes (p. 42) that the form of these words is the result of a sound law changing *i to *a in doubly closed, stressed, word-final syllables and in closed, stressed, penultimate syllables, which can be represented formulaically as *í > *á / _CC. This sound law would later come to bear Philippi's name.

While this seems like a very straightforward rule, things get more complicated once all the details are taken into account. On the one hand, there are many words that seem to have retained *i in the environment where Philippi's Law should have applied to them, e.g. צֵל < *ṭillum 'shade, shadow', לֵכְנָה < *likna 'go! (f.pl.)'. A more serious problem involves the dating of Philippi's Law. Philippi himself suggested that the sound change had already occurred in Proto-Semitic, citing a few possible examples from Gəʕəz. On the other hand, there are also indications that the sound change was a very late development that only affected some varieties of Hebrew, as it is not attested in the Hebrew in Greek transcription found in the second column of the Hexapla. Still, some scholars maintain that Philippi's Law must have been early, on the basis of the relative chronology with other sound changes which can be dated with more confidence. In this chapter, we shall examine the various formulations of Philippi's Law that have been proposed and try to account for the various apparent cases of *i > *a that can be found in Biblical Hebrew. We will see that a number of different developments operated in concert to change original *i vowels to *a* in stressed position. Partially following Lambdin (1985), we will limit the term 'Philippi's Law' to a relatively restricted change of stressed *e to *ɛ before two different consonants, which did not operate in the first syllable of polysyllabic words. Together with other cases of (secondarily) stressed *ɛ, these vowels then shifted further to *a* in a late change which we will refer to as Blau's Law.

6.2   Previous Suggestions

6.2.1   *Philippi (1878)*

In the process of reconstructing the Proto-Semitic word for 'two', the actual topic of his article, Philippi (1878) faces various conflicting forms in the separate Semitic languages. In order to decide which of these are original and which are secondary, he often goes on an excursion, discussing the historical phonology of an individual language. It is in one of these excursions that he concisely introduces the sound change that is the subject of this chapter. Arguing that the *i* in Classical Arabic *ṯintāni* 'two (f.)' (< *ṯinatāni* in his reconstruction) is original, he shows that the Classical Arabic change of pretonic *a to i (e.g. *tilmīḏun* 'student' < *talmīḏ, an Aramaic loanword) only occurred in originally closed syllables. The possible counterexample of Classical Arabic *bintun* 'daughter', corresponding to Biblical Hebrew בַּת, is false in his opinion: the Hebrew form does not show that Classical Arabic *bintun* comes from *banatun, but on the contrary, בַּת comes from an earlier *bint. Here, then, we have an example of a shift from *i > *a, which "in a doubly closed, stressed syllable, and also in a closed, stressed syllable which is followed by another syllable, is not at all uncommon in Hebrew, also in context"[1] (p. 42). As other examples, Philippi gives תֵּלַדְנָה 'they/you (f.pl.) will give birth' besides יֵלֵד 'he will beget', לֵדָה 'birth' besides לֶדֶת and לַת 'to give birth', both < *ladt, and similarly a supposed *תֵּנֶת (not actually attested) besides תֵּת 'to give'; that stress is a conditioning factor is shown by the retention of *i in an unstressed syllable, as in לִדְתִּי 'my giving birth'. Parallel to a few Gəʕəz forms which Philippi sees as examples of the same sound change, he adds כָּבֵד 'he was heavy' besides כָּבַדְתְּ 'you (m.sg.) are heavy', and גְּבִיר 'lord', גְּבִירָה 'lady', besides גְּבֶרֶת 'lady', possibly < *gVbart < *gVbirt < *gVbīrt.

   The main problem with Philippi's account is that of the absolute chronology, as was mentioned in the introduction: if Philippi's Gəʕəz examples are the result of the same development as the Hebrew ones, this must have taken place in Proto-West Semitic, yet Philippi's Law is not yet attested in the third-century CE Hexapla (Brønno 1943). Philippi's original statement of the sound change, then, may be too simplistic.

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1   *... ist ja im Hebr. auch ausserhalb Pausa in doppelt geschlossener und betonter Sylbe oder auch in geschlossener betonter, auf die noch eine Sylbe folgt, gar nicht selten ...*

6.2.2   *Barth (1887, 1889)*

In two articles in a series of *Vergleichende Studien*, J. Barth restates Philippi's Law and broadens it, applying it to more cases of *i > *a in Hebrew, as well as some examples from Syriac. In Barth (1887), he notes that the alternation also appears in the *qal* feminine active participle, which reflects *i when followed by the -*å* suffix, as in יֹולְדָה 'woman giving birth', but *a before *-t, as in יֹולֶדֶת 'giving birth' from older *yōladt. Additionally, he includes a few dubious examples of originally monosyllabic nouns, the most convincing of which is קֶרֶת 'town' < *qart < *qirt < *qīrt besides קִיר 'wall' < *qīr.[2]

Barth (1889), aiming to explain the apparent loss of *yaqṭilu imperfects in Hebrew and Aramaic, cites only half of Philippi's Law, namely the part which was originally formulated as applying to closed, penultimate syllables: the author states "that *ĭ* in a stressed, closed syllable, which is followed by another one, changes to *a* in Hebrew, as PHILIPPI has rightly repeatedly emphasized"[3] (p. 185). This allows him to include a group of nouns which show an *i/*a alternation in the construct state, such as זָקֵן 'old (m.sg.) (absolute)' besides זְקַן 'idem (construct)'. The close connection with the following word then makes the affected syllable count as word-internal (pp. 185–186). Barth also posits a law of dissimilation which may be paraphrased as $*CiC_1C_2iC > *CiC_1C_2aC$ (p. 190). This, then, explains the loss of *yiqṭil < *yaqṭilu imperfects, which were changed to *yiqṭal, except where the prefix had a different shape than $*CiC_1C_2$-, as in *yittin > יִתֵּן 'he will give'; in I-w roots (like *yēšib > יֵשֵׁב 'he will sit'); in geminate roots (like *yaginn > יָגֵן 'he will protect'); and in I-guttural roots (like *yaʔṭim > יַאְטֵם 'he will shut'), including weak I-ʔ roots (like *yōkil > יֹאכֵל 'he will eat (pause)').

That construct states like זְקַן were stressed, yet formed a phonological unit with the following word, is questionable, but not unthinkable. As Barth uses a similar formulation of the sound law to Philippi's original version, though, the same chronological objections apply. His dissimilation rule seems tenable, but it is distinct from Philippi's Law and the cases it covers should not be adduced as examples of the latter.

6.2.3   *Brockelmann (1908) and Bauer and Leander (1922)*

Brockelmann (1908, 147–148) continues the trend of applying an ever-broader version of Philippi's Law to more and more words. In Brockelmann's formulation, the sound change consisted of a change of *i > *a in stressed syllables

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2   For the semantics, cf. English *town* and German *Zaun* 'fence'.

3   *... dass ĭ in betonter geschlossener Silbe, der noch eine weitere folgt, wie Philippi mit recht wiederholt hervorgehoben hat, im Hebräischen in a übergeht ...*

which were already closed in 'Proto-Hebrew' (*Urhebräisch*). Besides adduc-
ing additional examples of the categories already identified by Philippi and
Barth, such as the place name גַּת, attested in cuneiform documents as /gimtu/,
he rightly concludes that Philippi's Law should have affected *qiṭlum nouns,
leading to a merger with *qaṭlum in the unsuffixed singular, which then sur-
faces in Biblical Hebrew as קֶטֶל. The state of affairs which resulted from this
sound change is maintained in words like צֶדֶק 'righteousness', reflecting *a, with
preservation of the original *i before suffixes, as in צִדְקִי 'my righteousness';
that the *i is original is supported by Classical Arabic *ṣidqun* 'truth(fulness)',
Gǝʕǝz *ṣǝdq* 'righteousness'. Often, though, one form of the stem was gener-
alized throughout the paradigm due to analogical leveling: thus words like
סֵפֶר/סִפְרִי '(my) document' (for *i, cf. Akkadian /šipru/ 'idem') restored the *i
in the unsuffixed state, while words like רֶגֶל/רַגְלִי '(my) foot' (for *i, cf. Classical
Arabic *riǧlun*) spread the new *a to suffixed forms as well. Like Barth, Brock-
elmann holds Philippi's Law to have affected some Aramaic dialects as well.[4]
Contrary to Barth (1889), though, Brockelmann sees the loss of *yaqtilu imper-
fects as a mainly morphological development: while imperfects like *yarbiṭu
(cf. Classical Arabic *yarbiẓu*) should have yielded Biblical Hebrew **יִרְבֵּץ, this
form has been replaced by the original jussive יִרְבַּץ < *yarbiṭ, a form which,
in Brockelmann's version of events, underwent Philippi's Law, changing its
*i > *a.

   Brockelmann's statement that Philippi's Law only affected originally closed
syllables suggests that it took place before the first elision of short word-final
vowels (see Chapter 4), closing unaffected syllables in words like זָקֵן 'he was old'
< *ḏaqina. We have already seen that such an early operation of Philippi's Law
is hard to square with its non-occurrence in the Hexapla (Brønno 1943). In fact,
some of Brockelmann's new examples furnish us with more evidence against
an early operation of Philippi's Law, from the Septuagint. Compare Biblical
Hebrew גַּת 'Gath', צֶדֶק 'righteousness' (both mentioned above) and מֶלֶךְ 'king'
< *malk < *milk[5] to the Septuagint transcriptions γεθ and μελχισεδεκ,[6] all with
ε. That this ε does not simply render Hebrew /a/ is shown, for instance, by the
transcription of the etymological *a of שֶׁבַע 'seven' < *šabʕ, cf. Classical Ara-
bic *sabʕun*, spelled with an α in the place name βηρσαβεε 'Beersheba'. Thus, the

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4   Fassberg (2013) objects to his identification of Philippi's Law in modern Ṭuroyo, however, not-
    ing that it does not regularly operate in nouns; apparent shifts of *i > *a* in the verbal system
    must then be due to morphological change.

5   Cf. Phoenician /milk/, e.g. in the personal name /milkyatōn/ '(the god) Milk has given',
    Friedrich and Röllig (1999, 43). See also Van Soldt (2003).

6   I.e. the personal name Melchizedek, Tiberian מַלְכִּי־צֶדֶק.

transcriptions indicate that at least at the time of the Septuagint, these words were not yet pronounced as /gat/, /ṣadq/ and /malk/.

Brockelmann's explanation of the change of *yaqtilu imperfects to יִקְטֹל is also problematic. His version of the sound change should also affect the *hipʕil* jussive, resulting in *yaqtil > *yaqṭal > **יְקְטֹל*, not attested יַקְטֵל. Thus, the chronological problem remains unsolved, and Brockelmann's account of the disappearance of *yaqtilu does not account for the facts.

Bauer and Leander (1922, 194–195) completely agree with Brockelmann, merely adding that monosyllabic construct states like ־שֶׁם 'name (construct)' < *šim were not affected (see also Leander 1912).

6.2.4   *Bergsträsser (1918, 1929)*

Bergsträsser (1918, 149) formulates Philippi's Law in yet another way, stating that in closed syllables, *i became *a in two environments: "a) in a primarily stressed penultimate, and b) in a secondarily stressed ultimate syllable, namely in the construct state after the apocope of the case vowels".[7] Besides the examples Brockelmann (1908) gives, Bergsträsser adds the second and third person feminine plural imperfect of the *nipʕal*, תִּקְטֹלְנָה (beside forms like third person singular masculine יִקְטֵל). Like Bauer and Leander (1922), Bergsträsser notes that *i is preserved in 'completely unstressed' construct states like ־בֶּן/בֶּן 'son (construct)' and ־שֶׁם 'name (construct)'. As the same pattern can be found in Aramaic, Bergsträsser concludes that this must be a pre-Hebrew (i.e. Proto-Northwest-Semitic, in this case) development.

Bergsträsser treats the development of stressed *i before geminated consonants differently. Sometimes, it yields Biblical Hebrew *ε*, as in the second person feminine plural suffix כֶן- (which he reconstructs as *-kinna), or אֱמֶת 'truth', כַּרְמֶל 'orchard' and בַּרְזֶל 'iron', which all have -itt- or -ill-, respectively, before suffixes; עֲרָפֶל 'gloom' and בָּבֶל 'Babylon' might belong to this group as well. "Only occasionally" (*Nur vereinzelt*) does the development of *i > *a occur in this context, as in בַּת 'daughter' and the energic suffix -*anni*, apparently meant to derive from *-in-nī; but in most cases, *i yields Biblical Hebrew *e* in this environment, as in לֵב 'heart, mind' and other *qiṭṭum nouns, הֵם 'they (m.)' and related pronouns, and תֵּת 'to give'. A separate case is formed by the *hipʕil* of geminate roots, discussed in Bergsträsser (1929, 137). Citing many examples, the author states that the original distribution of the vowels between the first and second radical in these verbs seems to be *a* in the perfect and *e* in the imperfect, imperative and infinitive. This distribution is largely preserved, as in הֵצַר 'he distressed'

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7   ... *a) in haupttoniger vorletzter, und b) in nebentoniger letzter Silbe, nämlich im st. cstr. nach Abfall der Flexionsvokale (...).*

besides וַיָּצֵ֫רוּ 'and they distressed', while a few verbs have generalized *a* or *e* throughout. Whether Bergsträsser sees this as a result of sound change or as a reflection of the Proto-Semitic situation (cf. Classical Arabic perfect *ʔafalla*, imperfect *yufillu*) is unclear.

