

LANGUAGE AND NATURE

PAPERS PRESENTED TO JOHN HUEHNERGARD ON THE OCCASION OF HIS 60TH BIRTHDAY

edited by
REBECCA HASSELBACH
and
NA'AMA PAT-EL



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Vowel Syncope and Syllable Repair Processes in Proto-Semitic Construct Forms: A New Reconstruction Based on the Law of Diminishing Conditioning

Richard C. Steiner, Yeshiva University*

1. Introduction

The idea of a Proto-Semitic syncope rule has its roots in the nineteenth century. Ewald (1863, p. 443, §173) conjectured that *-at is the original feminine ending but that, even so, the vowel syncope that abbreviated the ending to *-t took place already in Proto-Semitic.¹ Lagarde (1889–1891, p. 72), generalizing from a dozen segolate (*CvCC-) construct forms of bisyllabic (*CvCvC-) nouns and adjectives in Hebrew (e.g., *kāṭāp*, the construct of *kāṭep* ‘shoulder’), theorized that *all* segolate nouns originated as Proto-Semitic construct forms of bisyllabic nouns, and that their use as absolute forms was a late and erroneous development.

At the beginning of the twentieth century, Brockelmann (1903, p. 6) attempted to make Ewald’s insight more precise by formulating a rule:

Short vowels drop out in open unstressed medial syllables immediately after an open syllable with a short vowel and a ... primary or secondary accent.

Later in the article (p. 11), Brockelmann amends the rule:

So too after an open syllable with a long vowel and a two-peak accent.

This addendum is meant to account for forms such as Akkadian *tali(:)mtum* ‘sister’ (Brockelmann 1903, p. 11), Geez *nəgəšt* ‘queen’ < **nvguštu* (vs. masc. *nəguš* ‘king’ < **nvgu:šu*); Hebrew *ʾašmórāt* < **ʾašmurtu* (vs. *ʾašmu^wrá^h*), and *gəḇárāt* < **gvbirtu* (vs. *gəḇi^yrá^h*) (Brockelmann 1903, p. 12).

Brockelmann’s Proto-Semitic syncope rule has been accepted by some Semitists, with or without modification. Bauer and Leander (1922, p. 176) formulate the rule in diachronic terms: “Short free vowels fell out immediately after a free stressed vowel.” Bravmann (1977, p. 134) writes, “Though some of [Barth’s] objections² may be justified,

* Parts of this article are based on a paper entitled “A Proto-Semitic Alternation and Its Flip-flopped Akkadian Reflex,” read at the Third North American Conference on Semitic Linguistics, on April 22, 1975. I alluded to the paper in my two earliest published articles, and then I put it aside. The invitation to honor an outstanding Semitist has inspired me to dust it off and rethink the issue. I have added many new proposals, deliberately erring on

the side of incaution in an attempt to provoke debate. Professors J. Blau and L. Kogan have read the article and, like the editors of this volume, have done their best to save me from error, but that task is a daunting one, even for them.

¹ That seems to be the meaning of the phrase *im Semitischen* in line 17. Cf. the assertion in n. 3 that *-t is *uralt*.

² See below.

I adhere on the whole to Brockelmann's opinion." He believes that Proto-Semitic *t was "particularly frequent in biliteral monosyllabic nouns and in trilateral nouns with a long vowel in the second syllable" (ibid., p. 133).

Blau (2010, p. 264) appears to be in this camp as well, although he is pessimistic about the possibility of reconstructing the original structural description of the rule:

It stands to reason that these two feminine suffixes are genetically related, -at being the original ending from which, under certain phonetic conditions (caused by stress), the a was elided. The original conditioning of this elision has been blurred by widespread analogy, so that the original constraints can no longer be reconstructed.³ In Biblical Hebrew, there is a certain tendency to use -at (< -ā) in the absolute, -t in the construct and preceding pronominal suffixes (such as *mamlakat > מַמְלָכָה 'kingdom' in the absolute, מַמְלָכַת < *mamlakt in the construct, and מַמְלָכָתִי).

Other scholars have rejected Brockelmann's Proto-Semitic syncope rule. Barth (Barth 1903, p. 628) admits that *-at and *-t are etymologically related and that they split apart from each other already in the Proto-Semitic period. Nevertheless, he argues (ibid., pp. 628–36) that Proto-Semitic could not have had such a syncope rule because it is possible to reconstruct many counterexamples to it – verbs and nouns that seemingly did not undergo syncope in Proto-Semitic. In addition, he sharply criticizes Brockelmann's methodology. In his view, a Proto-Semitic *Lautgesetz* must be based solely on reconstructed Proto-Semitic forms.

Janssens (1975/1976, p. 278) believes that "in many of these cases -t has developed from -at in the separate languages, not in Proto-Semitic." For example, he argues that "in a prehistoric stage of Accadian the ending -at occurred more often than in the historic stage" (ibid., p. 279). He concludes that "no wordstructure (*sic*) had with certitude the ending -t in Proto-Semitic, except nouns ending in -īt, -ūt and the word *bintum 'daughter'" (ibid., p. 284).

Greenstein (1984, p. 40) eliminates the possibility of a Proto-Semitic syncope rule by assigning a late date to vowel syncope in West Semitic: "It is a bit startling to a Semitist ... to find that a rule of VOWEL DELETION had developed in Akkadian by the middle of the third millennium B.C.E. when the syncopation of short internal open vowels did not occur in the West Semitic languages before the first millennium B.C.E."

Dolgopolsky (1999, p. 102) believes that vowel syncope occurred in some of the West Semitic protolanguages, after the Proto-Semitic stage:

... any short vowel in the posttonic open syllable that follows another open short syllable is syn-copated:

pS *'kalab-um⁴ > pCan., pArab. *'kalb-Vm (> Hb. 'kelēḇ, Ar. kalbun).

pS *'šamalat-um > prae-Can., pArab. *'šaml-at-Vm (> Hb. *šim'lā, Ar. *šamlatun).

pS *kā'bir-at-Vm > pCan., pArab. *kā'birt-Vm 'burrying' [*sic*] (> Hb. kō'beret, but in Ar. the form has reintroduced a in the feminine ending due to morphological generalization of the fem. ending at-: qābir-at-un).

pS *'bin-at-um > pCan., pArab. *'bint-um 'daughter' (> Hb. 'bat, Ar. bintun).

Dolgopolsky's theory resembles Lagarde's in deriving segolate nouns in the Semitic languages from Proto-Semitic bisyllabic nouns.

Huehnergard (2004, p. 144) accepts the existence of a Proto-Semitic syncope rule, but he restricts it drastically: "Internal reconstruction indicates the existence of a Proto-Semitic rule of vowel syncope: a > φ / aC₁__C₁V, as in k'alalum > k'allum 'light, small.'"⁵ Concerning syncope in the feminine ending and noun stems, he writes (2006, p. 8),

Another characteristic of Akkadian is the syncope of unstressed short vowels. Internal reconstruction of course shows that this is not a feature of Proto-Semitic: most West Semitic languages do not exhibit such syncope,⁶ and in Akkadian allomorphs such as damqum ~ damiqtum and damiq ~ damqat show that we must

³ Cf. Huehnergard (2004, p. 147): "The original distribution of *-t versus *-at is difficult to recover with certainty."

⁴ The sign ' indicates that the following syllable is stressed.

⁵ Huehnergard 2004, p. 231.

⁶ This assertion needs clarification; it seems to contradict Huehnergard's own detailed description of Ugaritic vowel syncope

(1987, pp. 280–83), which includes a comparison with vowel syncope in Aramaic, Hebrew, and Akkadian (ibid., p. 282 n. 66). The syncope of unstressed short vowels is also attested in Old Arabic (see below).

reconstruct earlier forms such as **damiqum* and **damiqatum*. The evidence of Eblaite is mixed here, but some forms, such as *wa-ri/rí-gúm/gú-um* = *warikum* ‘side, flank’ (cf. Akkadian *warkatum*) do not exhibit syncope where Akkadian would. Since the process is attested in all forms of Akkadian, however, we may safely assign it to Proto-Akkadian.

In Steiner 1975, I restricted Proto-Semitic syncope to the construct state, based on internal reconstruction from Hebrew. I never published that paper, but I briefly mentioned the idea in a footnote a few years later (Steiner 1979, p. 166 n. 20):

... the alternation between absolute **CVCVC* and construct **CVCC* in a few Hebrew nouns (עֲלֵע/צֵלַע [‘rib’], שֵׁשׁוּ/עֵשֶׁן [‘smoke’], שֶׁכָר/שְׁכָר [‘wages’]) and adjectives (כֶּבֶד/כְּבֹד [‘heavy’], עָרְל/עֲרֵל [‘uncircumcised’], אָרֶךְ/אָרוּךְ [‘long’]) and the existence of feminine construct forms ending in **-CVCCt* (e.g. מַמְלָכַת [‘kingdom of’], מְרֻכְבַּת [‘chariot of’], מִשְׁפַּחַת [‘family of’], יְצֵטְרַת [‘crown of’]) are surely products of a very early syncope rule affecting construct forms.⁷

This theory, too, bears some resemblance to Lagarde’s theory, although I did not know of the latter until shortly before finishing the present article.

In the remainder of this essay, I present arguments for this theory, but one of them can be stated already at this point. In my view, most of the arguments that have been adduced against Proto-Semitic syncope do not apply to the version of the rule presented here. Thus, Barth’s counter-examples are not nouns in the construct state but rather nouns in the absolute state and verbs. Similarly, Greenstein’s dating of syncope in West Semitic (1984, pp. 40–41) is based on two verbal forms, one from Amarna Canaanite and the other from Ugaritic. Such evidence is, of course, perfectly compatible with a thesis that deals with construct forms. The same goes for Janssens’ claim that “in a prehistoric stage of Accadian the ending *-at* occurred more often than in the historic stage,” as well as Huehnergard’s claim that unsyncoated forms such as **damiqum* and **damiqatum* existed in Proto-Akkadian. I would only add that the attested, syncoated Akkadian forms, *damqum* and *damiqtum*, also existed in Proto-Akkadian, as conditioned variants and/or doublets of the fuller forms.

Finally, a word about Barth’s methodological strictures. Brockelmann’s methodology is indeed rather loose; his article presents an interesting idea without much in the way of rigorous proof. In rebutting that idea, however, Barth may have gone too far in the opposite direction, imposing an overly rigorous methodological requirement that would inevitably hinder progress in the field if strictly observed.⁸ I attempt to steer a middle course, basing my Proto-Semitic phonological rule not only on reconstructed Proto-Semitic forms (as demanded by Barth) but also on what I take to be vestiges of the rule that have survived in only one or two of the daughter languages. I present my methodology more fully in §3 below.