There are no serious problems with Bergsträsser's version of Philippi's Law, but it leaves a lot unexplained. The development of *i before geminated consonants, in particular, remains unpredictable.

6.2.5   *Sarauw (1939)*

Unlike the authors listed above, Sarauw (1939) argues for a late date for the occurrence of Philippi's Law. In his work on stress and related topics in the classical Semitic languages, he points out (pp. 75 ff.) that the various Greek transcriptions of Hebrew names and text all reflect /e/, spelled with ε, for *i which appears as *a* in Biblical Hebrew. Sarauw lists five environments in which Biblical Hebrew *a* from *e (usually < *i) occurs (p. 79): before geminated consonants, as in מַ֫תָּ 'you (m.sg.) died' besides מֵת 'he died'; before degeminated consonants, as in גַּת 'Gath' (see above), including several words that have /a/ in the Babylonian vocalization, but not in the Tiberian, like *laḇ* 'heart' (Tiberian לֵב) < *libbum; before single consonants in words in the construct state, as in זְקַן 'old (m.sg.) (construct)' (see above); in verbal forms, such as כָּבַד 'he was heavy' besides כָּבֵד 'idem'; and in the third person masculine plural personal pronoun in the Babylonian vocalization, *ham* (Tiberian הֵם). Noting that these are the same environments in which tonic lengthening does not occur (see Chapter 4), Sarauw concludes that there was a general sound change of all short *e > *a. Given the existence of some words with an *a* in context and *e* in pause, like תֹּאבַד 'you (m.sg.) will be lost (context)' beside תֹּאבֵד 'idem (pause)', this change must have postdated pausal lengthening. In many cases, this original distribution was distorted through analogical reshuffling, introducing *a* into pausal forms like בֶּת and *e* into context forms like יִתֵּן. In a few cases, this even led to a reversal of the original distribution, as in יֵלַד 'he will go (context)'/יֵלֵד 'idem (pause)'. Khan (1994) also follows this formulation of Philippi's Law, but presents a different account of how the pausal forms were extended to non-pausal contexts.

Sarauw's arguments for a late occurrence of Philippi's Law are convincing, and the fact that the change of *i or *e > *a only occurs in those environments where the vowel does not undergo tonic lengthening is striking. The reliance on analogy to explain all the attested exceptions to his sound law is questionable, though, especially in the not infrequent cases of contextual *e* corresponding to pausal *a*.

6.2.6   *Birkeland* (*1940*)

Birkeland (1940, 28–32) takes a different approach to the problem of Philippi's 'Law', as he refers to it at one point. On page 32, he states: "Only a phonological treatment is thus capable of resolving these issues. From a purely mechanical-phonetic perspective, one must take so many exceptions into account that everything becomes uncertain."[8] Instead of trying to formulate a precise sound law that covers all cases of *i > *a, then, Birkeland sees *i, e, ε* and *a* as four different allophonic realizations of only two phonemes, /i/ and /a/. In some environments, the distinction between these phonemes has been lost; thus, in these environments, *ε* and *a* can be allophones of either /i/ or /a/. Which allophone actually surfaces—practically, when /i/ is realized as *a*—is largely determined by functional factors. That is to say that /i/ mainly preserves its realization as *e* in contexts where confusing it for /a/ could lead to incorrect identification of the word or grammatical form. In the feminine plural imperative of יֹשֵב 'to sit', שֵׁבְנָה**,[9] for example, the underlying /i/ in the first syllable must be realized as *e*, as it is characteristic of the I-y roots; if the word were realized as שַׁבְנָה**, the hearer might think it belonged to another root, נשב**. Summarizing the relevant parts of the rules Birkeland gives for the realization of /i/, he concludes that the merger of /i/ and /a/ (i.e. the realization of /i/ as *a*, or the result of the change of *i > *a) is especially frequent before two consonants and also occurs in unstressed closed syllables (p. 32).

Birkeland's explanation is not very strong, as it fails to predict precisely when *i shows up as *a* in Biblical Hebrew. From a more theoretical point of view, he attempts to explain the apparent exceptions to Philippi's Law through what amounts to homonymy avoidance, the supposed tendency of languages to block certain sound changes if they would result in ambiguous forms (like שַׁבְנָה** above); Birkeland explicitly does not see these exceptions as the result of analogical restoration or paradigm pressure (*Systemzwang*), as "one does not quite understand a system that works so unsystematically"[10] (p. 32). Homonymy avoidance, however, is a very dubious concept in and of itself (for a recent counterexample and compelling argument against its reality, see Sampson 2013). It cannot, therefore, be invoked to solve the present problem without raising new ones.

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8   *Erst eine phonologische Betrachtung ist so imstande, diese Probleme zu klären. Rein mechanisch-phonetisch muß man mit so vielen Ausnahmen rechnen, daß alles unsicher wird.*

9   Not actually attested, but cf. לֵכְנָה 'go (f.pl.)' from הלך.

10   *... man versteht nicht recht ein System, das so unsystematisch wirkt.*

6.2.7 *Brønno* (*1943*)

Contrary to what the title might suggest, Einar Brønno's *Studien über hebräische Morphologie und Vokalismus* is not a general work on the historical grammar of Hebrew like some of the books mentioned above. Rather, it is an analysis of the reading tradition underlying the Hebrew Bible fragments in Greek transcription from the second column of Origines's Hexapla. Unlike earlier scholarship on the Secunda, Brønno exclusively bases his analysis on the Psalm fragments found by Giovanni Mercati (1895–1896), which are less corrupt than previously known Hexapla fragments.

Brønno does not discuss the detailed conditioning of Philippi's Law, quite simply because it does not occur in the Hebrew underlying the Secunda (pp. 302–305). Of the categories discussed above, the only words attested in Mercati's fragments are perfects of the *piʕel* and *hip̄ʕil*. Of these ten forms (p. 67), nine have an ε in the stressed syllable, like ελλελθ 'you (m.sg.) profaned' (Tiberian חִלַּלְתָּ), εσθερθα 'you (m.sg.) hid' (Tiberian הִסְתַּרְתָּ). Only μαγαρθ 'you (m.sg.) hurled' (Tiberian מִגַּרְתָּ) is spelled with an α, but as the unexpected α in the first syllable indicates, this might simply be a *qal* form (i.e. Tiberian מָגַרְתָּ**) occurring instead of the *piʕel* of the Masoretic Text. As etymological *a is mainly reflected by α elsewhere in the Secunda, while *i, corresponding to Tiberian *e*, is transcribed with ε, it would seem that Philippi's Law had not yet been operative and these words still were pronounced with *e < *i, not the *a* of later Tiberian Biblical Hebrew.

As we shall see, some authors writing after Brønno try to discount the evidence from the Secunda for a late occurrence of Philippi's Law, which they hold to be an early development. They note that occasionally, the Secunda does spell ε for historical *a, as in νεγρεσθι 'I was cut off' (Tiberian נִגְרַזְתִּי). The spellings with ε where Tiberian Hebrew has a *pátaḥ* resulting from Philippi's Law, then, could be the result of the same tendency to spell ε for *a*. The non-occurrence of *piʕel* and *hip̄ʕil* second and third person perfect forms with α could simply be coincidental.

Fortunately, there is a way to determine the odds of such a coincidence occurring. Comparing the candidates for Philippi's Law to their closest parallels with certain historical *a, the first and second person perfects of the (fientive) *qal* and *nip̄ʕal*, we get the data given in Table 30. A statistical procedure known as Fisher's exact test (Fisher 1922) can then determine the probability of such a situation emerging by chance, i.e. the odds that the apparent difference between the two categories is not due to an actual difference in pronunciation.

Given the data in Table 30, Fisher's exact test gives a p (probability) value of approximately 0.0006. In other words, there is only a chance of six in ten thousand that the words with pre-Philippi *i were pronounced with /a/ at the time

TABLE 30   Spelling of first and second person per-
fects in the Secunda (Brønno 1943)

	*a (*qal* and *nip̄ʕal*)	*i (*piʕel* and *hip̄ʕil*)
α	11	1
ε	2	9

the Secunda was written and that the difference in spelling with words with historical *a is purely due to chance. Obviously, this is highly improbable, and the probability only decreases if spellings of etymological *a in other contexts are also included. Claims that Philippi's Law had operated in the reading tradition underlying the Secunda but is coincidentally not reflected in the spelling are therefore untenable.

Considering the non-occurrence of Philippi's Law, it is interesting to note the relatively greater number of *qiṭl nouns, spelled with ε, which are attested in the Secunda as compared to the Masoretic Text. Many of these appear with an ε (< *a) in Tiberian Hebrew, indicating a post-Secunda shift of *e > *a as in the first and second person perfects, e.g. δερχ 'way' with *e < *i vs. Tiberian דֶּרֶךְ < *dark 'idem'; without this shift, we should expect *derk to yield דֶּרֶךְ**. As these differences could also be the result of a morphological change of noun pattern, however, the evidence against pre-Secunda occurrence of Philippi's Law is not as strong as in the case of the verbal forms.

6.2.8   *Blake* (*1950*)

In an article discussing both Philippi's Law and the Law of Attenuation (see Chapter 7), Frank R. Blake (1950) lists ten categories of words with *a* from historical *i. They include all the cases mentioned by Brockelmann (1908), as well as the 'pausal *páṭaḥ*' in pairs like וַיִּגְמַל 'and he was weaned (context)'/וַיִּגָּמֵל 'idem (pause)', which is also included by Sarauw (1939). He concludes that "[t]he so-called 'Philippi's Law,' the change of original *i* with either a primary or a secondary accent in a closed syllable to *a*, takes place regularly with certain regular exceptions" (p. 82), the exceptions being that *i changes to *e* in originally open syllables and before geminate consonants—except in a few words like בַּת 'daughter', where the geminate comes from an *-nC- consonant cluster—and that *i becomes ε before a geminate *n or word-final *n, *l, "and perhaps *m*" (ibid.), as in כַּרְמֶל 'orchard'. As Philippi's Law has also left traces in Aramaic, but not in other Semitic languages, Blake considers it to be a Proto-Northwest-Semitic development (p. 83).

In Blake's version, Philippi's Law must have occurred at an early date, not only because it happened in Proto-Northwest-Semitic, but also because he attributes the occasional shift of *i > *a in words like בַּת to the fact that their geminate consonant goes back to a cluster with *n. This only makes sense if Philippi's Law took place before the assimilation of *n to following consonants, i.e. before the earliest records of written Hebrew. As we have seen, the data from the Secunda are hard to square with such an early occurrence of Philippi's Law.

6.2.9   *Rabin (1960b)*

Chaim Rabin's article on the development of vowels in unstressed syllables should not go unmentioned here, but as he does not go into great detail on the conditioning of Philippi's Law and treats it as one and the same phenomenon as the Law of Attenuation (Chapter 7), it is discussed in Section 7.2.4.

6.2.10   *Blau (1981, 1986)*

Two of Blau's many publications on the history of the Hebrew language are directly relevant to the question at hand. In the first (Blau 1981), he sets out to establish a relative chronology of Philippi's Law, interpreted as a shift of short *i > *a in closed, stressed syllables (p. 5), and other sound changes, most importantly pausal lengthening. Noting that many words with *a* from original *i do not lengthen it to *å* in pause, unlike words with original *a, he concludes that the operation of Philippi's Law postdated pausal lengthening. Another sound change, the pausal stress shift to closed final syllables (cf. וַיָּ֫רָץ 'and he ran (context)' beside וַיָּרָ֫ץ 'idem (pause)', both ultimately < *wa-yárut̠), postdates pausal lengthening, but must precede Philippi's Law, too. In this way, the development of forms like *wayyiggā́mil > *wayyiggāmíl > *wayyiggāmál > וַיִּגָּמַ֫ל 'and he was weaned (pause)' can be explained. Blau explains some apparent counterexamples and strange developments, including those in the segolates, with a plausible appeal to analogy.