2. Proto-Semitic Syllable Constraints and Syllable Repair Processes

The thesis of this article is that at least one short open-syllabic vowel⁹ was deleted in Proto-Semitic construct forms of nouns and adjectives, as long as the deletion did not violate Proto-Semitic syllable constraints — but what were those constraints? It is generally agreed that Proto-Semitic did not permit syllables to begin or end with any of the following clusters: *CC*, *C:*, and *:C*.¹⁰

⁷ See also Steiner 2010, p. 227.

⁸ Barth himself based most of the “Proto-Semitic” reconstructions in his rebuttal on West Semitic data alone. Just as Brockelmann preferred to ignore Arabic in reconstructing his syncope rule, Barth preferred to ignore Akkadian in refuting it!

⁹ For nouns with more than one vowel of this type, see §10 below.

¹⁰ In this article, the symbol *:* represents any kind of length, be it consonant length (*C:*) or vowel length (*v:*). Thus, *v:* represents any long vowel, and *v* represents any short one.

I argue below that these syllable constraints did not interfere with the syncope rule as much as one might imagine, thanks to four Proto-Semitic syllable repair processes:

- (1) prothesis;
- (2) loss of length in/after consonants (degemination);
- (3) loss of length in/after vowels (vowel shortening);
- (4) syllabicization of semivowels and nasals.¹¹

These repair processes allowed syncope to operate at times in initial syllables, in syllables following syllables of the form CvC and Cv; and in two consecutive syllables.

I attempt to show that both the syncope rule and the syllable repair processes have left traces in the Semitic languages and that among these traces are phonological enigmas such as Hebrew *šte* 'two of (fem.),' *mälākāt* 'queen of,' *lābān* 'white of,' Aramaic *tarte* 'two of (fem.),' Arabic (*i*)*smu* 'name of,' Mehri *bārt* 'daughter of,' and Akkadian *ašti* 'wife of (gen.).'

It should be stressed that I am not claiming that the construct state was the only environment for Proto-Semitic syncope; the conditioning may well have been broader than that (including perhaps imperatives¹² and nouns with some¹³ or all of the suffixed pronouns), but I shall leave that possibility to others.

3. Methodology

During the past half century, historical linguists have turned their attention to linguistic universals, including universals that govern the evolution of phonological rules. When my (soon-to-be) teacher asked "Are There Universals of Linguistic Change?" he answered in the affirmative (Hoenigswald 1966, pp. 41–42):

Greenberg and others feel that sound change has a typical mechanism of successively widening scope. Sound change, they say, may begin as "sporadic," then become phonologically conditioned, and finally unconditional There is no doubt that here we have an important principle.

Not long afterward, Wang (1969, pp. 22–23) found that "the phonetic condition that originally stimulated the change may create a 'snowball' effect across the lexicon, so that the condition itself eventually becomes irrelevant." More recently, Janda and Joseph (2003, p. 214) have asserted that "sound-change rapidly yields to generalization along non-phonetic (phonological or morphological) and social lines that may contribute further regularity via extension to broader contexts."

In this article, I take it as a given that change in the conditioning of phonological rules is largely unidirectional. When phonological rules change, they normally do so in the direction of diminished phonetic conditioning, with one or more of the original phonetic conditions being eliminated through analogical change.

Analogical change can affect phonological rules in various ways; the elimination of original phonetic conditions is only one of the possible outcomes. Another possible outcome is elimination of the rules themselves. This occurs when analogical leveling turns most of the conditioned allomorphs generated by the rule into doublets,¹⁴

¹¹ It is remarkable that this list does not include epenthesis, the best-known syllable repair process in the daughter languages (e.g., mobile *shewa* and segolation in Hebrew). Epenthesis in Akkadian feminine segolates (**CiCCatu* > *CiCiCtu*) has been discussed since the nineteenth century; e.g., Zimmern 1890, p. 379; Janssens 1975/76, pp. 278–79, 283–84; Greenstein 1984, p. 44; Testen 2003.

¹² See note 74 below.

¹³ Possibly just the "heavy" suffixes (plural second and third persons), which always attract the stress.

¹⁴ Hoenigswald (1960, p. 39) explains how conditioned allomorphs become differentiated into doublets: "The Latin noun

stem for 'god, divine' once had, owing to an earlier conditioned sound change ..., two alternants, *de-* and *deiv-* (nominative singular *deus*; genitive singular *deivi*). Each was extended into the former domain of the other so that later there are two paradigms: **deos* (later *deus*), genitive *dei*; and *deivos* (later *dīvus*), genitive *deivī* (*dīvī*)." My sense is that analogical leveling works especially quickly in the Semitic languages because the root-and-pattern system tends to promote it. Although one occasionally finds the opposite process, in which two paradigms merge into one paradigm, the result is a syncretistic paradigm, in which the conditioning is clearly non-phonetic; for a Hebrew example, see Steiner 1996, pp. 255, 259 n. 5.

leaving at best a few relics of the original phonetic conditioning (or of the later, diminished phonetic conditioning). This too can be viewed as a kind of unidirectional reduction of phonetic conditioning.

In short, phonetic conditioning tends to be diminished by analogy, through either the loss of conditions or the loss of conditioned allomorphs. I refer to this as “the law of diminishing conditioning.”¹⁵ In my view, this law can be very useful in reconstructing the original conditioning of phonological rules in proto-languages. That is one of the reasons that I do not share the pessimism implicit in Blau’s assertion that “the original conditioning of this elision has been blurred by widespread analogy, so that the original constraints can no longer be reconstructed.”

Another reason for optimism is what I shall call “the principle of cognate anomalies.” This principle, explained below, is another tool that can be used to reconstruct the structural description of the Proto-Semitic syncope rule.

4. Syncope in Non-initial Syllables of the Stem

In Akkadian, “the last of two or more non-final short vowels in open syllables was syncopated” (Huehnergard and Woods 2004, p. 240; cf. Hasselbach 2005, p. 105). Greenstein’s formulation (1984, pp. 13–14) of the rule is similar: “Delete a short vowel in the environment VC_CV.” Greenstein (*ibid.*, pp. 40–42) argued that the Akkadian syncope rule had a Sumerian origin, but Edzard (1986, p. 360) was not convinced. To my mind, the fact that the Sumerian loanwords in Akkadian were exceptions to the Akkadian syncope rule (Greenstein 1984, pp. 31–32) is evidence against Greenstein’s thesis. It may well be true, as Greenstein believes, that borrowings from Sumerian retained their foreign phonological structure (at least for a while), but if the Akkadian syncope rule was really borrowed from Sumerian, a word like *nuḫatimmum* should have lost its second vowel *before* being borrowed. My own view is that Akkadian inherited the rule from Proto-Semitic but eliminated one of the original phonetic conditions. Fortunately, the lost condition can be recovered with the help of Hebrew.

In the Hebrew vocalization of the Masoretes (Tiberian more than Babylonian), there are adjectives of the form *CvCvC that have two construct forms. The adjectives *kābeḏ* ‘heavy’ and ‘ārel ‘uncircumcised,’ in addition to the expected construct forms *kāḇaḏ* and ‘āral found in biblical prose, have segolate (*CvCC) construct forms, *kāḇāḏ* < **kabdu* and ‘ārāl < **garlu*, in poetry (Steiner 2010, pp. 226–27). No synchronic rule can explain the shift of these adjectives to the segolate class in the construct state. These are clearly very archaic forms — relics preserved in poetry. Other segolate construct forms of adjectives are ‘ārāk (the construct of ‘āroḳ)¹⁶ and, in my opinion (*ibid.*, pp. 209–13), yāṭār (the construct of yāṭer in Gen 49:3).¹⁷ Segolate construct forms of nouns are slightly more common; as noted above, they include words for body parts (“rib,” “shoulder,” “thigh,” “hair”) and others (“slope,” “smoke,” “wages,”¹⁸ “fence”).¹⁹

Most of these examples have the form *CaCiCu(m) in the absolute state, syncopated to *CaCCu in the construct state; however, some of them have the form *CaCaCu(m) > *CaCCu, or *CiCaCu(m) > *CiCCu, or *CaCuCu(m) > *CaCCu. I have argued elsewhere (Steiner 1979, pp. 166–67 n. 20) that the vowel syncope in these forms must have preceded the loss of case endings in the construct state. Since the Hebrew case endings were lost earlier in the construct

¹⁵ This should be understood as an abbreviation of “the law of diminishing phonetic conditioning.” It applies only to *phonetic* conditioning.

¹⁶ Thus we have ‘ārāk ‘ap:ayim ‘long of patience’ (Prov 14:29, etc.) contrasting with ‘ōrāk ‘ap:ayim ‘length of patience’ (Prov 25:15) and with kšar ‘ap:ayim ‘short of patience’ (Prov 14:17).

¹⁷ Another form that probably belongs here is the obscure *lāben, attested only in its proclitic form lāḇān- ‘white of (teeth)’ (Gen 49:12). I suggest that its obscurity derives from the fact that it combines the peculiarities of both *kāḇāḏ* ‘heavy of’ and the noun *hāḇel* ‘vanity of.’ Thus, the original construct form of *lābanum was the syncopated *lābnu. Unlike most segolates, it did not keep its CvCC pattern very long after the loss of case endings in the construct state. Instead, thanks to its final resonant, it under-

went epenthesis early enough to be affected by the general stress shift, much like the noun *hāblu > *hābl > *hābel > *hābél > hāḇel (cf. Steiner 1976). The complete sequence of changes affecting the construct of *lābanum was thus: *lābanu > *lābnu > *lābn > *lāben > *lābén > *lāben > lāḇān-. The enigmatic construct form *hāḇel* ‘milk of’ must have a similar origin even though it does not end in a resonant.

¹⁸ The context of *śāḳār* in Prov 11:18 suggests that it is the construct form of *śāḳār*.

¹⁹ The construct form of *gāzel* ‘robbery,’ attested in Ezek 18:18 and Eccl 5:7, may belong here as well. Although the Tiberian reading tradition has *gézāl* < **gizlu*, the Babylonian reading tradition has the equivalent of *gāzāl* < **gazlu* (Yeivin 1985, p. 923) — the expected outcome of the syncope rule applied to **gazilu*.

state than in the absolute,²⁰ the vowel syncope that produced the construct forms discussed in this paragraph must be very early indeed.