In Blau (1986), the author discusses the absolute dating of Philippi's Law. He arrives at a fairly broad dating, more or less halfway between the early suggestions like those of Blake (1950) and the late chronology of Sarauw (1939). According to Blau, Philippi's Law must postdate the writing of the Amarna Letters, as forms with /i/ for *i are still attested there, and antedate the Septuagint, based on the α in names like ασαρμωθ 'Hazarmaveth' (Tiberian חֲצַרְמָ֫וֶת), presumably *ḥaṣir mawt 'court of death', and σαλπααδ 'Zelophehad' (Tiberian צְלָפְחָד), presumably *ṣill paḥd 'shadow of fear' or similar. Thus, he arrives at an absolute dating of somewhere between 1300–300 BCE (pp. 2–3).

Blau (1981)'s reasoning is sound. Only finite verbal forms with *e* in context remain unexplained, as *i should have shifted to **a here, too. As discussed

above, though, Blau (1986)'s dating is incompatible with the non-occurrence of Philippi's Law in the Secunda. Blau attributes this to the variant spelling of /a/ in the Secunda, but as we have seen, this is extremely unlikely. The evidence from the Septuagint is uncompelling; both of the names Blau adduces are of uncertain etymology, and he ignores the ε in names like μελχισεδεκ (cf. Qimron 1986a).

6.2.11   *Lambdin (1985)*

Writing more than a century after Philippi (1878), Thomas Lambdin starts his Festschrift chapter on the law bearing the former's name with a summary of the consensus surrounding it, concluding that "Philippi's Law falls woefully short of what one expects of a 'law' in historical phonology: on the one hand, the phonetic environment in which the law applies eludes precise definition; on the other, in many of the categories where the law is said to apply there are more counterexamples than examples" (p. 136). Seeking to remedy this, he first considers the alternation between *a and *i in the segolates. Lambdin notes both the great variation in the noun type of individual words between the Tiberian and Babylonian reading traditions, as well as the Secunda, and the seeming correlation between the manner of articulation of the consonant following the *a or *i: most words with a resonant (*m, n, l, r*) as their second radical have ε in the absolute state, like מֶלֶךְ 'king', whereas most words *without* a resonant second radical have *i* before suffixes, like קִבְרוֹ 'his grave'. He concludes that *a and *i have been redistributed on phonetic grounds in the segolates, a fact that should not be attributed to Philippi's Law. Similarly, *qaṭṭum and *qiṭṭum nouns are excluded from the discussion: cases of interchange like בַּת 'daughter' besides בִּתִּי 'my daughter' "remain intractable" (p. 142). The other categories show no interchange in Tiberian Hebrew; their *a* reflex in the Babylonian tradition is easily explained by a shift of short *e (from earlier *i) > *a, unique to Babylonian Hebrew. In Tiberian, *i before geminates surfaces as ε in polysyllabic nouns (p. 142; p. 144 adds the condition that it must be followed by a *m, n, l,* or *t*), as in כַּרְמֶל 'orchard'. The loss of *yaqṭilu imperfects and the *i > *a shift in construct states like זְקַן 'old (m.sg.) (construct)' are dismissed as morphological developments, leaving only the first and second person stative *qal*, *piʕel* and *hipʕil* perfects as the result of Philippi's Law, which is formulated as "*éC₁C₂(V)>áC₁C₂(V)", i.e., *qittéltā>qittáltā" (p. 143). Lambdin is not explicit about the dating of this development, but it must be late, as it only applies to Tiberian Hebrew.

  Lambdin's explanation is plausible and works for the limited set of forms he seeks to elucidate. He also makes important points about the relationship between the Secunda and the Tiberian and Babylonian reading traditions, and

the role Philippi's Law plays in each of them. Much is left unexplained, though; as Lambdin notes himself, it is ironic that בַּת, the very word that got Philippi started, is now excluded from his law, and the cases of interchange between *a* and *e* in contextual and pausal forms of the verb are left unresolved as well. Additionally, his statistics are misleading: while it is true that most segolates with a resonant second radical have *ɛ* in the absolute state, the same goes for segolates *without* a resonant second radical. Similarly, the majority of segolates with suffixes has *i* in the first syllable, regardless of the following consonant, although the tendency is less pronounced before resonants. When this is taken into account, the correlation between segolate vowels and following (non-guttural) consonants is barely statistically significant and quite weak. The cases of *a/*i interchange in segolates, then, also still require an explanation.

6.2.12   *Qimron (1986b, 1991), Ben-Ḥayyim (1989)*

In a detailed article, Elisha Qimron (1986b), like Lambdin (1985), discusses data from the Babylonian reading tradition as well as the Tiberian one.[11] He concludes (p. 96) that there was a sound change of all short (*i >) *e > a in closed, stressed syllables. This development was inhibited before geminate consonants (as in *qiṭṭum nouns and verbal forms from geminate roots) and in doubly closed syllables (as in *qiṭlum nouns). The original conditioning of this change has been obscured by analogy, *e having been reintroduced from pausal forms, where it was lengthened and therefore preserved. The variation found between the different Hebrew reading traditions, in Qimron's view, might go back to original dialectal differences (p. 89).

An article by Ze'ev Ben-Ḥayyim (1989) in the same journal attacks Qimron's assertions, mainly his conclusion that Philippi's Law did not affect Samaritan Hebrew. Based on some forms with Samaritan *a* for Proto-Semitic *i, like *lab* 'heart' < *libbum, Ben-Ḥayyim argues that it did (pp. 117–119). Furthermore, he joins those scholars mentioned above who see Philippi's Law as an early, perhaps Proto-Northwest-Semitic development. He dismisses the evidence from the Secunda as the result of a fortuitous absence of spellings with α. Instead, he sees evidence for an early occurrence of Philippi's Law in an alternative name for the Greek letter σ, σαν, which he sees as reflecting the "Phoenician-Hebrew" (פיניקית-עברית, p. 120) letter name *šan(n) < *šinnum. A rebuttal by Qimron (1991) exposes the flaws in Ben-Ḥayyim's argument, maintaining that Samaritan Hebrew shows no consistent operation of Philippi's Law, and stressing that

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11   More recently, an English-language summary of the author's position and further elaboration, especially focusing on Babylonian Hebrew, has appeared as Qimron (2006).

not only the Secunda, but all known Greek and Latin transcriptions show evidence against the prior occurrence of Philippi's Law and none in favour of it. To this, we may add that Ben-Ḥayyim's Phoenician *šan(n) would be the only attested example of Philippi's Law operating in that language, while there is a great number of counterexamples in the form of names containing the element /milk/ 'king, (the god) Milk' (Friedrich and Röllig 1999, 43).

Qimron (1986b)'s explanation is similar to that of Sarauw (1939). Unlike the latter, though, he finds a plausible solution for the occurrence of contextual *e* besides pausal *a*, as in וַיִּגָּמֵל 'and he was weaned (context)'/וַיִּגָּמֵל 'idem (pause)', by adopting Blau (1981)'s relative chronology (see above). The other verbal forms remain problematic. If *e* in context forms was always the result of analogical restoration, why does it always occur in I-wy roots like יֵשֵׁב 'he will sit', but not in I-ʔ roots like יֹאמַר 'he will say'? How should we interpret pausal forms like יֵלֵךְ 'he will go (pause)'? More generally, why do we only see this analogical replacement of context forms by pausal forms where it helps to explain the exceptions to Philippi's Law, while verbs with historical *a* never introduce the lengthened *å* from pausal forms into context forms? Like Sarauw (1939)'s formulation of Philippi's Law, Qimron's leaves too many data unexplained.

6.2.13 *Revell (1989)*

Revell (1989) takes a different approach to that of previous authors. Instead of positing a simple shift of *i > *a, he considers *i, e, ɛ, a* and *å* as different possible outcomes of *i in different phonetic and prosodic environments. He considers stress or lack thereof, the nature of the preceding consonant, and the syntactic (and therefore prosodic) environment in which a word is attested. Limiting ourselves to his discussion of *páṭaḥ* as a reflex of *i, the most important tendency is that this development is favoured by the presence of preceding voiced consonants or plosives or following back consonants, i.e. velars and gutturals (p. 192). Stress (p. 189) and phrase-final position (p. 197) are also conducive factors, but to a lesser degree. Revell goes on to give a phonetic rationale for these conditioning factors (pp. 198–199).

While Revell's approach accounts for most of the data, he cannot give any hard and fast rules that actually predict the outcome of *i in a given context. There are only tendencies, which is hard to square with a Neogrammarian view of sound change. Establishing clear rules, with more predictive power, would therefore be preferable.

6.2.14 *Dolgopolsky (1999)*

On page 248, Dolgopolsky (1999) notes that three separate rules in his extensive relative chronology reflect three consecutive stages of the development

normally known as Philippi's Law. In order, they are (using Dolgopolsky's own numbering for reference):

[28] (p. 192)

  a) *i > *e in singly closed syllables with pausal, primary or secondary stress, doubly-closed word-final syllables with primary stress before a weak word boundary,[12] and before geminates in syllables with pausal, primary or secondary stress. Examples: *bírku > *bérku 'knee' (p. 201), *wayyíḫy > *wayyéḫy 'and he lived' (p. 213), *ḥíṭṭu > *ḥéṭṭu 'arrow' (p. 208).

  c) *ĭ (nasalized *i, from earlier *in) > *ɛ̃. Example: *bĭ́ttu > *bɛ̃́ttu 'daughter' (p. 207).

[39] (p. 193)

  a) *e > *ɛ before two different consonants (the first one not being *y) in word-final and word-internal syllables with pausal or primary stress and in word-final syllables with secondary stress before a weak word boundary.[13] Examples: *bérk > *bɛ́rk 'knee' (p. 201), *ṣ̌èlʿ- > *ṣ̌èlʿ- (*sic*) 'rib' (construct) (p. 223).

[40] (p. 194)

  a) *ɛ with primary stress > *a before two consonants. Example: *métnū > *mátnū 'we are dead' (p. 206).

  b) *ɛ with secondary stress > *a before a single consonant and a weak word boundary.[14] The example Dolgopolsky gives (*pèry- > *pàry- 'fruit (construct)', p. 209) does not match the conditioning; rather, he must be thinking of something like *zaqèn- > *zaqàn- 'old (m.sg. construct)'.

  c) *ɛ̃ > ã in monosyllables with pausal, primary and secondary stress. Example: *bɛ̃́t > *bã́t 'daughter' (p. 207).

Dolgopolsky is not explicit about the absolute dating of Philippi's Law, but based on the discussion of closely preceding and following sound changes (pp. 246–249), he seems to place the first step somewhere in Blau (1986)'s broad time frame of 1300–300 BCE.

    The most innovative part of Dolgopolsky's account is the introduction of nasalized vowels to explain the unexpected behaviour of words like בַּת < *bin-

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12   A weak word boundary is that following construct states of nouns and context forms of verbs. In this case, the latter are meant, as construct states bear secondary stress.

13   I.e. in the construct state.

14   Again indicating the construct state.

tum 'daughter'. While there may be something to this, it does not cover all the cases of *i > *a before a geminate: פִּתִּי/פַּת '(my) morsel (of bread)', for instance, must be derived from the root פתת, not פנת**, as is attested by cognates such as Classical Arabic *fattata* 'to crumble'. The *a* in I-ʔ imperfects like יֹאמַר 'he will say' also remains unexplained. More generally, Dolgopolsky's rules are very complex and often quite arbitrary.

6.2.15   *Woodhouse* (*2004, 2007*)

Like Philippi (1878) before him, Robert Woodhouse (2004) segues into a discussion of the Hebrew *i > *a change, in an article which examines the chronology of vowel lowering in Canaanite based on the different Greek forms of the place name 'Tyre'. He manages to combine a proposed early occurrence of Philippi's Law with its apparent non-occurrence in the Greek transcriptions by splitting it up into several separate stages, like Dolgopolsky (1999) does. By the time the Greek transcriptions were made, the vowel that would later become Tiberian Hebrew *a* < *i was pronounced as an open-mid vowel [ɛ], which was transcribed with the Greek letter ɛ (p. 243). In the slightly revised version of Woodhouse (2007), the relevant changes are then (using Woodhouse's numbering for reference):

3.   *e (derived from earlier *i in step 1.) > *ɛ in stressed, closed syllables, but not before geminates, e.g. *zaqèn > *zaqèn 'old (m.sg. construct)', *gént > *gént 'Gath'.

5.   Assimilation of *n to a following consonant and word-final degemination, e.g. *gént > *gét 'Gath'.

6.   What Woodhouse (2004) suggests be called 'Blau's Law', after Blau (1981): stressed *ɛ > *a, including *ɛ that only secondarily received the stress, as in *wayyiggāmál < *wayyiggāmέl < *wayyiggǻmɛl 'and he was weaned (pausal form)'.