These reconstructed examples of syncope look very much like the Akkadian examples, except for the fact that the Akkadian examples are not restricted to the construct state. Indeed, when we examine the state of the Akkadian examples, they seem, at first glance, to exhibit precisely the *opposite* conditioning, with syncopated *kabtum* ‘heavy’ in the reflex of the Proto-Semitic absolute state versus unsyncopated *kabit* ‘heavy of’ in the construct state. However, this is just an illusion created by the loss of case endings in the construct state, which turns the open penultimate syllable into a closed final one; the Akkadian syncope rule is, of course, not really conditioned by state.

In the Hebrew dual and plural too, there are a few alternations that seem to point to an old syncope rule conditioned by state. The most interesting is the word for ‘rear/remote parts’: *yarkātayim* (absolute) ~ *yarkāte^y* (construct). The absolute form occurs always (3x) with a spirantized *k*, while the construct form occurs always (15x) with an unspirantized *k* (pointing to early elision of the preceding vowel). This could very well be the reflex of a Proto-Semitic alternation: **warikataym/nv* (absolute) ~ **warkatay* (construct). Note the perfect match between this alternation and the one involving its masculine singular counterpart:

yarkātayim < **warikataym/nv* ~ *yarkāte^y* < **warkatay*
yāreḵ < **warikum* ~ *yārāk* < **warku*²¹

The Masoretes cannot possibly have manufactured this match or even been aware of it, for it is visible only through the lens of comparative and internal reconstruction. A similar match can be seen in the word for “slope(s).” In the plural, we find *ʾāšedō^wt* (absolute) ~ *ʾāšdō^wt* (construct). The relationship between the singular construct form *ʾāšād* < **ʾāšdu* and the plural construct *ʾāšdō^wt* (with unspirantized *d* in the construct form pointing to early elision of the preceding vowel) is comparable to the relationship between *yārāk* and *yarkāte^y*.

Also worth mentioning here is example 5 below, the word for ‘pairs/teams (of yoked/harnessed draft animals)’: *šāmādi^ym* (absolute) ~ *šimde^y* (construct). Here again we find unspirantized *d* in the construct form pointing to early elision of the preceding vowel. Most such construct forms underwent analogical leveling; in the case of the word for ‘flames,’ *rššapī^ym* ~ *rišpey/rišpe^y*,²² both the old construct form and the new one are attested.

In short, the pre-Hebrew syncope rule was more restricted than the Akkadian syncope rule, because it was conditioned by syntax in addition to syllable structure. We may assume that the syntactic conditioning reflects an original phonetic conditioning, with nouns in the construct state losing their stress (morphosyntactic proclisis).²³ Accordingly, the “law of diminishing conditioning” leads us to conclude that the pre-Hebrew version of the rule is more archaic than the Akkadian version.

In syllabic transcriptions of Ugaritic, we find doublets differing in the presence/absence of one short vowel, sometimes in the very same text, e.g., *ma-sa-wa-tu* = /masawa:tu/ alongside *ma-ās-wa-tu* = /maswa:tu/ ‘cypress(?) logs’; and *na-bá-ki-ma* = /nabaki:ma/ alongside *na-AB/NAB-ki-ma* = /nabki:ma/ ‘springs’ (Huehnergard 1987, p. 281).²⁴ Based on such pairs, Huehnergard (ibid., pp. 281–83) reconstructs two optional rules of vowel syncope, one pretonic in the environment *vC_Cv* and the other posttonic. The pretonic rule looks very much like our Proto-Semitic rule, except of course that it is (1) optional, (2) restricted to pretonic vowels, and (3) not restricted to the construct state. At least two of these differences are attributable to analogical leveling.

In the Aramaic vocalization of the Tiberians and the Syrians, the syncope/reduction²⁵ rule is even more general than the one in Akkadian. However, Beyer (1984, pp. 128–36) has claimed that this is a late development, and he has amassed an impressive body of evidence in support of this claim.²⁶ None of this evidence contradicts

²⁰ For bibliography and discussion, see Steiner 1976, p. 92.

²¹ For this alternation, see below.

²² Song 8:6, Ps 76:4. The variation between *rišpey* and *rišpe^y*, is pointed out already by David Kimḥi (1847, p. 361, col. b s.v. *ršp*).

²³ In the Masoretic vocalization, construct forms have normal stress, but they exhibit vowel changes that are associated with destressing elsewhere in the language: vowel reduction (e.g., *dāḅar* ‘word of’ ~ *dāḅār*), vowel shortening (e.g., *bān* ‘son of’ ~ *ben*), and monophthongization (e.g., *be^yt* ‘house of’ ~ *bayit*). All

of these suggest that in pre-Masoretic Hebrew, construct forms were proclitic.

²⁴ Cf. the fluctuation in the Uruk incantation between *ga-[a]b-re-e* (line 12) and *ga-ba-re-e* (line 37) (Geller 2006, pp. 82, 86, 88). There too we are dealing with the segolate plural infix (see below).

²⁵ By reduction I mean the replacement of vowels with mobile *shewa* instead of zero (quiescent *shewa*).

²⁶ For discussion of this and other evidence, see Kaufman 1983.

our thesis (since it includes no construct forms), and some of it may actually support it. Take, for example, the infix *-a-* inserted between the second and third consonants of at least some segolate plurals in virtually all of the pre-modern West Semitic languages.²⁷ In addition to citing transcriptions of the infix with cuneiform *a*,²⁸ Beyer (ibid., pp. 129, 453) points to Official Aramaic plurals such as *'mmyn* 'peoples,' *kddn* 'pitchers,' *šqkn* 'sack-cloths,' *dššn* 'doors,' and so on. In these segolate plurals in the absolute state, the double letters (not found in the singular)²⁹ seem to indicate that the infix was still pronounced. If so, the variation in TAD A4.7 Cowley 30 between *dššy* 'the doors' in line 11 and *dšyhm* 'their doors' in line 10³⁰ may indicate that Official Aramaic segolate plurals had the infix in the determined state but not in the bound state — or, at least, not with the suffix *-hm*.³¹ The analogy of Biblical Aramaic (not to mention Biblical Hebrew) suggests that segolate plurals had the same vocalization with the suffix *-hm* that they had in the construct state.³² In short, this variation may hint at a connection between syncope and the construct state.

In Arabic, bisyllabic nouns frequently have segolate variants that seem to exhibit syncope, but their relevance for the reconstruction of Proto-Semitic is uncertain. Sībawaihi (1885–1889, vol. 2, p. 277, lines 21–23) asserts that some Arabic nouns and verbs may be pronounced without one of their underlying vowels for ease of articulation.³³ His examples are all of the form *faʿl- < faʿil-/faʿul-*, e.g., *kabdun < kabidun* 'liver.' He tells us that such syncopated variants occur in the speech of some tribes (Banū Bakr b. Wāʿil and many of the Banū Tamīm), but unfortunately he does not mention if these tribes have the unsyncopated variants alongside the syncopated ones. This dialectal variation is, of course, reminiscent of the variation in some Semitic words for 'heavy': Hebrew *kāḇed < *kabidum ~ kāḇād < *kabdu* and Akkadian *kabtum ~ kabit*. However, it is far from clear that the Arabic form *kabdun* is inherited from Proto-Semitic. The fact that Sībawaihi's examples include verbs as well as nouns and exhibit the elision of high vowels only (as in the later so-called "differential dialects") suggests that this may be an independent development within Arabic. In his initial remarks, Rabin (1951, p. 97) seems to be a firm proponent of this view:

The most outstanding difference between the phonetics of the Eastern dialects and West-Arabian is that in the former vowels are changed under the influence of surrounding phonemes and of stress, while such influences are almost wholly absent from West-Arabian. The latter preserves the fuller forms found in cognate languages, such as Canaanite and Ethiopic. Classical Arabic on the whole sides more with West-Arabian in this respect than with the Eastern dialects. Since it exhibits this character in the oldest poetry, where Hijazi influence is quite unthinkable, we can only attribute the preservation of the full vowels to the archaic character of Classical Arabic, and assign to the vowel elision of the Eastern dialects a comparatively late date.

A few lines later, however, he backtracks a bit:

It cannot always be said that the Hijazi form is older and the Eastern form produced by elision. As the instance of Arabic *malik* and Hebrew *malk-* proves, there was a good deal of wavering between segolate and bisyllabic noun forms in Semitic.

This statement leaves the door open a crack for the possibility that the Eastern form *kabdun* 'liver' and the Hebrew construct form *kāḇād* 'heavy of' are both reflexes of the Proto-Semitic construct form **kabdu* 'liver of; heavy of,' just as *kabidun* 'liver' in West-Arabian and Classical Arabic and *kāḇed* 'liver; heavy' in Hebrew are both reflexes of the Proto-Semitic absolute form **kabidum* 'liver; heavy.'

²⁷ According to Huehnergard (2006, p. 9), there may also be an Old Assyrian example.

²⁸ For example, *ga-ba-re-e* 'men' and *ru-ga-ze-e* '(eruptions of) anger' in the Uruk incantation. However, as noted in note 24 above, the syncopated form *ga-[a]b-re-e* 'men' occurs there as well. Was the spread of syncope just beginning at the time? Was it a variable rule outside of the construct state?

²⁹ Muraoka and Porten (1998, p. 39) muddy the waters by raising the possibility that singular forms like *lby* and *bṭllh* show "that the phenomenon is not confined to plural nouns, unless one should postulate two distinct variants." Since these non-segolate

biforms are well established on independent grounds (see, e.g., ibid., n. 187), they should not be cited as counterexamples.

³⁰ This variation is noted but not explained by Muraoka and Porten (1998, p. 38).

³¹ It is possible that the alternation between [dašaʕay:aʕ] and [daš:ayhum] was an innovation on the analogy of the alternation between [kalabay:aʕ] and [kalbayhum]. If that is the case, then, strictly speaking, only [kalbayhum] can be described as a product of syncope.

³² See note 13 above.

³³ For discussion, see Rabin 1951, p. 97; and Fleisch 1961, p. 157.

We can now turn to some Proto-Semitic examples. Many of them are drawn from the groundbreaking dictionary of Militarev and Kogan (2000–), which the reader should consult for a full presentation and evaluation of the data. One of the many important contributions of this work is the decision to “postulate two or even three alternative protoforms, especially in cases in which deviations from traditional reconstructions are identical in more than one language” (ibid., vol. 1, p. cxxxvi). Among the examples given of this approach are reconstructed forms with vowels in parentheses (ibid., vol. 1, p. cxxxvii). This is quite legitimate, even by the strict standard I have called for elsewhere (Steiner 1987), because it is not uncommon for individual Semitic languages to have two variants of a single noun, one with vowel syncope and one without it.