Woodhouse's explanation is similar to that given by Dolgopolsky (1999), and it leaves the same data unexplained. Additionally, Woodhouse relies on morphological conditioning of sound change in two cases: first, word-final short vowels are only deleted in the construct state (hence *zaqénu > *zaqèn > *zaqèn 'old (m.sg. construct)', but *kabéda > *kabéd 'he was heavy'), then they are deleted without compensatory lengthening in verbs, but with compensatory lengthening in the absolute state of nouns (hence *kabéda > *kabéd 'he was heavy' vs. *kabédu > *kabéd 'heavy (m.sg.)'). Unlike Dolgopolsky, Woodhouse does not attempt to give a phonetic rationale for this, which weakens his line of reasoning considerably.

6.2.16 *Summary*

No satisfactory explanation for all instances of *i > *a in Biblical Hebrew has been put forward yet. In reviewing the literature on the subject, we have encountered some partial solutions, as well as some recurring questionable points. To sum up:

– As stated most clearly by Dolgopolsky (1999) and Woodhouse (2004), 'Philippi's Law' is most probably the telescoped effect of several distinct sound changes, rather than one single sound change.
– While the first step in this development may have been pre-Hebrew, as pointed out by Woodhouse (2004), the evidence from the Secunda (Brønno 1943) and other Greek and Latin transcriptions show that the final development, resulting in *a, must be quite late.
– The occurrence of *i > *a in the *qal*, *piʕel* and *hiᵽʕil* perfect and feminine participle has adequately been explained by Lambdin (1985).
– The occurrence of *i > *a in the pausal forms of consecutive imperfect forms like וַיִּגָּמֵל 'and he was weaned' has adequately been explained by Blau (1981).
– The occurrence of *i > *a in segolates has adequately been explained by Brockelmann (1908), although he probably dates it too early. While Lambdin (1985) leaves segolates out of consideration, the sound law formulated by him also covers them.
– With Lambdin (1985) and against Barth (1889) and Brockelmann (1908), the near-disappearance of *yaqṭilu imperfects need not be seen as a phonological development.
– No adequate explanation has yet been given for the development of *i before geminates and in the imperfect and imperative. The *i > *a shift in construct states, normally considered to be unstressed, also needs clarification.

6.3   Remaining Issues

In the following section, we will identify possible cases of *i > *a in the remaining problematic categories. To ascertain the presence of *i in these words, cognate evidence is essential. This will mainly be drawn from Classical Arabic, Gəʕəz and Akkadian, as some scholars consider Aramaic to have undergone Philippi's Law as well. The former three languages reflect *a as *a* and /a/ in most cases; Akkadian sometimes shifts it to /e/, usually in the presence of historical pharyngeals. *i is reflected by *i* in Classical Arabic, *ə* (also < *u) in Gəʕəz, and /i/ in Akkadian.

The importance of external comparison, rather than internal reconstruction based on Biblical Hebrew alone, is illustrated by several examples of the קַט

nominal pattern. Consider the homonymous word pair סַף 'threshold' and סַף 'bowl'. These two words are identical in all forms: סַף is the context form of the absolute state, סָף is the corresponding pausal form, and the unstressed form of the stem is -סִפּ, as in the plural סִפִּים. Scholars who merely rely on an interchange between *a* and *i* to identify *i, like Qimron (1986b), would reconstruct both words as *ˢⁱsippum or similar; the more finely tuned criteria used by Revell (1985b) yield the same result. The comparative evidence, however, tells a different story. Akkadian cognates (or possibly source words, if the Hebrew terms are loanwords from Akkadian) are attested for both words: for סַף 'threshold', there is Akkadian /sippu/ 'idem', while סַף 'bowl' is paralleled by Akkadian /sappu/ or /šappu/ 'idem'. It would seem, then, that these are originally distinct words, one with *i, the other with *a. The merger of these vowels in stressed syllables may be due to Philippi's Law, while their merger in *i* in unstressed syllables would seem to be the due to later analogy (see Chapter 7).

A similar case is that of מַס 'forced labour'. As the *a* is retained in the identical pausal form, and the plural is מִסִּים, some scholars would reconstruct this word as *miˢˢsum, with *i > *a* due to Philippi's Law. Yet the word is attested as /massu/, with an *a, in Amarna Canaanite (EA 365:14, 23, 25). As we have seen, the shift from *i > *a cannot have taken place this early, and this word must therefore have historical *a. The *i* in the plural and the pausal *a, then, may be due to analogy with other words where these vowels originated through regular sound change. These words illustrate that only external evidence can confirm the presence of historical *i in any word.

6.3.1   *The Construct State*

As we have seen, the *a* < *i in construct states like חֲצַר 'court (construct)' has been part of the discussion surrounding Philippi's Law since Barth (1889). These forms have generally been explained in two ways. First, those authors who hold that *all* instances of stressed short *i shifted to *a point out that the *i in the construct state was short, like the parallel *a in דְּבַר 'word (construct)' besides its long form in the absolute state דָּבָר. An unconditioned shift of stressed short *i > *a is too simplistic, though, as it leaves many cases of *i > *e* unexplained. The same goes for accounts which hold that Philippi's Law operates in all closed syllables. Second, it has been pointed out that construct states form a phonological unit with the following noun, which always starts with a consonant, so that the *i in the final syllable of the construct state was followed by two consonants, the environment in which Philippi's Law operated. But the *i must have been stressed to have shifted to *a, and construct states in Semitic generally lack stress. This has led many authors to introduce various levels of stress: the *i in these construct states would then only have born secondary,

sometimes even tertiary stress. While this is possible, it does not really match any other linguistic facts from the development of Hebrew, and an explanation that can do without this ad hoc introduction of different levels of word stress is to be preferred. Additionally, the non-operation of Philippi's Law in forms like בֶּן־ 'son (construct)' requires further explanation.

In fact, the development of *i > *a in these construct states is the completely predictable result of a set of sound changes that are already known from other cases. In chronological order, they are:

1. Construct states are unstressed and form a prosodic unit with the following noun. This is already known from words like דְּבַר 'word (construct)' < *dabar-. Thus, *ḥaṣír[15] 'court (construct)' > *ḥaṣir-.

2. Unstressed short *i (> *e) > *ɛ.[16] This is also seen in forms like וַיֵּלֶךְ 'and he went' < *wayyáylik, בֶּן־ 'son (construct)' < *bin-. Thus, *ḥaṣir- > *ḥaṣɛr-.

3. At some point in the Masoretic reading tradition, many construct states receive stress on the same syllable as their absolute state (Blau 2010, 265). This is reflected by the placement of an accent on the affected syllable. Thus, *ḥaṣɛr- > *ḥaṣḗr. Words with a following *maqqep̄*, indicating that the word was still pronounced as one prosodic unit with the following word, did not receive such an accent.

4. What Woodhouse (2004) calls Blau's Law, based on Blau (1981): stressed *ɛ > *a, as in *wayyēlḗk 'and he went (pause)' > וַיֵּלֵךְ. Thus, *ḥaṣḗr > חֲצַר.

This account has the great advantage that it requires no new sound changes to explain the development of this reasonably small class of nominal forms. Additionally, as seen in Table 31, it explains almost all the exceptions where *i before a word-final consonant in the construct state yields ɛ, not **a. These words are almost always followed by a *maqqep̄*; in the case of בֶּן־ 'son (construct)', there is only a handful of attestations without a *maqqep̄* against more than a thousand with one. The construct states with *i > a, however, are almost always attested without a *maqqep̄*, and consequently with a Masoretic accent on the affected syllable.[17] Forms like עֲקֵשׁ־ 'crooked (m.sg. construct)' show that the development is not related to word length.

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15   Or, more likely, some earlier protoform.

16   We also find unstressed short *i reflected in Biblical Hebrew as *i*, as in *ṣidqahu > צִדְקוֹ 'his righteousness'. This reflex is never found in word-final syllables, however, the environment that we are dealing with right now.

17   The exceptions are כְּבַד־ < *kabid 'heavy (m.sg. construct)' in Exod 4:10, preceding another instance of כְּבַד without *maqqep̄*; מִרְבַּץ־ < *marbiṣ 'resting place (construct)' in Ezek 25:5, immediately followed by another ṣ; and קַן־ < *qinn 'nest (construct)' in Deut 22:6.

TABLE 31   Construct states with *i > *a* or *ε*

Absolute	Construct	Meaning
i > a		
אֹבֵד	אֹבַד	'lost (m.sg.)'
זָקֵן	זְקַן	'old (m.sg.)'
חָדֵל	חֲדַל	'ceasing (m.sg.)'
חָצֵר	חֲצַר	'court'
יָתֵד	יְתַד	'tent peg'
כָּבֵד	כְּבַד(־)	'heavy (m.sg.)'
מִסְפֵּד	מִסְפַּד	'wailing'
מַעֲשֵׂר	מַעֲשַׂר	'tithe'
מַרְבֵּץ	מִרְבַּץ־	'resting place'
עָרֵל	עֲרַל	'uncircumcised (m.sg.)'
קֵן	קַן־	'nest'
i > ε		
בֵּן	בֶּן־	'son'
לֵב	לֶב־	'heart'
*לָבֵן?	לְבֶן־	'white (m.sg.)'
עִקֵּשׁ	עִקֶּשׁ־	'crooked (m.sg.)'
עֵת	עֶת־	'time'
שֵׁם	שֶׁם־	'name'
שֵׁן	שֶׁן־	'tooth'

6.3.2   *The Imperative and Imperfect*

A minor problem, mentioned by Birkeland (1940), is the retention of *i in the imperative לֵכְנָה 'go (f.pl.)' versus its shift to *a in תֵּלַּכְנָה 'you/they (f.pl.) will go'. Birkeland sees the non-occurrence of Philippi's Law in this form as evidence that it was blocked where it might create grammatical ambiguity. There is no need to resort to this non-phonetic conditioning of a sound change. In the first place, this form could easily be the result of analogy with the masculine singular imperative. With reference to the strong verb, the analogy may be expressed formulaically as קְטֹל (imperative m.sg.) : קְטֹלְנָה (imperative f.pl.) = לֵךְ (imperative m.sg.) : לֵכְנָה (imperative f.pl.).

But even this appeal to analogy is unnecessary. Due to the different position of the syllables in the word, the non-occurrence of Philippi's Law in לֵכְנָה 'go (f.pl.)' can be explained by stating that Philippi's Law, or at least one of its

stages, did not affect word-initial syllables in polysyllabic words; formulated positively, this sound change only affected word-final and word-internal syllables. This phonetic account is supported by another case, where the retention of *i cannot be due to analogy: the alternation between the vowels of קֶדֶם < *qadm 'east' and קֵדְמָה < *qidmah 'eastwards' can be explained by positing historical *i for both forms of the word, which was changed to *a (and later to ε) in the monosyllable קֶדֶם, but not in word-initial position in the polysyllable קֵדְמָה.

An apparent counterexample to this rule is found in מַתְנוּ 'we died' and other first and second person forms, occurring besides *e* in מֵת 'he died'. Here, Philippi's Law seems to have operated in the first syllable of a polysyllabic word. This is not the only exceptional feature of this paradigm, however. In the first person and second person masculine singular, מַתִּי and מַתָּ, respectively, we see the apparent operation of Philippi's Law before original geminates, which is not otherwise attested (see the relevant section below). It seems justified to attribute the vocalization of these rare first and second person forms of 'to die' to analogy. If this was a late change, after the lengthening of all accented vowels, the analogy may be formalized as כָּבֵד 'he is heavy' : כָּבַדְתָּ 'you (m.sg.) are heavy' = מֵת 'he died' : מַתָּ 'you (m.sg.) died'. If the analogy preceded this lengthening, the different quantity of the e-vowels in *kāḇed and *mēt would have been problematic, but the analogy could have been based on the pausal forms, *kāḇēḏ (with pausal lengthening, see Chapter 4) and *mēṯ (identical to the contextual form).

The consideration that Philippi's Law did not operate in the initial syllable of polysyllabic words allows us to date its operation to a certain degree. As it affected קֶדֶם 'east', this and similar words cannot have been polysyllabic at the time of its operation. Hence, Philippi's Law must have postdated the second apocope of word-final short vowels (see Chapter 4). Consequently, the first stage of Philippi's Law is most easily seen as a phonetic change of *e > *ε before two different consonants in word-final and word-internal syllables; these accentuated cases of *ε then shifted to *a* due to Blau's Law. Words like קֶדֶם would then have developed as follows: *qídmum > *qédmem > *qédme > *qédm > *qέdm > *qádm > קֶדֶם.

Regarding the imperfect, most cases of *e/a* interchange occur in consecutive imperfect forms, which have already been explained by Blau (1981). A similar case is that of וְיֵלַךְ 'and he must go (pause)' in Job 27:21, versus the context form, יֵלֵךְ. Like אַל־תָּלַן 'do not spend the night (m.sg.) (pause)' in Judg 19:20, אַל־תּוֹסַף 'do not continue (m.sg.) (pause)' in Job 40:32, and similar forms, this is probably a jussive, which can be explained in the same way as the consecutive imperfect pausal forms, although it seems unusual for a jussive with preceding -וְ to be

treated as a prosodic unit (contrast וְיֵרֵד 'and let him come down' (1 Sam 17:8), not וְיֵרֶד**). No explanation is apparent for וְתֵרַד 'and it will go down' in Jer 13:17.