- (1) ‘(back of) shoulder, shoulder blade’: **katipum* (absolute) ~ **katpu* (construct); cf. Militarev and Kogan (2000–, vol. 1, pp. 138–39, no. 154): **kat(i)p-*, that is, **katip-* and **katp-*. The alternation survives in Hebrew: *kāṭēp* (absolute) ~ *kāṭāp* (construct). It is possible, but not certain, that Arabic *katfun* (alongside *katifun* and *kitfun*)³⁴ is a direct descendant of Proto-Semitic **katpu* rather than an inner-Arabic parallel development from Proto-Semitic **katipum*.
- (2) ‘rib, (side of) chest’: **šila^cum* (absolute) ~ **šil^cum* (construct); cf. Militarev and Kogan (2000–, vol. 1, pp. 243–44, no. 272): **šil(a)^c-*, that is, **šila^c-* and **šil^c-*. Here, too, the alternation survives in Hebrew: *šelā^c* (absolute) ~ *šāla^c* (construct). And here, too, it is possible, but not certain, that Arabic *dil^cun* (alongside *dila^cun*)³⁵ is a direct descendant of Proto-Semitic **šil^cu* rather than an inner-Arabic parallel development from Proto-Semitic **šila^cum*.
- (3) ‘hip(-bone)’: **warikum* (absolute) ~ **warku* (construct); cf. Militarev and Kogan (2000–, vol. 1, pp. 258–59, no. 288): **warik(-at)-*. As noted above, the alternation survives in Hebrew: *yāreḳ* (absolute) ~ *yārāḳ* (construct). And once again, it is possible, but not certain, that Arabic *warkun* (alongside *warikun*)³⁶ is a direct descendant of Proto-Semitic **warku* rather than an inner-Arabic parallel development from Proto-Semitic **warikum*.
- (4) ‘moon, month’: **wariḥum* (absolute) ~ **warḥu* (construct); cf. Kogan (2011, p. 193 §2.3.3): **war(i)ḥ-*. In Hebrew, *yāreāḥ* ‘moon’ is normally in the absolute state,³⁷ while singular *yārah* ‘month’ is normally in the construct state.³⁸ In Standard Biblical Hebrew, the word for ‘month’ in the absolute state is *ḥódāš*, as a result of the following semantic development:

	month	month of	moon	new moon
Pre-Hebrew	* <i>yariḥu</i>	* <i>yarḥ</i>	* <i>yariḥu</i>	* <i>ḥudt yariḥi</i> ³⁹
Hebrew	<i>ḥódāš</i> ⁴⁰	<i>yārah/ḥódāš</i>	<i>yāreāḥ</i>	<i>ḥódāš</i> ⁴¹
(cf. Akkadian	<i>warḥum</i>	<i>warḥu</i>	<i>warḥum</i>	<i>warḥum</i>)

³⁴ See Zimmern 1890, p. 369; Ullmann 1970–, vol. 1, p. 48 s.v. *katifun*.

³⁵ See Rabin 1951, p. 97.

³⁶ See Zimmern 1890, p. 369.

³⁷ Twenty-six examples plus one example with suffixed pronoun.

³⁸ Five examples plus one Late Biblical Hebrew example in the absolute state.

³⁹ The original meaning of this phrase must have been “renewal of the moon”; cf. the phrase *ḥid:uwš hay:āreāḥ* used by David Kimḥi (1847, p. 97, col. a, l. 7 s.v. *ḥdš*) in explaining the etymology of *ḥódāš*. Cf. Ugaritic *b ḥdt yrḥ* ‘on the new moon’ (Olmo Lete and Sanmartín 2003, p. 356 s.v. *ḥdt* II). Cf. also Phoenician *bḥdš yrḥ* ‘*tnm* and *bḥdš yrḥ p’lt*, but these are usually taken to mean

‘at/with the new moon of the month of E./P.’ (Donner and Röllig 1973–79, vol. 2, p. 54 [37A 2; 37B 2]; Amadasi and Karageorghis 1977, pp. 104–05, 118–19; Hoftijzer and Jongeling 1995, p. 351 s.v. *ḥdš*). If this interpretation is precise, the phrase has undergone semantic reanalysis in Phoenician.

⁴⁰ The shift from ‘new moon’ to ‘month’ is of course a case of synecdoche, as pointed already by David Kimḥi in his commentary to Ps 81:4. The shift seems to be exhibited in Ugaritic dates such as *b šb^c ḥdš*, even though Olmo Lete and Sanmartín (2003, p. 356 s.v. *ḥdt* II) render this as ‘on the seventh (day) of the new moon.’

⁴¹ Already in Ugaritic the phrase *ḥdt yrḥ* is abridged to *ḥdt* in the phrase *ym ḥdt* ‘day of the new moon’ (Olmo Lete and Sanmartín 2003, p. 356 s.v. *ḥdt* II).

Alternation between the two Hebrew words for “month” can be seen in 1 Kgs 6:38 (*bəyārah bu^{wl} hu^w haḥódāš haš:əmi^yni^y*) and 8:2 (*bəyārah ha’etāni^ym ... hu^w haḥódāš haš:əbi^y‘i^y*). This alternation supports the claim that *yārah* could not be used in the absolute state in Standard Biblical Hebrew.

- (5) ‘pairs/teams (of yoked/harnessed draft animals)’: *šimadu:ma* (absolute) ~ *šimdu:* (construct). Note the reconstruction of the absolute plural form with the vocalic infix *-a-*, despite the fact that it is absent in Akkadian *šindu:*. As noted above, the vocalic infix is attested for at least some segolate plurals in virtually all of the pre-modern West Semitic languages; our reconstruction assumes that it goes back to Proto-Semitic (not merely Proto-West-Semitic)⁴² and that it was lost in Akkadian when the syncope rule was extended to the absolute state⁴³ and other non-proclitic forms. As noted further above, the alternation survives in Hebrew: *šmādi^ym* (absolute) ~ *šimde^y* (construct).

5. Syncope in the Feminine Ending

Reflexes of both **-at* and **-t* survive in virtually all of the ancient descendants of Proto-Semitic, but none of those languages has a (productive) phonological rule that governs the relationship between the two feminine endings. That is the case even in Akkadian, where the similarity between *šanat* ~ *šantum* and *rapaš* ~ *rapšum* led Delitzsch (1906, p. 97, §45b) to view these alternations as products of the same vowel syncope rule.⁴⁴ This view is no longer accepted. There appears to be a consensus today that, from a synchronic point of view, the absence of a second *a* in *rapšum* is the result of a vowel syncope rule, while the absence of *a* in the feminine ending of *šantum* is not. From a diachronic point of view, however, I believe that Delitzsch was right. In other words, Proto-Semitic **-t* was derived from underlying **-at* by a vowel syncope rule.

The relationship between **-at* and **-t* is less obvious in Hebrew, but it is arguably more revealing there. As noted above, in some nouns the two proto-variants are in complementary distribution, conditioned by the syntax (absolute state vs. construct state), e.g., *mamlākā^h* < **mamlakatum* ~ *mamlākāt* < **mamlaktu* ‘kingdom’; *mārkābā^h* < **markabatum*⁴⁵ ~ *mirkābāt* < **markabtu* ‘chariot’; *māl’ākā^h* ~ *māl’ākāt* ‘work’;⁴⁶ *map:āla^h* ~ *map:ālāt* ‘ruin’; *mišpāhā^h* ~ *mišpāhat* ‘clan’; *‘āṭārā^h* ~ *‘āṭārāt* ‘crown’; *dəbēlā^h* ~ *dəbālāt* ‘cake of pressed figs’; *šlōšā^h* ~ *šlōšāt* ‘three’; *‘arbā^h* ~ *‘arbāt* ‘four’; *ḥāmīšā^h* ~ *ḥāmēšāt* ‘five’; *šiš:ā^h* ~ *šēšāt* ‘six’; *‘āšārā^h* ~ *‘āšārāt* ‘ten.’ In my view, this alternation cannot be separated from the alternation discussed in the preceding section; both derive from a Proto-Semitic vowel syncope rule. It is true that a number of these lexical items seem to postdate Proto-Semitic. For example, there is no evidence for chariots or other wheeled vehicles in Mesopotamia before the third millennium B.C. (Dalley 1995, p. 414).⁴⁷ We must assume, therefore, that the Proto-Semitic syncope rule continued to operate in Northwest Semitic down to historical times.

In other Hebrew nouns, the two proto-variants are in free variation in the absolute state, e.g., *mo’ābiy:ā^h* ~ *mo’ābi^yt* ‘Moabites’; *šibyā^h* ~ *šəbi^yt* ‘female captives (collective)’; *ḥaṭ:ā’ā^h* ~ *ḥaṭ:ā’t* ‘sin’; *mat:ānā^h* ~ *mat:at* < **mantantu* ‘gift’; *tiṣ’ārā^h* ~ *tiṣ’ārāt* ‘glory’; *bu^wšā^h* ~ *bōšāt* ‘shame’; *nəḥu^wšā^h* ~ *nəḥōšāt* ‘copper’; *yab:āšā^h* ~ *yab:āšāt* ‘dry land’ (together in Exod 4:9!). The same free variation is found in G-stem participles, e.g., *‘okālā^h* ~ *‘okālāt* (pausal *‘okelā^h* ~ *‘okālāt*) ‘consuming’ (three verses apart in Isa 30 in the expression “consuming fire”!); and in Iy/w G-stem verbal

⁴² For a possible trace in Old Assyrian, see Huehnergard 2006, p. 9.

⁴³ Once the infix was lost in the overwhelming majority of segolate plurals, there would be no reason for speakers to preserve it in the few segolate plurals where syncope may have been blocked.

⁴⁴ For a survey of the scholarly literature, see Greenstein 1984, pp. 45–46.

⁴⁵ Cf. Coptic *brčout* ‘chariot’ < New Kingdom *mrkbt* (Hoch 1994, pp. 145–47). According to Hoch (ibid., p. 146) the Coptic vowel points to *markābatu* rather than *markabtu*.

⁴⁶ So in the Tiberian reading tradition; the Babylonian reading tradition has *mal’ākā^h* ~ *mal’ākāt* (Yeivin 1985, p. 1015).

⁴⁷ Of course, we cannot rule out the possibility that **markabatum* originally had a different meaning.

nouns, e.g., *de^áh* ~ *dá^át* ‘knowledge’.⁴⁸ Free variation between **-at* and **-t* is found only rarely in the construct state, e.g., *maš:ābat* ~ *maš:ābāt* ‘pillar of’; *malkat* ~ *mālākāt* ‘queen of’;⁴⁹ and *mat:ānat yādo^w* ~ *mat:at yādo^w* ‘his donation (lit., the gift of his hand).’ According to the “law of diminishing conditioning,” all of this free variation must be a later development, a product of analogical leveling.

In Ugaritic, only *-at* is found after bases ending in CC (Huehnergard 1987, p. 295). This “phonologically necessary” distribution appears in all of the Semitic languages (Huehnergard 2004, p. 147). In other environments, no regularity is apparent in the data collected by Gordon (1965, pp. 52–53 §8.3) and Huehnergard (1987, pp. 295–96).⁵⁰

We may now consider three Proto-Semitic examples:

- (6) ‘childbirth, giving birth’: **lidatum* (absolute) ~ **lidtu*/**lit:u*⁵¹ (construct). Most of the Semitic languages preserve only one of these three forms. The absolute form survives in Arabic *lidatun*, Geez *ladat*, and Ugaritic *ldt*.⁵² Two of the forms survive in the Akkadian word for ‘offspring’: *lit:um* (absolute) ~ *lidat* (construct). All three forms survive in Hebrew: *leḏāh*, *lādāt*, and *lat* (1 Sam 4:19).⁵³ Of these, only *lādāt* is attested as a construct form.
- (7) ‘ten’: **ašaratum* (absolute) ~ **ašartu* (construct). The alternation survives in Hebrew: *‘āšārā^h* ~ *‘āšārāt* ‘ten.’

In the third example, the Semitic conditioned variants ended up as Canaanite dialectal variants:

- (8) ‘year’: **šanatum* (absolute) ~ **šantu*/**šat:u*⁵⁴ (construct). In Northern Hebrew, Moabite, and Phoenician, we find *šat* < **šat:u* even in the absolute state (Garr 1985, pp. 93–94). In Biblical Hebrew, we have *šānā^h* < **šanatum* in the absolute state and *šānat* in the construct state. The simplest explanation is that Proto-Semitic **šanatum* and **šat:u* became doublets in Proto-Canaanite and that the daughter languages selected one or the other. This is a good example of dialectal differentiation following analogical leveling. Something similar may have happened with the word for ‘widow,’ appearing as *‘almānā^h* in Hebrew but *‘almat* in Phoenician.

Another example of dialectal differentiation has been suggested by Blau (2010, p. 264). According to him, the Hebrew absolute form *bārāqat* ‘emerald,’ a doublet of *bārākāt* ‘id.,’ is “presumably borrowed from another dialect that preserved *-at*.” Blau compares the Phoenician toponym *Šārāpat* ‘Sarepta,’⁵⁵ a comparison that is of interest for two reasons. First, it suggests that *bārāqat*, attested in a prophecy addressed to the king of Tyre (Ezek 28:12–13), is a Phoenician form.⁵⁶ Second, the ending of the toponym in question reflects **-at* in some sources and **-t* in others: Hebrew *Šārāpat*, Egyptian *Da-ar-pá-ta* (so according to Albright 1934, p. 42), Arabic *Šarafand* vs. *Šarīptu*, Greek Σαρεπτα, Σαριφθα, and so on (Murtonen 1986–1990, vol. 1, p. 319).

Hebrew is the only Semitic language in which we find a significant number of examples of **-t* in the construct state alternating with **-at* (> *-ā^h*) in the absolute. In Akkadian, the situation looks very different; indeed, at first glance it appears to be the polar opposite, with **šat:um* in the reflex of the Proto-Semitic absolute state versus **šanat* in the construct state. Here too, however, the reversal is just an illusion created by the loss of case endings in the construct state.⁵⁷

There is, in fact, one indication in Akkadian that *-t* was once associated with the construct state. Alongside of *aš:at* ‘wife of,’ there is a second, irregular construct form *ašti* occurring only in the genitive case. This form bears a remarkable resemblance to the Hebrew construct form *‘ēšāt* < **išt-* ‘wife of’ (abs. *‘iš:ā^h*) in that both exhibit an

⁴⁸ The forms *tokeḥā^h* and *toḳāḥat* appear to have diverged to the point where they have distinct plural forms and perhaps different nuances as well.

⁴⁹ See example 29 below.

⁵⁰ Huehnergard (1987, p. 295) refers to the distribution in these other environments as “free variation,” but given the dearth/absence of actual doublets in Ugaritic (comparable to the Hebrew doublets immediately above), it may be preferable to use the term “lexical conditioning.”

⁵¹ For assimilation in Proto-Semitic, see §8 below.

⁵² For *-at* as the feminine ending of the last form, cf. Ugaritic *šat* ‘coming out of.’

⁵³ For the vowel of the last form, cf. *bat* ‘daughter’ and *māšārat* ‘serving’ (1 Kgs 1:15).

⁵⁴ For assimilation in Proto-Semitic, see §8 below.

⁵⁵ For personal names in the Bible with an *-at* ending, see Driver 1913, p. 139 (although the Semitic origin of the name *Goliath* has been contested).

⁵⁶ If so, the vowel of the ending (*a* rather than *o*) hints that this borrowing predates the transcription *Ab-di-mil-ku-ut-ti* from the time of Esarhaddon; see Friedrich and Röllig 1999, p. 40, §78.

⁵⁷ See the discussion of Akkadian *kabtum* ~ *kabit* in §4 above.

unexpected absence of gemination. The importance of this similarity cannot be overstated, because these forms are anomalous in both Akkadian⁵⁸ and Hebrew.

Here we may invoke what I shall call “the principle of cognate anomalies”: corresponding forms in two cognate languages that are anomalous in both are very reliable witnesses to the proto-language (or even the pre-proto-language), since they are highly unlikely to have resulted from parallel (independent) development. To my mind, the correspondence between these aberrant construct forms, *ašti* in Akkadian and *’éššät* in Hebrew, is the closest thing that students of Proto-Semitic have to the holy grail.⁵⁹ I shall return to these forms and similar ones in §8 below.

Another very significant vestige of what must now be considered the original conditioning is found in Mehri. In that language, the feminine singular ending is virtually always derived from **-at*, with the vowel usually lengthened and often raised to [e:] or [i:], as in *kəwbe:t* ‘bitch’ and *balit* ‘mistress’ (Rubin 2010, pp. 59–60). Although “the construct state ... has all but disappeared ..., remnants of the older construction survive with a handful of words” (ibid., p. 74). Among these words is one that is relevant to our topic, namely, the word for “daughter.” This appears as *bri:t* (definite *ḥəbri:t*) in the absolute state, but *bərt* in the construct (ibid., pp. 60, 74). Thus, the interrogative phrase “whose daughter? (lit., the daughter of whom?)” can be expressed in Mehri either as *bərt mo:n* or as *ḥəbri:t ḏ-mo:n* (Watson 2009, p. 232). Here we have a clear case of **-at* in the absolute alternating with **-t* in the construct. I return to this form in §10 below.

In Arabic, too, **-t* survives in only a handful of forms, including *bintun* (alongside (*i*)*bnatun*) ‘daughter’ and *uḥtun* ‘sister.’ I agree with the view of Dolgopolsky (1999, p. 160 n. 53) that “in Arabic the syncopated *a* in *-at-* was reintroduced everywhere, except for some archaisms like *bint-un* ‘daughter’ (< pS **bin-at-um*), due to grammatical analogy.” The survival of **-t* in Arabic *bintun* and *uḥtun* must be attributed to the common use of “daughter of X” and “sister of X” — both in the construct state — to identify women. This usage is well attested in Arabic,⁶⁰ not to mention Biblical Hebrew⁶¹ and so on. Here we see another correlation, albeit a weak one, between **-t* and the construct state.

6. Syncope in Initial Syllables of the Stem and “Prothetic Aleph”

The use of prothetic vowels (the so-called prothetic *aleph*) in the Semitic languages has been discussed for at least a millennium,⁶² and yet its origin is still poorly understood. Militarev and Kogan (2000–, vol. 1, cxliii) state that “the strict phonetic conditions under which the prothesis must take place have never, to our knowledge,

⁵⁸ So I was assured by Walter Farber and the late Erica Reiner in 1981; cf. Soden 1995, p. 17, §12f: “ganz ungewöhnlich.” Most of the parallels I know of have *-artum* for *-ar:atum*, viz., *martum* ‘gall bladder’ < **mar:atum* (contrast *mar:atum* ‘bitter [fem.]’) and *sartum* ‘falsehood’ < **sar:atu* (contrast *sar:atum* ‘lies’). Greenstein (1984, pp. 52–53) views the degemination that produced *ašti* as a later development, an example of “weak” phonological change within Akkadian, comparable to the “weak” diachronic phonological change in *be:la/etum* > *beltum* ‘lady’ and *mar:atum* > *martum* ‘daughter.’ He argues (ibid., p. 53) that “the stem was ... restructured as /ʔaš+t/ ... and the construct was formed by the phonological rule of *i*-ADDITION.” In Greenstein’s analysis, the ending of the construct form *ašti* is quite different from the ending of the construct forms *belti* (for *belet*) and *marti* (for *marat*): “These words ... are not simple constructs but archaic formations in which the genitive case ending *i* is preserved word-finally” (ibid., p. 52). Since *ašti*, too, is a construct form in the genitive case according to the editors of the CAD, the reason for this difference is not completely clear to me. Why not include *ašti* among the “archaic formations in which the genitive case ending *i* is preserved word-finally”?

⁵⁹ Brockelmann (1903, p. 15) believes that the correspondence between *ašti* and *’éššät* is the product of parallel development, but

this belief forces him to posit various contaminations and folk-etymologies to account for the exceptions on an ad-hoc basis. Janssens (1975/76, p. 281) mentions the Hebrew alternation but not the Akkadian parallel.

⁶⁰ Cf. “O sister of Aaron!” addressed to Mary (not Miriam) in Quran 19:28 and the many examples of “sister of” found in the searchable databases of the Hadith online.

⁶¹ Cf. the commentary of R. Joseph Bekhor Shor to Exod 15:20: “Then Miriam the prophetess, Aaron’s sister took’ — the way of Scripture is that when it mentions a woman, it mentions her oldest brother, as in ‘Basemath, [daughter of Ishmael and] sister of Nebaioth’ (Gen 36:3) and ‘Elisheba, [daughter of Amminadab and] sister of Nahshon’ (Exod 6:23).”