Something else altogether seems to be the case with the imperfects of three I-ʔ verbs. While the other imperfects with *e/a* interchange have *e* in the context form and *a* in pause, the opposite is found in יֹאכַל 'he will eat (context)'/יֹאכֵל 'idem (pause)', תֹּאמַר 'she will say (context)'/תֹּאמֵר 'idem (pause)', תֹּאבַד 'you (m.sg.) will be lost (context)'/תֹּאבֵד 'idem (pause)', and similar forms from the same verbs. It is striking that this reversed state of affairs is only found in these verbs, already an irregular category with *o < *aʔ* as the prefix vowel. Bauer and Leander (1922, 369) note that אכל 'to eat' has *u* in the imperfect stem in Classical Arabic, e.g. *yaʔkulu* 'he will eat'. They reconstruct the same form for the Hebrew cognate of this verb and attribute its unusual vocalization to a dissimilation of *u > a* and *e* after the preceding *o*: *yaʔkulu > *yākulu > *yōkulu (Canaanite Shift, see Chapter 3) > יֹאכֵל and יֹאכַל. That the vowel in the second syllable is dissimilated from that of the first syllable is confirmed by the imperatives אֱכֹל 'eat (m.sg.)' and אֱמֹר 'say (m.sg.)', where the original vowel quality has been preserved.

The development of the pausal form, *yōkol > *yōkōl (pausal lengthening) > *yōkēl > יֹאכֵל, is parallelled by *lū lō 'if not' > *lūlō > *lūlē > לוּלֵא 'unless'. Similarly, we might expect the contextual form to have developed from *yōkol > *yōkel > יֹאכֵל**. Instead, we find יֹאכַל, which is unexpected, but not absurd. Apparently, the length of the second vowel determined the type of dissimilation: fronting dissimilation in the case of a long vowel (*ō > *ē), height dissimilation in the case of a short vowel (*o > *a); a dissimilatory loss of rounding occurred regardless of the vowel's length. Unfortunately, there are no other known cases of sequences like *CōCoC in Biblical Hebrew, so this ad hoc dissimilation rule cannot be checked against other examples. As far as the other I-ʔ verbs go, at least, those that can be reconstructed as *yaqtulu imperfects follow the same rules, cf. יֹאמַר < *yaʔmuru (Classical Arabic *yaʔmuru* 'he will command') and יֹאבַד < *yaʔbudu (Classical Arabic *yaʔbudu*[18] 'it will go missing').

6.3.3   *i before Geminates

6.3.3.1   Nouns

Table 32 shows the *qiṭṭum nouns (including those with an assimilated *n as their second radical) that can be reconstructed with *i based on external evidence. Of these, only three show *a* for *i.

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18   And *yaʔbidu*.

TABLE 32   Unambiguous *qiṭṭum and *qinṭum nominals

BH	Meaning	Cognates
אֵת	'ploughshare'	Akk. /ittû/
בַּת	'daughter'	Arab. *bintun*
גַּת	'winepress, Gath'	EA /gimti/
זֵר	'border'	Akk. /zirru/ 'reed fence'
סַף	'threshold'	Akk. /sippu/
שֵׁן	'tooth'	Arab. *sinnun*, Ge. *sənn*, Akk. /šinnu/
שֵׁשׁ	'six'	Arab. *sittun*, Akk. /šeššu/ etc. (see text)
תֵּל	'mound'	loanword from Akk. /tillu/

Several words were excluded from the table, as the cognate evidence does not unambiguously support *i. אֵם 'mother' probably goes back to *ʔummum, cf. Ugaritic ⟨um⟩, Classical Arabic *ʔummun*, and Akkadian /ummu/.[19] Koehler and Baumgartner (1994–2001) list Akkadian /ikku/ as a cognate of חֵךְ 'palate', but according to CAD, the word means 'irritation' and "[t]here is no indication that *ikku* refers to a part of the human body" (volume 7, p. 59). The vowel of לֵב 'heart' could go back to *i, like Akkadian /libbu/, or *u, like Classical Arabic *lubbun*, in which case the vowel has been dissimilated from *u to *i in Hebrew. Other words that were excluded either had no attested cognates except for those in Aramaic, or no attested cognates at all. Hence, they might go back to either *qiṭṭum or *qaṭṭum.

The correspondence of Hebrew *š* to Arabic *t* in the word for 'six' (see Table 32) is irregular. This is due to the presence of an unusual consonant cluster in the Proto-Semitic form of this word, *sidṯum (Brockelmann 1908, 486). In Classical Arabic, *sidṯum developed to *sittun* with mutual assimilation, while the Aramaic (*šeṯ*) and Ugaritic (⟨ṯṯ⟩) /ṯiṯṯu/ < *siṯṯu) forms show that in Proto-Northwest-Semitic, the *d fully assimilated to the following *ṯ: *sidṯum > *siṯṯum.

19   According to the dissimilation rule discussed in Chapter 3, unstressed *u dissimilated to *i next to bilabial consonants. If the *i in אֵם is due to dissimilation, this could have originated in suffixed forms like *ʔummahu > *ʔimmahu > אִמּוֹ 'his mother' and spread to the absolute state through analogy; a kinship term like 'mother' is likely to have occurred in suffixed and construct forms quite frequently, as a mother is always *someone's* mother. The same goes for לֵב, mentioned below, if this is to be reconstructed as *lubbum. These would be two more examples of local markedness, see Section 1.1.2.

Of the three unambiguous cases of *i > *a* before geminates in monosyllabic nouns, two are known to have developed their geminate from an earlier cluster of *n and another consonant. As the only attested cognates of סַף are from Aramaic and Akkadian, languages that also exhibit n-assimilation, the word could go back to either *ᵗsippum or *ᵗsinpum. Bearing in mind that the first step of the multiple developments that are collectively known as Philippi's Law could have occurred quite early, then, the simplest explanation that covers the data may be that this first step (probably *e > *ε, see the previous section) took place before n-assimilation: thus, we may be dealing with a change like *bent > *bɛnt > *bɛtt in all three cases.[20]

In polysyllabic nouns, *i before geminate consonants does not yield *a*, except for a few possible cases in proper nouns of uncertain etymology. Instead, it appears as *sḡol* in בַּרְזֶל < *barᵈzillum?[21] 'iron', cf. Akkadian /parzillu/ and similar forms in other languages. The original *i and the gemination are preserved in the Biblical Hebrew personal name בַּרְזִלַּי. Similarly, the Biblical Hebrew name for the city of Babylon, בָּבֶל, also has *i > ε. This reflex of *i shows that the following *l* was originally geminated. Hence, the Biblical Hebrew form of the name must come from the oldest attested form, /babilla/, not the later, Akkadian folk-etymological form, /bāb-ili/ 'gate of God' (Edzard 2004, 121). Although there is no external evidence for *i in אֱמֶת 'truth', כַּרְמֶל 'orchard', עֲרָפֶל 'gloom', and גַּרְזֶן 'axe', the ε in these words may well go back to *i before a geminate, preserved before suffixes in אֲמִתּוֹ 'his truth' and כַּרְמִלוֹ 'his orchard'. מָגֵן 'shield' and מֵסַב 'surroundings' both have *i before a geminate in suffixed forms (מָגִנִּים 'shields' with unexplained *å*, מְסִבּוֹ 'around him'), but without cognate evidence, they are of doubtful use.

Blake (1950) and Lambdin (1985) note that this change only occurs before a few different consonants: they list *m*, *n*, *l*, and, in Lambdin's case, *t*. This collection of phonemes does not form a natural phonetic class, and they do not result in a plausible conditioning for a sound change. On closer inspection, though,

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20   Huehnergard (2013c) mentions *ʕintum > עֵת 'point in time' as a counterexample. With Bauer and Leander (1922, 450), I find it more likely that this word should be reconstructed as *ʕidtum and derives from the root יעד 'to appoint', cf. the related מוֹעֵד 'appointment, appointed time' from the same root. The *n* seen in Aramaic ענתא/ענה 'point in time', כענת and כען 'now' may be due to the 'prenasalization' of secondary geminates that also occurs in other words that never contained *n, e.g. Biblical Aramaic מַנְדַּע 'knowledge' from the root ידע 'to know' (cf. Garr 2007). כען would then be a back formation based on forms with the feminine suffix. If עֵת derives from *ʕidtum, the assimilation of *dt > *tt may easily have preceded the first step of Philippi's Law.

21   A loanword of uncertain origin. Reconstructing a complete nominal ending, including mimation, may be anachronistic for this word.

m is a bit of an odd man out. The main purpose of its inclusion in this group is to explain the *sḡol* in the second and third person masculine plural suffixes -הֶם, -כֶם, -תֶם, and the related personal pronoun, אַתֶּם 'you (m.pl.)'. In Chapter 8, it will be argued that the vocalization of these endings is based on their feminine counterparts in -*ɛn*. Excluding *m*, then, we are left with *n*, *l*, and *t*, which are all coronal consonants. Thus, the words like בַּרְזֶל 'iron' can be said to have undergone a change of stressed **e > ε* before a geminate coronal in a non-initial syllable. As this vowel did not shift to ***a*, it must still have been **e* when Blau's Law was operative. This conditioned sound change of **e > ε* should also have affected *hip̄ʕil* imperfect forms from geminate roots with a coronal second radical, like יָקֵל 'he will lighten', but in these words, the **i* or **e* could easily be restored based on similar forms where it did not precede a coronal.

As אֱמֶת 'truth' is from the root אמן, its second syllable may go back to **-intum*. In that case, it might be expected to have shifted to ***-at*, like בַּת 'daughter' < **bintum*. But considering the irregular reduction of the **a* in the first syllable (assuming אֱמֶת < **ʔamintum*) and the alternation between the absolute feminine ending **-at-* and the construct ending **-t-* seen in some other words, אֱמֶת may originally have been the form of the stem used in construct and before suffixes (see Section 7.2.7). Here, the **i* would have been unstressed, so Philippi's Law should not have applied. Alternatively, Woodhouse (2004) suggests a sporadic dissimilation of **ʔamint- > *ʔamitt-*, caused by the preceding nasal. As dissimilation is known to operate sporadically (Yu 2006, 527), this is also a possibility.

6.3.3.2   Verbs

In the verbal system, stressed **i* before geminates is mainly found in the *hip̄ʕil* of geminate roots. Here, **i* is usually reflected by *e*, as in הֵסֵב 'he turned', but occasionally, it yields *a*, as in הֵסַבּוּ 'they turned'. The cases in which this apparent instance of Philippi's Law occurs are listed in Table 33. Note that these verbs behave differently from the nouns considered above: while stressed **i* before a geminate in polysyllables is reflected by *ε* there, it appears as *a* in these verbal forms, as in monosyllabic nouns. This suggests that the reflex of **i* shifted to **ε* in these forms before the operation of Blau's Law.

It seems that the **i > *a* change in these verbs only affected the perfect. The occasional instances in other tenses are almost all before ʕ, which is known to change preceding short **i* to *a* (Bauer and Leander 1922, 206), and *r*, which might have a similar effect. The counterexamples with *e*, like הֵסֵב 'he turned', can be explained as the result of analogical restoration of **i*, which was unstressed and therefore retained in the first and second person perfect forms like הֲסִבֹּתָ 'you turned'. In the imperfect and related forms, however, the

TABLE 33   Geminate *hip̄ʕil* forms with *a*

BH	Meaning	Tense
הָבֵר	'to cleanse (pause)'	inf.
הֵדַק	'he pulverized'	pf.
הֵמַסּוּ	'they melted'	pf.
הֵמַר	'he embittered'	pf.
הֵסַבּוּ	'they turned'	pf.
הֵפֵר	'he broke (pause)'	pf.
מֵצַל	'spreading shadow (m.sg.)'	ptc.
הֵצַר	'it distressed'	pf.
יָצַר־	'it will distress'	ipf.
וַיָּצַר	'and it distressed'	ipf.cs.
הֵקַל	'he lightened'	pf.
הֵקַלּוּ	'they lightened'	pf.
הֵרַךְ	'he made timid'	pf.
הֵרַע	'he acted badly'	pf.
אָרַע	'I will act badly'	ipf.
נָרַע	'we will act badly'	ipf.
הָרַע	'to act badly'	inf.
מֵרַע	'acting badly (m.sg.)'	ptc.
הֵשַׁמּוּ	'they desolated'	pf.
הֵתַז	'he struck away'	pf.

*i was stressed in almost all persons. Yet much fewer cases of *i > *a are found in the imperfect than in the perfect, which is hard to explain by an appeal to analogical restoration based on so few forms in the paradigm. What, then, is the difference between the perfect and the imperfect that caused the former to occur with *a* while leaving the latter untouched?

The most important difference between the perfect forms and the imperfect forms is the vowel in the prefix. Thus, the perfect הֵפֵר 'he broke (pause)' has an *e* in the first syllable, while the imperfect יָפֵר 'he will break' has an *å*. We may posit, then, that at least in polysyllables, *e was not lowered to *ɛ (> a) before geminates, except where another *e preceded it: a dissimilatory change. Thus, *heperr > *hepɛrr 'he broke', while *yāperr 'he will break' remained unchanged. This would then allow the second vowel of the perfect forms to participate in the subsequent development of *ɛ́ > á, while preventing the imperfect forms from undergoing the same development.

In summary, the development of (*i >) *e before geminates, including *nC clusters, can be described by the following rules (see the next section for examples):

1.   In monosyllables, stressed *e > *ɛ before *nC, as before other clusters of two consonants. Before geminates, *e remained unchanged.
2.   In polysyllables, stressed *e > *ɛ after *e in a previous syllable. Elsewhere, *e before geminates remained unchanged.
3.   These new cases of stressed *ɛ before two consonants (including geminates) participated in the next stage of Philippi's Law (i.e. *ɛ́ > á, Blau's Law), yielding Biblical Hebrew *a*.
4.   After the operation of Blau's Law, stressed *e > *ɛ before geminated coronal consonants in polysyllabic words.

6.4   Conclusion

Combining the regular sound changes that had already been identified by previous authors and the conclusions reached above, we can formulate the following six rules. Together, they account for the development of original *i in stressed, closed syllables. As has been indicated in the text above, all apparent exceptions to these rules can plausibly be explained as being the result of analogy. In chronological order, the rules are:

1.   *i > *e in all positions. This was a very early sound change, which preceded even the contraction of triphthongs (see Chapter 5). As there was no Proto-Northwest-Semitic /e/, this was originally a purely allophonic change, without any effects on the inventory of phonemic vowels.
2.   Stressed *e > *ɛ before two different consonants in word-final and word-internal syllables. We may restrict the appellation 'Philippi's Law' to this development, for the sake of clarity, and because it covers the cases which were actually suggested by Philippi (1878). This sound change preceded the assimilation of *n to following consonants and postdated the second apocope of word-final short vowels (see Chapter 4). Thus, *bént 'daughter' > *bént, *ṣédq 'righteousness' > *ṣédq, *kabédta 'you (m.sg.) were heavy' > *kabédta. *šénn 'tooth', *barzéll 'iron', *qédmah[22] 'eastwards' and similar forms are unaffected.
3.   Stressed *e > *ɛ / eC_C:. Thus, *hepérr 'he broke' > *hepérr. *yāpérr 'he will break' and similar forms are unaffected.

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22   Or *qédmā.

4. Unstressed *e > *ɛ in word-final syllables. This sound change must ante-
    date the pausal stress shift (Blau 1981). Thus, *ḥaṣer- 'court (construct)'
    > *ḥaṣɛr-, *šenn- 'tooth (construct)' > *šɛnn-, *wayyélek 'and he went' >
    *wayyélɛk.

5. 'Blau's Law' (Woodhouse 2004): stressed *ɛ́ > *á, including previously
    unstressed vowels which have secondarily been stressed. This sound
    change must postdate the Greek and Latin transcriptions, as well as
    pausal lengthening and the pausal stress shift (Blau 1981). Thus, *ṣɛ́dq
    > *ṣádq, *hepérr > *hepárr, > *ḥaṣɛ́r > *ḥaṣár, *wayyēlɛ́k 'and he went
    (pause)' > *wayyēlák. *šɛnn-, *wayyélɛk 'and he went (context)' and sim-
    ilar forms are unaffected.

6. Stressed *e > *ɛ before geminate coronals in polysyllables. Thus, *barzéll
    > *barzɛ́ll. *šénn and similar forms are unaffected.

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 similar phenomena. 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 will identify five different changes involving the fronting and raising of original *a.

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, while *a became *i in words like מִדְבָּר 'wilderness' < *maḏbår, cf. the Septuagint transcription μαδβαρ, the *a is retained in words like מַלְאָךְ 'messenger', מַעְיָן 'source', and מַתָּנָה 'gift'. Brockelmann holds the same conditioning responsible for the different vocalization of מַלְכֵי 'kings (construct)' vs. דִּבְרֵי 'words (construct)', לַחְמִי 'my food' vs. זִבְחִי '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 תַּכְלִית 'end' as a form of dissimilation, as it does occur in formally similar words without following *i*, like תִּפְאֶרֶת 'glory'.

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

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 מַטְמֹן 'treasure', remains unexplained.

7.2.2   *Bauer and Leander (1922)*

Bauer and 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 *piʕel* perfect, like פִּתַּח 'he opened' besides Classical Arabic *fattaḥa*; the prefix vowel in *qal* and *niṗʕal* imperfects, like יִפָּתַח 'it will be opened' besides Classical Arabic *yanfatiḥu*; and unprefixed nouns like עִזִּים 'goats' besides *a* in the Classical Arabic singular *ʕanzun*, 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 יְלִדְתִּיךָ 'I have begotten you (m.sg.)', adduced by Bauer and Leander (1922), and notes that some מִקְטָל nouns might go back to a *miqṭalum 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

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2   *Das regellose Schwanken zwischen a und i …*

In this way, he explains the *i* of the *nip̄ʕal*, *piʕel* and *hip̄ʕil* perfects, the nominal forms discussed by Bauer and 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 מַקְטָל** in his account, but it analogically changed its first vowel to the *i resulting from the sound change in the construct state *maqṭal > מִקְטַל. 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 מַקְטָל**, for instance, it is hard to explain why not one such form is actually attested, except where *a precedes gutturals (like מַחְשָׁךְ 'dark place'), geminates (like מַדָּע 'knowledge') and *l* (like מַלְאָךְ 'messenger'), the conditions already identified by Brockelmann (1908). More seriously, this postulated sound change cannot be dated without encountering some contradictions. If it affected דִּבְרֵי '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 > דָּבְרֵי**; but this is incompatible with the evidence from words like מֵיטַב 'best (construct)' < *mayṭabu, which must still have had *a in the first syllable 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 (1960b)*

Much like Blake (1950), Chaim Rabin (1960b) 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 short vowels [*i*], [*ɛ*], 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

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

(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 יִרְאֶה 'he will see' versus יַרְאֶה '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. עֵז 'goat' versus עַז 'strong (m.sg.)'. 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 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 *qaṭqáṭ > *qiṭqáṭ dissimilation rule, but he notes (p. 139) that the prefix vowel of the *nipˁal* 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 *qatqát>qitqát* 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., *neʕĕbar*) and doubled consonants (e.g., *nittan*) is completely different from that of **maqtal>miqtāl* (e.g., *maʕăbār*, *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 last two i-vowels behave similarly, they need not have the same origin themselves, a point that is elaborated upon by Qimron and Sivan (1995).

7.2.7   *Huehnergard (1992)*

We have seen above that Bauer and Leander (1922) and Blake (1950) consider the *i* in the first syllable of the *piʕel* perfect to be the result of the Law of Attenuation, deriving from earlier **a*. In an insightful article on the shape of the *piʕel* 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. Based on the cognate forms in Aramaic, *qaṭṭel*, and Ugaritic, /qaṭṭila/, Huehnergard reconstructs **qaṭṭila* as the Proto-Northwest-Semitic form of the *piʕel* 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 *hipʕil* perfect prefix, he concludes that this development of **a > *i* is a Proto-Canaanite sound change; the general shape of the sound law is already hinted at by Lambdin (1985, 144). Its non-occurrence in the imperfect, **yVqaṭṭilu >* יְקַטֵּל, shows that it only operated in word-initial syllables. Huehnergard sees the same sound change as the source of the Hebrew קְטֵל adjectives like עִוֵּר 'blind', which should derive from **qiṭṭilum*. This pattern is not attested in other Semitic languages, but **qaṭṭilum* is, with similar semantics, in Akkadian. Interestingly, the expected outcome of **qaṭṭilum*, קַטֵּל******, is not attested in Biblical Hebrew.[4] Thus, this adjectival pattern seems to have shifted from **qaṭṭilum > *qiṭṭilum*, parallel to the change in

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4   The one possible exception, אַחֵר 'other', probably comes from **ʔaḥirum*, cf. the plural אֲחֵרִים < **ʔaḥirīma*, not אַחֲרִים****** < **ʔaḥḥirīma*. The singular has undergone pretonic gemination (Bergsträsser 1918, 139–140), a poorly understood sound change whose effects have largely been cancelled by analogy. There are also the *piʕel* infinitive and imperative, קַטֵּל, but these have preserved their **a* due to analogy with the imperfect.

the vocalization of the *piʕel*. As associated קֻטֶּלֶת abstracts, like עַוֶּרֶת 'blindness', could derive from a *qaṭṭiltum 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, *qáṭṭilum developed to *qíṭṭilum, but *qaṭṭíltum remained unchanged. A distribution like that of the *qaṭṭil(t)um nominals is found with the *qaṭṭul(t)um patterns: קֻטֹּל** < *qaṭṭulum is not attested, while קֻטֹּלֶת < *qaṭṭultum is, leading Huehnergard to conclude that "a more general proto-Canaanite rule may be proposed: $a > V_1 / \#C'_{\_}C_1C_1V_1$" (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 *piʕel* perfect was then analogically extended to the *hipʕil*: *yVqaṭṭilu (*piʕel* imperfect) : *qiṭṭila (*piʕel* perfect) = *yVhaqtilu (*hipʕil* imperfect) : *hiqtila (*hipʕil* 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 עִוֵּר 'blind' besides עַוֶּרֶת 'blindness' do strongly suggest that this was a conditioned sound change, and stress is a likely candidate 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 *ʕawwírum (> *ʕiwwírum) being stressed on the second syllable, while *ʕáwwirtum 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 *ʕáwwirum and *ʕáwwirtum should be stressed on the first syllable; if the system dictates that the stress fall on the last heavy syllable, this results in *ʕawwirúm and *ʕawwirtúm, 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), *ʕáwwirum and *ʕawwírtum, as Huehnergard suggests. No typologically plausible stress system would yield *ʕawwírum and *ʕáwwirtum.

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 מַמְלָכָה 'kingdom' < *mamlakatum vs. the construct state מַמְלֶכֶת < *mamlaktu and the suffixed forms like מַמְלַכְתּוֹ 'his kingdom' < *mamlaktahu. Occasionally, the vowelless form of the suffix is analogically extended to the absolute state: for normal מַצֵּבָה 'massebah' < *maʦˤʦˤibatum, we find מַצֶּבֶת in the absolute state in 2 Sam 18:18. If the alternation found in מַמְלֶכֶת 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), *ʕawwírum would have undergone assimilation of unstressed *a before a geminate to the following stressed *í, while the original absolute state *ʕawwirátum 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, *ʕawwirt-, analogically intruded into the absolute state, as in the case of מַצֶּבֶת. 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 and 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. 16 ff.):

1. Cases that are shared by all of Northwest Semitic. This category is limited to the result of the Barth-Ginsberg Law (Jacob 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 *nipˤal* 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 מִקְטָל 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-vowels[5] in nouns with four consonants becomes *i* (p. 20): *CaCCaC > *CiCCaC and *CaCCåC > *CiCCåC. Thus, for example, *mabṣar > מִבְצַר 'fortification (construct)', *maktåb > מִכְתָּב 'writing'. The sound change also operates in words in which the word-final syllable is open (p. 22): *taqwå > תִּקְוָה 'hope'. It is blocked before geminates (*maddåʕ > מַדָּע 'knowledge'), following or preceding a guttural (*maʕbar > מַעֲבַר 'ford (construct)'), in reduplicated nouns (*galgal > גַּלְגַּל 'wheel'), and sometimes before *r* and *l* (*marʔå > מַרְאֶה 'view', but *qaryå > קִרְיָה 'village'); *a was analogically restored in the *hipʕil* feminine participle מַקְטֶלֶת. A few other words also resist the sound change (p. 26), all of which are either loanwords (like פַּת־בַּג 'dinner table', from Persian) or are not stressed on either of the relevant a-vowels (like מַשְׂמַנִּים '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 מִקְטוֹל nouns besides מַקְטוֹל forms is attributed to an original difference in the prefix vowel (pp. 27–28). The *i* in plural construct states like דִּבְרֵי '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 *maqṭål* (Tiberian: מִקְטָל; pp. 28–29).[6] 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 יְלִדְתִּיךָ 'I have begotten you (m.sg.)' (besides יָלַדְתִּי '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, *CaCCå(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 *nipʕal* perfect prefix, remain unexplained altogether.