⁶² The literature on this subject is vast, stretching back to the tenth century (Dunash 1866, p. 49, §141), if not further. In addition to the well-known classics (e.g., Barth 1889, pp. 218–26; Brockelmann 1908–13, vol. 1, pp. 209–17, 371–74; Blake 1911, pp. 217–19), I mention a few recent studies: Talshir 1992; Militarev and Kogan 2000–, vol. 1, cxlii–cxliii, vol. 2, lxxiii–lxxiv; Steiner 2001a; and Lipiński 2001, pp. 186–87, 200–01, 221–22. Brockelmann and Lipiński cite much evidence from modern Semitic languages for the use of prothetic vowels to break up initial con-

been adduced,” adding that “it is not impossible that future research in the historical morphology of the bases in question will reveal such conditions.”

An important contribution of Militarev and Kogan (2000–, vol. 1, p. cxlii) to the solution of this problem is their recognition that, “in a considerable number of roots, *ʔV- can obviously be traced to the proto-level, so that bases with and without prefixed *ʔV- are to be reconstructed as alternative Proto-Semitic variants.” As we shall see below, it is not uncommon for individual Semitic languages to have two variants of a single noun, one with vowel prothesis and one without it.

I would argue that, although the two variants are doublets in some of the Semitic languages, they were not doublets in Proto-Semitic but rather conditioned allomorphs. More precisely, vowel prothesis originally functioned as a syllable-repair process⁶³ necessitated by syncope in the initial syllable of a construct form — except when the resulting cluster could be repaired by a vowel at the end of the preceding word.

The original conditioning of vowel prothesis has not survived unchanged in any of the Semitic languages; however, various traces of it can be occasionally be discerned, as we shall see in the following Proto-Semitic examples:

- (9) ‘finger’: *šiba^cum (absolute) ~ *(i)šba^cu (construct); cf. Militarev and Kogan (2000–, vol. 1, pp. 227–28, no. 256): *šVb^c(-at)- and *ʔV-šba^c-. Reflexes of both forms are widely attested in West Semitic. It is true that only forms with a prothetic vowel are known from East Semitic (Eblaite *iš-ba-um* etc.), but adding Egyptian *ḏb^c* ‘finger’ (Coptic *tēēbe*) to the picture would seem to compensate for this deficiency by pushing *šiba^c- back to Proto-Egypto-Semitic. I disagree with the claim of Militarev and Kogan (2000–, vol. 1, p. 228) that “the underlying protoforms are presumably *šib^c(at)-, *ʔa-šib^c-.” It is true that one occasionally finds prothetic vowels in the Semitic languages even where there is no initial consonant cluster that needs resolving, but, in my opinion, the assumption that such examples are to be reconstructed for Proto-Semitic (Militarev and Kogan 2000–, vol. 1, p. cxlii–cxliii) needs to be reexamined.
- (10) ‘posterior, buttocks’: *šitum (absolute) ~ *(i)štu (construct); cf. Militarev and Kogan (2000–, vol. 1, p. 225–27, no. 255): *šVt- and *ʔi-šVt-. The prothetic vowel of Arabic (*i*)stu(n) exhibits *sandhi* conditioning (see below). The same is true of the Arabic prothetic vowel in the following three examples:
- (11) ‘son’: *binum (absolute) ~ *(i)bnu (construct);⁶⁴ cf. Phoenician ʔbn alongside bn; Arabic (*i*)bnu(n); Mandaic ʔbra (pronounced [ebra]), abra, bra (determined) ~ br, bar (construct).⁶⁵
- (12) ‘name’: *šimum (absolute) ~ *(i)šmu (construct); cf. Old Aramaic ʔšm alongside šm; Mandaic ʔušma, ʔsuma (pronounced [ošma], [ešma]) alongside šuma;⁶⁶ Tur Abdin išm-; Arabic (*i*)smu(n) alongside si/u/amu(n).
- (13) ‘two (masc.)’: *tina:m/nv (absolute) ~ *(i)tna: (construct); cf. Phoenician ʔšnm; Arabic (*i*)tna:(ni).⁶⁷

The last four examples are important because they enable us to recover another piece of the puzzle, another detail of the conditioning for vowel prothesis in Proto-Semitic. All of them exhibit prothetic vowels in Arabic in addition to at least one other Semitic language; we even find doublets in examples 11 (Phoenician and Mandaic) and 12 (Old Aramaic). However, it is only in Arabic that the prothetic vowel (ʔalifu l-waṣl) is known to have a *sandhi* condition, occurring at the beginning of a sentence but not after a word ending in a vowel unless there is an intervening pause.⁶⁸ It seems very likely that something like this Arabic *sandhi* restriction operated in Proto-Semitic — hence the parentheses that I place around the Proto-Semitic prothetic vowel. The Arabic word for “name” (example 12) is of particular importance since it exhibits three major variants, reflecting all three of

sonant clusters resulting from syncope. An intriguing example worth adding here is the Palestinian Arabic toponym *Jebel Usdom* ‘Mt. Sodom.’ The form *Usdom* < *Sḏom* presumably goes back to a time when Palestinian Aramaic allowed words to begin with a consonant cluster but Palestinian Arabic did not.

⁶³ Cf. the much later use of vowel prothesis as a syllable repair process in Semitic loanwords from Greek.

⁶⁴ See also examples 33a and 33b below.

⁶⁵ See Macuch 1965, pp. 14, 227.

⁶⁶ See Drower and Macuch 1963, pp. 454–55; Macuch 1965, p. 21.

⁶⁷ See also examples 34a and 34b below.

⁶⁸ After words ending in a consonant, a linking vowel is inserted. For the details, see Wright 1967, vol. 1, pp. 19–24.

the reconstructed Proto-Semitic variants (albeit with some distributional changes): *simu(n)* < *šimūm (absolute); *ismu(n)* < *išmu (construct, post-pausal/consonantal); and *smu(n)* < *šmu (construct, post-vocalic). If prothetic vowels did not exhibit this *sandhi* condition in most of the daughter languages,⁶⁹ we must attribute that fact to the law of diminishing conditioning.

Evidence for this reconstruction can be adduced from the history of prothesis in Late Latin (Sampson 2010, pp. 72–73):

[W]e can see I-prosthesis as a development which arose in Latin for syllabic reasons [I]t seems likely that I-prosthesis was carried through in a two stage process; first, these sequences were modified in contexts where they were anomalously tautosyllabic, i.e. post-consonantally and post-pausally, and subsequently the restructuring could be generalized to post-vocalic contexts (where the sequences were already heterosyllabic).

Vestiges of the original conditioning (or something close to it) survive in modern Romance. In the Gascon dialect of Bagnères-de-Luchon, the word for ‘thorn,’ derived from Latin *spina*, is *espyó* after a pause or a word ending in a consonant but *spyó* after a word ending in a vowel (Sampson 2010, p. 66). In addition, “other Romance varieties have continued to operate with a sandhi-style prosthesis which typically inserts the prosthetic vowel in just post-consonantal contexts only, e.g. in Piedmontese varieties and, in a more marginal way, standard Italian” (ibid., p. 66).

In most Romance varieties, as in most of the Semitic languages, prothetic vowels do not exhibit this *sandhi* condition. Janda and Joseph (2003, p. 209) have cited this fact as evidence for non-phonetic generalization (= the law of diminishing conditioning):

... in origin, this development was not a word-boundary phenomenon; rather, it was sensitive to sentence-level sandhi conditioning, referred to in German under the rubric of *Satzphonetik*. That is, originally the prothesis was just for initial sC- after a consonant — /...C#_sC... — but not after a vowel. This distribution is still preserved in (prescriptive) standard Italian, where one finds *in iscuola* ‘in school,’ with prothesis, but *la scuola* ‘the school,’ with no prothesis. Thus, it seems that this innovation was, at the outset, a syllable-structure-based development repairing the *per se* unsyllabifiable sequence ...C#sC... (but not ...V#sC..., which required no adjustment). The extension of prothesis to any word-initial sC- cluster, regardless of the preceding sound, must be a later (non-phonetic, non-syllable-structure-driven) generalization.

Three additional Proto-Semitic examples are worthy of consideration:

- (14) ‘arm’: **dīra:um* (absolute) ~ *(i)*dīra:u* (construct); cf. Militarev and Kogan (2000–, vol. 1, p. 62, no. 65): **dVra:ʿ*-. Doublets are attested in two Northwest Semitic languages: *zārōaʿ/ʾāzrōaʿ* in Biblical Hebrew and *dārāʿ/ʾādrāʿ* in Biblical Aramaic. Indeed, one could argue that Hebrew has a reflex of **dīra:u* as well, in *u-zrōaʿ* ‘and the arm of’ (Isa 53:1).⁷⁰ The examples of vowel prothesis considered above go back to Proto-Semitic, and there is no reason to assume that this example is any different.
- (15) ‘armpit’: **šaha:tum* (absolute) ~ *(i)*šha:tu* (construct); cf. Militarev and Kogan (2000–, vol 1, p. 212, no. 240): **šahw/y-at-* and Kogan (2011, p. 217, §6.1.11): **šah(a)y(-at)-*-. The form with prothesis is attested only in Eblaite: *iš-ḥa-tum* ‘flank’ (Conti 1990, p. 159, no. 569). Thus, there is no certainty that it existed in Proto-Semitic. Nevertheless, it is worth citing because Eblaite *iš-ḥa-tum* interchanges with *sa-ḥa-tum* ‘flank’ in copies of the bilingual lexical list (loc. cit.). Unless this variation is purely orthographic, it shows the correlation between prothesis and syncope.

⁶⁹ I say “if” because there is no way of being certain that this is the case. The Arabic *sandhi* condition is, to a large extent, disguised by morphophonemic spelling in unvocalized texts; the

prothetic vowel is usually represented by *ʾalif* even when elided. Hence, we cannot totally rule out the possibility that Old Aramaic *ʾšm* (alongside *šm*) and Hebrew *ʾāzrōaʿ* (alongside *zārōaʿ*) exhibited a similar *sandhi* condition.

⁷⁰ See the discussion of example 36 below.

- (16) ‘thumb, big toe’: **baha:num* (absolute) ~ *(i)*bha:nu* (construct); cf. Militarev and Kogan (2000–, vol. 1, p. 33, no. 34): **bVhā/īn-*, **ᵛV-bhān-*. Both forms are attested in East Semitic and West Semitic. The form without prothesis survives in Eblaite and Hebrew (plur. *bāhono^wṭ*), while the form with prothesis survives in Arabic *ʾibha:mun* and probably in Akkadian *uba:nu* ‘finger, toe.’ Arabic *ʾibha:mun* has several biforms. In addition to *bahi:mun*, there was a form *biha:mun*, which al-Azharī (895–981 C.E.) considered unacceptable (Lane 1863–1877, p. 269, col. b s.v. *ʾibha:mun*). It is possible, although far from certain, that this substandard form goes back to **baha:num*. If so, Arabic once again preserves variants with and without a prothetic vowel,⁷¹ although in this case we are not dealing with *ʾalifu l-waṣl*.