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5 *a, *å, and, only explicitly included on page 35, *ε.
6 Cf. Bravmann (1977, 17–20).

7.2.9   *Yuditsky (2010)*

Qimron and Sivan (1995) state that the first vowel in construct state plurals[7] like דִּבְרֵי '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. This idea is taken up and developed in a recent article by Alexey Yuditsky. Listing all words attested in a *qVṭle* or *qVṭloṯ* construct state plural (pp. 64–65), he notes that in the Tiberian tradition, about half of them have an *a* vowel, while the other half have *i* (or *ɛ*, considered to be an allophone of /i/ here; *qɔṭl-* 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. בַּעֲלֵי 'owners (construct)';
2.   If the first radical is a guttural, the vowel is usually *a* (38 cases against 16 with /i/), e.g. אַבְנֵי '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. מַלְכֵי 'kings (construct)'.

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

There are still some 34 words[8] that form the construct state plural with a different vowel than Yuditsky's rules predict, so 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.[9] Thus, פִּרְדֵיהֶם 'their mules' should have *a* according to Yuditsky's phonetic rules (פַּרְדֵיהֶם**), but it could have taken over the *i* found in the singular suffixed form, פִּרְדּוֹ 'his mule'. That the vowel must have been conditioned phonetically in some cases, at least, is shown by words like אַנְשֵׁי 'men (construct)', as the associated singular, אִישׁ '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

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7   Including the form of the plural noun to which the second and third person plural suffixes are attached.

8   Three 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.

9   Blau (2012) cites this case as an example of what he calls 'sound choice', but I am not convinced that this exists as a separate process.

expected **_i_, for instance, seven have _a_ (or *a) in another part of the paradigm, e.g. נַפְשׁוֹת 'lives (construct)' from the singular נֶפֶשׁ 'life' < *napš. שְׁדֵמוֹת 'terraces (construct)', from שְׁדֵמָה '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 from unattested forms of the paradigm; thus חִזְקֵי 'strong (construct)' from חָזָק 'strong (m.sg.)' with _i_ after a guttural, possibly from unattested חִזְקַת*[10] 'strong (f.sg. construct)', or פִּרְצֵיהֶן 'their breaches' from פֶּרֶץ with _i_ before _r_, possibly from unattested פִּרְצ-** before suffixes in the singular. The unexpected _i_ before _l_ in יִלְדֵי '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, יַלְדֵי 'idem', would then be the result of analogy with the forms with *a found in the rest of the paradigm, like יֶלֶד 'child' < *yald.

Morphologically different but phonologically similar parallels can be found in three other forms that have been seen as the result of attenuation: דִּמְכֶם 'your (m.pl.) blood' and יֶדְכֶן/יֶדְכֶם 'your (m./f.pl.) hand'. As דָּם 'blood' and יָד 'hand' are both *qaṭum nouns, their original *a was in an open, unstressed, non-pretonic syllable in these forms, e.g. *damVkémm, 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 and Sivan 1995), it is probably to be dated earlier than the attenuation seen in *maqtāl > מִקְטָל 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 and Sivan (1995). When the change occurs before _r_ and _l_ needs clarification.
- The _i_ in the first syllable of the _piʕel_ and _hipʕil_ perfects, as well as the development of *qaṭṭilum > קַטֵּל adjectives, is adequately explained by Huehnergard

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10   Itself with attenuated _i_ < *a due to Qimron and Sivan (1995)'s rule.

(1992). The sound law can be made phonetically more plausible by chang-
ing 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/ɛ* in
  דִּמְכֶם 'your (m.pl.) blood' and יֶדְכֶן/יֶדְכֶם 'your (m./f.pl.) hand'.

– The *a > *i change in the *nip̄ʕal* perfect prefix, the imperfect prefixes of the
  fientive *qal*, and some segolate forms before suffixes must still be explained.

7.3   Remaining Issues

7.3.1   *The* nip̄ʕal *Perfect Prefix*

As is noted by Lambdin (1985) and Huehnergard (1992), the change of *a > *i in
the *nip̄ʕal* perfect prefix must not be identified with the similar development
in the first syllable of the *piʕel* and *hip̄ʕil* perfects. For one thing, the condition-
ing is different: in open syllables, the *hip̄ʕil* also has *i, as in הֵקִים < *hiqīma 'he
erected', while the *nip̄ʕil* has maintained its *a there, as in נָסוֹג < *natʕsōga 'he
turned back'. If Huehnergard is correct, however, the *i in the *hip̄ʕil* was intro-
duced analogically, both in open and closed syllables, so it could have spread
to some categories in the *hip̄ʕil*, but not in the *nip̄ʕal*. More convincingly, the
sound changes are shown to have taken place at a different time by the evidence
from Amarna Canaanite, which attests a *hip̄ʕil* form with *i in *ḫi-iḫ-bi-e* /hiḫ-
biʔ(a)/ 'he hid' (EA 256:7), but *nip̄ʕal* forms with *a like *na-az-a-qú* /nazʕaqū/
'they were rallied' (EA 366:25).

  While the fact that this change in the *nip̄ʕal* prefix is a separate development
was noted by Lambdin (1985), its precise conditioning has not yet been estab-
lished. 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 and 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 develop-
ment 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 נִמְשַׁל) 'it was like' (Brønno 1943). The sound change only affected the
nip̄ʕal perfect prefix,[11] as other instances of unstressed *a in closed syllables,

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11   And seemingly that of the *nip̄ʕal* participle, on which see below.

like those discussed above, were preserved until later times. The pattern of the *nipʕal* perfect, *naqṭal or *naqṭala, would not have been matched by nouns at any time: noun stems ending in a single consonant would have undergone tonic lengthening (see Chapter 4)—like *maqṭāl—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 *nipʕal*. 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, *naʔman > *neʔman > נֶאְמַן 'he proved faithful', *nattan > *nettan > נִתַּן 'it was given', but *nasōg > נָסוֹג 'he turned back' and *namass > נָמֵס '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, unstressed *a in a closed syllable became *e; or formulaically, *a > *e / _CCáC#.

This sound change also seems to have affected the *nipʕal* participle, נִקְטָל < *naqṭalum (cf. Amarna Canaanite *na-aq-ṣa-pu* 'angry (m.sg.)', EA 82:27′), which would violate the conditions we have just established. However, this participle can 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.)', the *nipʕal* perfect *neqṭal could plausibly have given rise to the associated participle *neqṭāl. This analogical explanation seems preferable to a phonetic one, as it would be hard to explain why *naqṭāl shifted to *neqṭāl (attested in the Hexapla, see Brønno 1943, 107) while *maqṭāl remained unchanged until much later.

While strong *nipʕal* perfects with a guttural first radical all have -ֶ in the prefix and III-wy *nipʕal* perfects with a non-guttural first radical have -ִ, there are a few III-wy forms like נַעֲשָׂה 'it was done', with preserved *a*. This suggests that the change in the strong *nipʕal* 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 in the following section.

7.3.2   *The* qal *Imperfect Prefix*

As was already mentioned, the Barth-Ginsberg Law (Jacob 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 *yaqṭul- and *yaqṭil-, but *i if the stem contained *a, as in *yiqṭal-. 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.[12]

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12   Kossmann and Suchard (2018) argue that the Barth-Ginsberg Law is much older than

Like the *a > *i* change in the *nipͨ͂al* perfect prefix discussed above, however, the change in Hebrew imperfect prefixes that should have *a according to the Barth-Ginsberg Law (e.g. *yaqṭul > יִקְטֹל) 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.[13]

Phonetically, the sound change is similar to that in the *nipͨ͂al* 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 יֶחֱרַב 'it will be dry' reflecting *i and fientives like יַחֲרֹשׁ 'he will plow' reflecting *a. As in the *nipͨ͂al*, though, *a became *e > *i before geminates, as in *yatten > יִתֵּן 'he will give'. Unlike the change in the *nipͨ͂al*, 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 יִבְנֶה < *yabnē. Notably, *a was preserved in the *hipͨ͂il* imperfect, as in יַקְטִיל < *yaqṭīl, which shows that this 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]CV́C#, _C[-guttural]CV́#.

This sound change is shared by all Hebrew traditions, so it can be dated to Proto-Hebrew. Joüon and 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

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          this and should be reconstructed for the shared ancestor of Proto-Semitic and Proto-Berber.

13   This change is also frequently interpreted as an analogical extension of the *i-vowel original in *-qtal- verbs to *-qtul- and *-qtil- verbs. As in the case of the *nipͨ͂al* prefix, however, the phonetic conditioning under which the original Barth-Ginsberg distribution was preserved suggests that this change did not result from analogy, which should be less sensitive to phonetic contexts, but from regular sound change. An argument in favour of an analogical explanation is the retention of *a in many personal names shaped like imperfects (Rabin 1948). Given the difficulties of relying on names as a source of data for linguistic developments, however, I do not find this argument conclusive.

TABLE 34   Unambiguous *qaṭlum nouns with *a/*i interchange

BH	Meaning	Cognates
בֶּטֶן	'belly'	EA /baṭnu/, Arab. *baṭnun*
יֶתֶר	'cord'	Syr. *yaṯrā*, Gǝ. *watr*
מַס	'forced labour'	EA /mass-/
סַף	'bowl'	Akk. /sappu/ and /šappu/
פֶּרֶשׁ	'gut contents'	JBA פְּרְתָּא, Arab. *farṯun*, Akk. /paršu/
קֶבֶר	'grave'	Arab. *qabrun*, Akk. /qabrum/

Ø-, were applied." (p. 75) The change of *a to *e in the imperfect prefix should therefore be dated between Proto-Canaanite and Proto-Hebrew.

7.3.3   *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, זֶבַח < *zabḥ 'sacrifice' besides זִבְחִי 'my sacrifice', is not the most felicitous, however; Classical Arabic *ḏibḥun* 'sacrifice' makes it likely that this word goes back to *ḏibḥum, not *ḏabḥum, and that the *a in the unsuffixed form is due to Philippi's Law (see Chapter 6).[14] Of the segolates that show this *a/*i interchange, those in Table 34 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 מַס and סַף, in the plural. Thus, 'his grave' is קִבְרוֹ, 'bowls' is סִפִּים, 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. מַסִּים, for instance, can be contrasted with מַסָּד 'foundation', מַסָּה 'trial' and its plural מַסּוֹת, מַסֵּכָה 'molten image', and yet other words with various vowels following -מַס. Counterexamples can be found for any plausible conditioning of this supposed sound change.

Qimron and Sivan (1995, 30–31) accordingly dismiss the apparent interchange. According to them, this is a morphological development, not a phono-

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14   Classical Arabic also has *ḏabḥun* 'slaughter', with *a*, but *ḏibḥun* is a better semantic match with the Hebrew.

logical one. They cite many examples of words with the same meaning, but a different segolate noun pattern in different Semitic languages—like אַשְׁפָּה 'quiver', Ugaritic ⟨uṯpt⟩, Akkadian /išpatu/—or even within Tiberian Hebrew, like בֹּשֶׂם and בֶּשֶׂם, 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 עֵז 'goat' to Classical Arabic ʕanzun cited by Bauer and Leander (1922, 194). For the words given in Table 34, 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 conceivable. After the last stage of Philippi's Law (more accurately, Blau's Law) had taken place and unsuffixed *qiṭlum nouns had become *qaṭl, merging with historical *qaṭlum nouns, *qiṭlum 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' : *qebrō 'his grave'. This explains the *a/*i interchange in *qaṭlum nouns without having to posit an additional sound law.

7.3.4   *Attenuation before* l *and* r

Qimron and Sivan (1995, 25–26) list the examples and counterexamples of attenuation before *r* and *l* given in tables 35 and 36. To these, we may add attenuated מִרְבַּץ 'resting place (construct)', מִרְזַח 'banquet (construct)', מֶרְחָק 'distance', מִרְכֶּבֶת 'chariot (construct)', and מִרְעֶה 'pasture ground'; and unattenuated מַרְאֶה 'sight', פַּרְבָּר 'court', פַּרְסָה 'cloven hoof', יַלְדָּה 'girl', מַלְכָּה 'queen', מַלְמַד 'goad (construct)', שַׂלְמָה 'dress', and שַׁלְוָה 'ease'.

Of these, some words must be excluded. מִרְבָּה and שַׁלְאֲנָן are probably corrupt (Koehler and Baumgartner 1994–2001, 967, 1502), and סִרְפַּד is of uncertain etymology. פַּרְבָּר and its plural פַּרְוָרִים, מֶלְצַר and מֶלְתָּחָה are late loan-words;[15] if they were still current in spoken Aramaic at the time the Tiberian

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15   Loaned 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

TABLE 35   Attenuation and lack thereof before *r* according to Qimron and Sivan (1995)

Attenuated		Unattenuated	
BH	Meaning	BH	Meaning
מִרְבָּה	see text	בַּרְקֻנִים*	'threshing sledge?'
מִרְמָה	'deceit'	דַּרְדַּר	'thistles'
מִרְמָס	'trampled down pasture ground'	כַּרְפַּס	'fine cotton'
מִרְפַּשׂ	'muddied water (construct)'	מַרְצֶפֶת	'pavement'
מִרְקַחַת	'ointment mixture'	מַרְחֶשֶׁת	'cooking pan'
מִרְשַׁעַת	'wickedness'	מַרְאָה	'vision'
סִרְפַּד	'stinging nettle'	מַרְבַדִּים	'coverlets'
פִּרְחַח*	'brood?'	מַרְכָּבוֹת	'chariots'
קִרְיָה	'town'	מַרְכְּבוֹת	'chariots (construct)'
מִרְחַקִּים	'distant lands'	מַרְחַקִּים	'distant lands'
מֶרְחָב	'spacious place'	תַּרְתָּן	'commander'
מֶרְכָּב	'saddle'	פַּרְוָרִים	'courts'
מֶרְכָּבָה	'chariot'	קַרְקַע	'floor'
מֶרְקָחִים	'scented herbs'	סַרְעַפֹּתָיו	'its boughs'
מֶרְקָחָה	'ointment pot'	שַׂרְעַפָּי	'my disquieting thoughts'

*These are the attested forms in the Leningrad Codex; Qimron and Sivan write פִּרְחָח and בַּרְקֻנִים, respectively.

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 דַּרְדַּר and arguably קַרְקַע is already covered by Qimron and Sivan's observation that attenuation does not take place in reduplicated syllables, and אַלְמָן is covered by their rule that it does not occur after gutturals. אֶלְגָּבִישׁ should not undergo attenuation either, as its first consonant is also a guttural; it is attested with /a/ in Akkadian /algamešu/ and Ugaritic ⟨algbṯ⟩, indicating a kind of precious stone, but the irregular correspondences between this word, its 'cognates' in other languages, and even alternative forms in Hebrew (גָּבִישׁ and כְּפִיס, also cf. Akkadian /gamēsu/), which identify it as a loanword, mean we cannot be sure it ever had *a in Hebrew to

Akkadian /maštaktu/ 'wardrobe', respectively (Koehler and Baumgartner 1994–2001, 500, 1799, 962, 594).

TABLE 36   Attenuation and lack thereof before *l* according to Qimron and Sivan (1995)

Attenuated		Unattenuated	
BH	**Meaning**	**BH**	**Meaning**
זַלְעָפוֹת	'irritation'	בִּלְעֲדֵי	'except'
בִּלְעָדֶיךָ	'except for you (m.sg.)'	זַלְעָפָה	'irritation'
בִּלְעָדַי	'except for me'	זַלְעֲפוֹת	'fits (construct)'
מִלְחָמָה	'battle'	מַלְאָךְ	'messenger'
תִּלְבֹּשֶׁת	'raiment'	מַלְאֲכוּת	'assignment (construct)'
אֶלְגָּבִישׁ	'sleet'	אַלְמָן	'widower'
מֶלְצַר	'guardian'	שַׁלְאֲנָן	see text
מֶלְקָחַיִם*	'snuffers'	מַלְקָחֶיהָ	'its snuffers'
מֶלְתָּחָה	'wardrobe'		

*Qimron and Sivan and many manuscripts: מֶלְקָחָיִם.

begin with. תִּלְבֹּשֶׁת does not have an a-vowel, so it does not belong in the current discussion. Finally, we may exclude the words with *šwå* or a *ḥåṭep* vowel following the non-attenuated *a*, as attenuation never takes place in this context. This leaves us with the words listed in Table 37.[16]

Considering the data, a purely phonetic account of the distribution of *a* and *i*/*ɛ* seems impossible. That analogy must have played some role is shown by the occurrence of the doublet מֶרְחַקִּים/מַרְחַקִּים; 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 unaccented *a*. Thus, מַרְבַדִּים, מַרְחַקִּים, סַרְעַפֹּתָיו, and שַׂרְעַפַּי all maintain their *a*, as do the assorted non-loanword exceptions listed by Qimron and Sivan (1995, 26),

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16   The presence of *a in most of these words is confirmed by transcriptions or non-Tiberian traditions: cf. μαρμμωθ (מַרְמוֹת), Babylonian *marmas* (מַרְמָס), Latin *caria* and *cariath* (קִרְיַת/קִרְיָה), μαρ… (מֶרְחָב), Babylonian *markab* (מֶרְכָּב), Babylonian *marſa* (מַרְעָה), Babylonian *malḥåmå* (מִלְחָמָה), and Babylonian *malqaḥayim* (מֶלְקָחַיִם) (Murtonen 1988 s.vv.).

TABLE 37   Attenuation and lack thereof before *r* and *l*

Attenuated		Unattenuated	
BH	Meaning	BH	Meaning
מִרְמָה	'deceit'	מַרְצֶ֫פֶת	'pavement'
מִרְמָס	'trampled down pasture ground'	מַרְחֶ֫שֶׁת	'cooking pan'
מִרְפַּשׂ	'muddied water (construct)'	מַרְאָה	'vision'
מִרְקַחַת	'ointment mixture'	מַרְבַדִּים	'coverlets'
מִרְשַׁעַת	'wickedness'	מַרְכְּבוֹת	'chariots'
קִרְיָה	'town'	מַרְחַקִּים	'distant lands'
מֶרְחַקִּים	'distant lands'	סַרְעַפֹּתָיו	'its boughs'
מֶרְחָב	'spacious place'	שַׂרְעַפַּי	'my disquieting thoughts'
מֶרְכָּב	'saddle'	מַרְאֶה	'sight'
מֶרְכָּבָה	'chariot'	פַּרְסָה	'cloven hoof'
מֶרְקָחִים	'scented herbs'	זַלְעָפָה	'irritation'
מֶרְקָחָה	'ointment pot'	מַלְאָךְ	'messenger'
מִרְבַּץ	'resting place (construct)'	מַלְקָחֶ֫יהָ	'its snuffers'
מִרְזַח	'banquet (construct)'	יַלְדָּה	'girl'
מֶרְחָק	'distance'	מַלְכָּה	'queen'
מֶרְכֶּ֫בֶת	'chariot (construct)'	מַלְמַד	'goad (construct)'
מִרְעֶה	'pasture ground'	שַׂלְמָה	'dress'
זַלְעֲפוֹת	'irritation'	שַׁלְוָה	'ease'
בִּלְעָדֶיךָ	'except for you (m.sg.)'		
בִּלְעָדַי	'except for me'		
מִלְחָמָה	'battle'		
מֶלְקָחַיִם	'snuffers'		

מַשְׁמַנִּים (Neh 8:10),[17] מַשְׁאַבִּים, and מַשְׁאַבִּים. The words that do have an attenuated vowel, like מֶרְחַקִּים, can easily have taken it from the singular, like מֶרְחָק, 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 unsuffixed form of the word 'snuffers' should be read as מֶלְקָחַיִם. This should go back

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17   But also note five attestations of מִשְׁמָן* with *i* (Isa 10:16, Ps 78:31, Dan 11:24, Gen 27:28, 39). Given the difference in meaning ('fatness, fat ones, fertile places'), these may derive from a different word.

to an earlier form with a geminate *ḥ, *malqaḥḥáyim. The suffixed form מַלְקָחֶ֫יהָ
< *malqaḥḥéhå must then have undergone an otherwise unknown develop-
ment of *aḥḥɛ > *aḥɛ > *åḥɛ. This is problematic; if we reconstruct the word
as *malqåḥéhå, however, it has exactly the same vowels as *balʕådɛ́kå (see
below), which does undergo attenuation. As no phonetically plausible expla-
nation 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 *malqaḥḥéhå should therefore ten-
tatively be retained. Thus, the presence of unaccented *a and accented *ɛ in
*malqaḥḥéhå 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 בִּלְעָדֶ֫יךָ
show that even unaccented *å (as in *balʕådɛ́kå) was enough to cause the
change to i or ε. The non-attenuation of *malqaḥḥéhå shows that the accented
*ε is not the conditioning factor here.

   מֶרְכָּבָה and the other forms of this paradigm show an interesting distribu-
tion, with ε/i in the singular and a in the plural. This is hard to square 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-Shoshan 1989), where attenuation may be expected to
have yielded *markåbå > מֶרְכָּבָה, 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 מַרְכְּבוֹת. 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 and Sivan (1995), מַמְלָכָה 'kingdom'.
The majority of the attested forms of this word are forms without å or accented
a, like the construct state plural מַמְלְכוֹת. As מַמְלָכָה is quite a frequent word,
however, an analogical explanation is less convincing here than in the case of
מֶרְכָּבָה.

   Analogy may also explain the non-occurrence of attenuation in the קַטְלָה
nouns listed above. While most *qaṭlå nouns underwent attenuation, new
forms with restored *a could be derived from an associated masculine *qaṭl
noun.[18] The process is nicely illustrated by a doublet of words for 'ewe lamb':
attenuation yields *kabśå > כִּבְשָׂה, while the related masculine *kabś (> כֶּ֫בֶשׂ)

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18   Given 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

'male lamb' gave rise to a form with analogically restored *a, כִּבְשָׂה. Similarly, יַלְדָּה 'girl' can be based on *yald (> יֶלֶד) 'boy', and מַלְכָּה 'queen' on *malk (> מֶלֶךְ) 'king'; the attenuated, non-analogical form of the latter is attested in the personal name מִלְכָּה (Milcah). The masculine–feminine relationship is not as clear between שַׁלְוָה 'ease' and *šalw (attested with a personal suffix in שַׁלְוִי 'my ease'), but an analogical derivation does not seem implausible. Finally, פַּרְסָה 'cloven hoof' has a formal counterpart in *pars (> פֶּרֶס), 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 פַּרְסָה took its *a* from its Aramaic cognate, *parsṯā* (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 מַרְאֶה, מַרְאָה, and מַלְאָךְ, the ʔ following the *r* or *l* is a plausible inhibitor of attenuation. This is confirmed by the lack of attenuation in מַשְׂאַת 'tribute (construct)'.

For both מַלְמַד and שַׂלְמָה, 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 שַׂלְמָה, שִׂמְלָה. Both words go back to *śamlå, as is reflected by Classical Arabic *šamlatun*; שַׂלְמָה underwent metathesis of *ml > *lm, while שִׂמְלָה underwent attenuation. Since attenuation did take place before *rm in מִרְמָה and מִרְמָס, we cannot state anything more general than that *l before *m blocked the change of *a > *e. If this is also the reason behind the non-attenuation of שַׁלְוָה, we can extend the conditioning somewhat to *l before bilabials.

מַרְצֶפֶת and מַרְחֶשֶׁת remain unexplained. As in two other exceptions which are not mentioned by Qimron and Sivan (1995), מַטְוֶה 'yarn' and מַסְוֶה 'veil', their unattenuated *a* is followed by an ɛ. Attenuation did normally take place before accented ɛ, though, as is shown by the great number of מְקֻטֶּלֶת and מֻקְטֶה nouns. Perhaps these four exceptions have been vocalized as *hipʕil* participles, in which the *a* was analogically restored, but there is no real semantic motivation to support this. The non-attenuation in זַלְעָפָה, finally, defies explanation.

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.

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.[19] 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 *piʕel* 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 *hipʕil* 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#. Thus, the *nipʕal* perfect *naqṭal > *neqṭal. The *e was analogically extended to the other persons and numbers of the *nipʕal* perfect, and to the participle. This sound change 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[-guttural]CV́C#, _C[-guttural]CV́#. 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 יְלְדֵי '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.

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19   This 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.

5.   Unstressed *a in a closed syllable dissimilates to *e or *i before following *å or accented *a or *ε, either in the following syllable or later in the word, except in certain conditions (based on Qimron and Sivan 1995). Thus, *maqṭål nouns shifted to *miqṭål, 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 ʔ, or before clusters of any consonant and a nasal; thus *maʕråb 'west', *ʕakbår 'jerboa', *mattån 'gift', *dardar 'thistles', *malʔåk 'messenger', *śalmå '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 מִרְבַּץ < *marbaṣ < *marbeṣ 'resting place (construct)', cf. the associated absolute state מַרְבֵּץ.

6.   The apparent *a > *i shift in *qaṭlum nouns like קֶבֶר, -קִבְר before suffixes, is not a phonological development. Rather, it results from analogy with *qiṭlum nouns, once their absolute states had become *qaṭl, merging with original *qaṭlum nouns. This analogy 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: שַׁדְמוֹת 'terraces (construct)', מַרְצֶפֶת 'pavement', מַרְחֶשֶׁת 'cooking pan', מַטְוֶה 'yarn', מַסְוֶה 'veil', and זַלְעָפָה '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 Section 1.1.3). 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.