In short, prothetic vowels were used in Proto-Semitic to break up initial consonant clusters resulting from syncope in the construct state. Their connection with the construct state, which has not previously been recognized, may help to explain the fact that “animal names with prefixed *ᵛV-* which is clearly detectable as early as in PS are less in number in comparison to the anatomic terms, among which this element was certainly rather widespread already in the proto-language” (Militarev and Kogan 2000–, vol. 2, p. lxxiii). This distribution follows naturally from the fact that names of body parts occur far more often in the construct state than do names of animals.

Another form worth mentioning in this connection, even though it is not a noun, is the negator *ʾal*, widely attested in West Semitic. A century ago, Blake (1911, pp. 217–18) suggested that it too exhibits prothesis.⁷² Blake noted that Biblical Hebrew/Aramaic, *loʾ/lāʾ* “is regularly authotonic,” whereas *ʾal* “is proclitic, as is indicated by the Maqqeph which joins it to the following word” (ibid., p. 217). Similarly, in Ethiopic “we find it only in the quasi-adverb *ʾalbô* ‘there is not, has not’ and in the negative *ʾakkô*, in both cases without accent” (ibid., p. 218). Blake concludes that proclitic *ʾal* “may have been developed from the authotonic *lâ* as follows. With loss of accent the vowel *â* was shortened and finally disappeared, leaving only *l*, probably pronounced as *l̥*; this vocalic *l* developed a prothetic vowel ...” (ibid., p. 218).

Blake’s characterization of the Tiberian Masorah is reasonably accurate. A search with the *Haketer* program turns up 733 occurrences of (*wā-*)*ʾal* of which 726 are followed by *maq:ep̄*; 4,834 occurrences of (*wā-*)*loʾ* of which 2,061 are followed by *maq:ep̄*; and 78 occurrences of (*wā-*)*lāʾ* of which 25 are followed by *maq:ep̄*. The difference between *ʾal* (99 percent proclitic) and *loʾ/lāʾ* (43 percent/32 percent proclitic) is striking. It is therefore reasonable to assume that the stress contrast between *loʾ ʾtas:iᵛg gābu^wl* (Deut 19:14) and *ʾal-tas:eḡ gābu^wl* (Prov 22:28) is original. But how did it arise? I suggest that prothesis may have arisen in cases where the negator *la:/lāʾ* had a proclitic allomorph *la-* (with a short vowel)⁷³ that underwent syncope when attached to a word that was itself proclitic.⁷⁴

Is *ʾal* comparable to *ʾb-* ‘in’ in Phoenician-Punic and Postbiblical Hebrew, to *ʾab-* ‘in’ in Tigre and *ʾab-* ‘in’ in Tigrinya, and to *ab* ‘in’ and *al* ‘to’ in the modern Samaritan Hebrew reading tradition (Lipiński 2001, p. 470; Steiner 2001a, p. 102)? Blake’s discussion of prothesis is limited to cases involving resonants that became syllabic. However, examples 9 and 10 above seem to show that the presence of an initial resonant was not a necessary condition for prothesis.

7. Syncope Following Syllable-initial Semivowels

Another syllable-repair process, syllabification of semivowels, is illustrated by the following examples:

- (17) ‘hand’: **yadum* (absolute) ~ **idu* (construct); cf. Militarev and Kogan (2000–, vol. 1, pp. 262–63 no. 291): **yad-* and **ʾid-*. Forms that could reflect **i* or **i:* instead of **ya* are attested in Geez (*ʾad*), Modern South Arabian (Jibbali *éd*, Soqotri *ʾed*) and Aramaic.⁷⁵ To the copious evidence

⁷¹ Cf. *si/u/amun* alongside (*i*)*smun* in example 12 above.

⁷² I am indebted to the editors for reminding me of this article; I had internalized the suggestion when I read this article as a graduate student and subsequently forgotten the source. They also called my attention to Lipiński 2001, p. 464.

⁷³ Cf. CAD *la* versus AHW *lā*.

⁷⁴ Since *ʾal* normally precedes the jussive in Hebrew (e.g., *ʾal-tas:eḡ* in the preceding example), one might suggest that transitive jussives were originally proclitic (e.g., **ʾal-tas:eḡ-gābu^wl*). And since the jussive stands in for the imperative following *ʾal*, one could support this suggestion by pointing to the prothetic vowel of the Arabic G-stem imperative, which hints that (transitive) imperatives were proclitic.

that Militarev and Kogan cite from Late and Modern Aramaic, I would add the form *eytyh*.^m = ʔydyh ‘her hands’ in pAmherst 63 (IX/18), alongside many examples without the initial *e* = ʔ (Steiner and Mosak Moshavi 1995, p. 1257).⁷⁶ The construct form *idu* makes excellent phonetic sense: when the initial consonant was a semivowel, no prothetic vowel would have been needed to repair an impermissible cluster resulting from syncope. When semivowels are neither preceded nor followed by a vowel, they undergo syllabicization and function as vowels themselves.

- (18) ‘kidney’: **kvlyatum* (absolute) ~ **kvlitu* (construct); cf. Militarev and Kogan (2000–, vol. 1, p. 141, no. 156): **k^waly-at-*. Forms that could reflect **i* or **i:* instead of **ya* are attested in Akkadian (*kali:tu*), Syriac (*ko(:)li:ta:*), and Geez (*k^walit*). Moreover, in Syriac we find an alternation between **i* and **y* in this word: *ko(:)li:ta:* (singular) ~ *kolya:ta:* (plural).
- (19) ‘afterbirth, fetal membrane’: **švlyatum* (absolute) ~ **švlitu* (construct); cf. Militarev and Kogan (2000–, vol. 1, pp. 216–17, no. 246): **ša/ily-at-*. Forms that could reflect **i* or **i:* instead of **ya* are attested in Akkadian (*sili:tu*, *šeli:tu*, *šali:tu*) and Syriac (*šli:ta:*). Syriac has an alternation between **i* and **y* in this word: *šli:ta:* (singular) ~ *šelya:ta:* (plural).
- (20) ‘gazelle’: **ṭabyatum* (absolute) ~ **ṭabitu* (construct); cf. Militarev and Kogan (2000–, vol. 2, pp. 310–12, no. 242): **ṭaby(-at)-*. Forms that could reflect **i* or **i:* instead of **ya* are attested in Akkadian (*šabi:tu*) and Aramaic (Syriac *ṭbi:ta:* and the New Testament name Ταβ(ε)ῖθα). Syriac has an alternation between **i* and **y* in this word, as well: *ṭbi:ta:* (singular) ~ *ṭabya:ta:* (plural).
- (21) ‘female captives (collective)’: **švbyatum* (absolute) ~ **švbitu* (construct). Reflexes of this word (and/or its masculine counterpart) are widely distributed in West Semitic (Hebrew, Aramaic, Arabic, Epigraphic South Arabian) but are not attested in East Semitic. Thus, there is no certainty that it existed in Proto-Semitic. Nevertheless, it is worth citing because Hebrew preserves both forms as doublets, both with the meaning ‘female captives’: *šibya^h* and *šəḇi^y*. They interchange in virtually identical contexts in Num 21:29 and Jer 48:46.
- (22) ‘town’: **karyatum* (absolute) ~ **karitu* (construct). Reflexes of these forms are attested in West Semitic (Ugaritic, Hebrew, Aramaic, Arabic)⁷⁷ but not in East Semitic. Thus, there is no certainty that it existed in Proto-Semitic. Nevertheless, it is worth citing because forms that could reflect **i* or **i:* instead of **ya* are attested not only in Syriac (*kri:ta:*) but also in Ugaritic (**ka-ri-t[u₄]*).⁷⁸ Syriac has an alternation between **i* and **y* in this word too: *ḳurya:* (singular absolute) ~ *ḳri:ta:* (singular determined).⁷⁹

The last five examples belong to the class of feminine segolates (e.g., **kalbatum* ‘bitch’). Nouns of this class normally did not permit the vowel of the feminine ending to undergo syncope (in the construct state), since that would have yielded a form that could not be divided into acceptable syllables (e.g., ***kalbtu*). In these five

⁷⁵ One is tempted to add Akkadian *idu*; however, Sargonic Akkadian forms like *i-dam* ‘hand’ and *i-da-su* ‘his hands’ are now understood to represent /yidam/ and /yidāsu/ (Hasselbach 2005, pp. 86–87, 271; Militarev and Kogan 2000–, vol. 2, p. 344). (For Eblaite *i-da*, understood to represent /yiday(n)/, see Conti 1990, p. 172 no. 626). Even so, the fact that *i-ti* ‘from’ represents /it:i/ (Hasselbach 2005, p. 272) seems to show that we cannot completely rule out /idam/ and /idāsu/.

⁷⁶ That Demotic *ey* can represent word-initial [ʔi] in this text is clear from its use in the words *eymr^m* = ʔymr ‘a lamb’ (VII/8) and *eynt^r* /y^r = ʔynt(y) /y^r ‘my wife’ (XVI/7), where it represents word-initial [ʔi] or [ʔe].

⁷⁷ It has often been noted that this noun has a variant *ḳart* in West Semitic. Huehnergard (1987, p. 286 n. 86) describes this

variant (attested in Targumic Aramaic, poetic Biblical Hebrew, and Phoenician) as a biform “based on a biradical root.” It is also possible that the triradical root *k-r-y* (meaning ‘cover with a roof’ in Hebrew) had a metathesized biform *k-y-r*, which survives in Moabite *ḳr* ‘city’ and perhaps also in Hebrew *ḳi^yr* ‘wall.’ The Moabite meaning of *ḳi^yr-Mo^wāb* (Isa 15:1) is recognized by Targum Jonathan (“city of Moab”). For the connection between the meanings ‘city’ and ‘wall,’ cf. Greek τεῖχος, which has the meaning ‘walled city’ in addition to the meaning ‘wall.’ The feminine of *ḳir* ‘city’ would be *ḳirt*, with shortening of the long vowel.

⁷⁸ Huehnergard (1987, p. 286 n. 86) derives the latter from a **ḳariy-tu*, but, as he himself notes, this form “deviates from all of these [other Semitic forms of the word for ‘town’].”

⁷⁹ See Sokoloff 2009, p. 1410, col. a bottom.

examples, however, it appears that syncope was allowed thanks to a syllable repair process that made *y* syllabic: *CvCyatu > *CvCytu > CvCitu.

For another example of a semivowel becoming syllabic in Proto-Semitic, see example 36 in §10.

8. Syncope Following Long Consonants

Proto-Semitic *^ʔan₁atum ‘woman, wife’ and *šid₁atum ‘six’ also belonged to the class of feminine segolates; hence, they did not have syncopated construct forms. However, it appears that these absolute forms had assimilated variants already in Proto-Semitic, variants that *did* have syncopated construct forms:

- (23) ‘woman, wife’: *^ʔan₁atum / *^ʔat₁:atum (absolute) ~ **^ʔat₁:tu > *^ʔattu (construct). The alternation survives in Hebrew and Akkadian: ʔiš:ā^h (absolute) ~ ʔéšā₁t (construct); aš:atum (reflex of absolute) ~ ašti (construct). Note also ʔanšat:a ‘women’ in some of the Gurage languages (Masqan, Gogot, and Soddo) versus ʔāšta ‘women’ in others (Čaha, Eža, and Gyeto) (Leslau 1979, vol. 2, pp. 684–85, vol. 3, p. 102).⁸⁰ Should the distribution of these Gurage forms be viewed as another case of dialectal differentiation following analogical leveling, as in example 8 above?
- (24) ‘six’: *šid₁atum / *šit₁:atum (absolute) ~ **šit₁:tu > *šittu (construct). The alternation survives in Hebrew: šiš:ā^h (absolute) ~ šéšā₁t (construct).

In each of these forms, assimilation replaced a sequence of two consonants with one long consonant. This made syncope possible in the feminine ending because Proto-Semitic had a syllable repair process for this case: degemination (loss of consonant length).

The assumption of an assimilated form *^ʔat₁:atum, alongside *^ʔan₁atum, in Proto-Semitic may go against the grain of some Semitists, who are used to attributing such “secondary” forms to the daughter languages. However, as noted above, the principle of cognate anomalies requires that we reconstruct something like *^ʔattu for the construct state, which, in turn, implies the existence of *^ʔat₁:atum in the absolute state. In other words, the agreement between Hebrew ʔiš:ā^h (absolute) ~ ʔéšā₁t (construct) and Akkadian aš:atum (reflex of absolute) ~ ašti (construct) cannot be plausibly explained without positing such protoforms. Moreover, if Proto-Semitic was a natural language, rather than some sort of artificial construct, there is no reason to assume that it did not have such forms, at least in rapid speech.⁸¹ Last but not least, many of the daughter languages have an *n*-less form of this word: Akkadian aš:atum, Ugaritic at₁t, Hebrew ʔiš:ā^h, Phoenician-Punic ʔšt, Lihyanite ʔtt, Qatabanian ʔtt, Sabaic ʔtt (alongside ʔntt), Tigre ʔassit. In my view, we have more than enough evidence to reconstruct *^ʔat₁:atum as a biform or sociolinguistic variant of *^ʔan₁atum in Proto-Semitic. More generally, I would suggest that *n*-assimilation was a variable rule in Proto-Semitic.

This approach is not all that different from that of Sanmartín 1995.⁸² Sanmartín stresses the extreme antiquity of *n*-assimilation: “The first orthographic witnesses to Semitic testify to a total assimilation of syllable-final pre-consonantal /n/; this goes for the Fara and late Presargonic documentation through Ur III down to Old Assyrian and Old Babylonian scribal practice Moreover, in the ‘West’ (Ugarit) too, /n/ was regularly assimilated; possible, apparent exceptions can be explained on purely *orthographic* grounds (avoidance of homography in vowelless orthography)” (ibid., p. 458).⁸³ Sanmartín suggests that the *n*-assimilation rule is conditioned by sociolinguistic factors: “The ubiquitous alternation between /n/-assimilating and /n/-preserving spellings is only one of the signs of a permanently diglossic society in the ancient Orient, which used both a relatively standardized written

⁸⁰ These are cognates of ʔanast ‘woman, wife, female’ in Geez (Leslau 1987, p. 32). For a chart showing the genealogy of the Ethiopian Semitic languages, including the six Gurage languages cited here, see Hetzron 1977, p. 17.

⁸¹ Cf. Bolozky (1977, p. 220): “Since in fast speech a given string must be articulated in a shorter time-span than in normal speech, assimilation of segments to neighboring elements is to be

expected; it makes articulatory transitions easier and smoother, and possibly also requires less time to articulate.”

⁸² I read this article after writing the preceding paragraph.

⁸³ We may now add that the oldest connected Semitic texts, the Northwest Semitic serpent spells in the Pyramid Texts, have a rather clear example of the assimilation of the final *n* of *min* ‘from’ in PT 286 (Steiner 2011, pp. 52, 54–55).

language as well as a spontaneous, informal, ‘vulgar’ variant” (ibid., p. 459). I would add only that, in my view, *n*-assimilation was a variable rule even before the invention of writing.

Degemination following assimilation of *n* seems to be attested as a syllable repair process in Akkadian. According to Soden (1995, p. 43, §33j): “Before a two-consonant cluster in certain *-tan-* forms of the verb, *n* is completely elided, as, e.g., *ittapras* < **ittanpras* ..., since a sequence of three consonants was not permitted.” There is no need to assume that the *n* was immediately elided; it seems more likely that this was a two-step process: assimilation followed by degemination.

Degemination is also found as a repair process for long consonants that are *not* the product of assimilation:

- (25) ‘daughter-in-law, bride’: **kallatum* (absolute) ~ **kaltu* (construct); cf. Kogan (2011, p. 236, §8.4.3): **kall-at-*. The degeminated form is attested only in Eblaite: *gal-tum* ‘daughter-in-law’ (Conti 1990, p. 118, no. 322). Thus, there is no certainty that it existed in Proto-Semitic. Nevertheless, it is worth citing because Eblaite *gal-tum* interchanges with *gal-la-du* and *gal-la-tum* in copies of the bilingual lexical list (loc. cit.). Unless this variation is purely orthographic, it shows the correlation between degemination and syncope. Is *gal-tum* a construct form, comparable Akkadian *ašti*? There is no evidence that it is, but the possibility cannot be excluded.⁸⁴
- (26) ending for feminine singular relational adjectives: **-iy:atum* (absolute) ~ *** -iy:tu* > **-iytu* > **-i:tu* (construct); cf. the Hebrew doublets *moʿāḇiy:ā^h* ~ *moʿāḇiʿt* ‘Moabitess.’

This syllable-repair process can perhaps also be seen in a more common Hebrew alternation between the absolute and construct states: *zik:āro^wn* ~ *zikro^wn*, *šib:āro^wn* ~ *šibro^wn*, *ḥiz:āyo^wn* ~ *ḥazyo^wn*, *hig:āyo^wn* ~ *hāgyo^wn*, *kil:āyo^wn* ~ *kilyo^wn*, *nik:āyo^wn* ~ *niḳyo^wn*, and so on. Now, the Hebrew pattern *CiC:āCo^wn* < **CaC:aCo:n*⁸⁵ is generally believed to postdate Proto-Semitic (Barth 1889, pp. 324–26; Bauer and Leander 1922, p. 498). Be that as it may, this alternation is important because it clearly demonstrates the connection between the construct state and degemination as a repair process for syncope.⁸⁶ My claim is that the use of this repair process for syncope in the construct state is inherited from Proto-Semitic, even if these specific examples of it are not.

9. Syncope Following Long Vowels

Vowel shortening is a syllable-repair process that has much in common with degemination. It can be seen in the following example:

- (27) ‘shame’: **bu:atum* (absolute) ~ ***bu:ttu* > **buttu* (construct); cf. the Hebrew doublets *bu^wšā^h/bóšā^t*.

Unfortunately, this example does not provide conclusive proof that vowel shortening took place already in Proto-Semitic, since the length of the stem vowel in Akkadian *bu(:)štum* ‘shame’ is uncertain,⁸⁷ part of a larger, unresolved controversy (Edzard 1986, p. 361; Knudsen 1986, cols. 728–31). In theory, then, vowel shortening as a syllable-repair process in closed syllables could be a Proto-West-Semitic innovation. However, vowel shortening is a special case of loss of length, which can be reconstructed as a syllable repair process in at least one Proto-Semitic construct form (***a^wt:tu* > **a^wttu* ‘wife of’).⁸⁸ It seems likely, therefore, that Huehnergard (2006, p. 10) is right in claiming that vowel shortening in closed syllables goes back to Proto-Semitic.⁸⁹

⁸⁴ The mimation is no obstacle, since construct forms are sometimes written with (apparently purely orthographic) mimation in the Eblaite bilingual lexical list; see the examples given by Krebernik (1996, p. 235 n. 1) and add /kašri bu‘dim/ ‘the articulation of the shoulder,’ which appears as both *ga-za-rúm bù-tum* and *gi-zi-rí bù-tim* (Conti 1990, p. 153 no. 544). According to Krebernik (1996, p. 235), this is “logographic spelling,” possibly characteristic of “dictionary style.”

⁸⁵ For this pattern, its appearance in transcriptions (ἀρραβών ‘deposit, pledge’; ἀκκαρων, *Am-qar-ru-na*, *Am-qar-u-na*, Egyptian ‘ngrn ‘Ekron’), and its alternation with *CiCCo^wn*, see Hurvitz 1968–

69, supplemented by Koehler, Baumgartner, et al. 1994–2000 s.v. ‘ākro^wn, and by Masson 1967, pp. 30–31.

⁸⁶ Cf. the use of degemination as a (diachronic) repair process for apocope (loss of case endings) in Hebrew and other Semitic languages.

⁸⁷ It is normalized with a short vowel in CAD and a long one in *AHW*.

⁸⁸ See §§4 and 8.

⁸⁹ Cf. the literature cited in Greenstein 1984, pp. 42–43, and add now Steiner 1996, p. 259 n. 10.

In any event, it is clear that Proto-Semitic allowed syncope in the feminine ending following a long vowel. Was the same true in the stem? According to Fox (2003, p. 237), **ka:tilum*, the active participle of the G-stem, is “the only reconstructible pattern with the syllabic structure *C \bar{V} CvC.” If so, our question reduces to the question of whether **ka:tilum* had a construct form **katlu* (with vowel shortening), identical to the construct form of **katilum*. We should not be overly optimistic about the possibility of reconstructing such a form, even if it existed, since it would have been highly vulnerable to analogy. I can think of only one or two segolate nouns in Hebrew that could possibly be viewed as relics of such a form. One of them is *hélāk* ‘traveler’ in 2 Sam 12:4, although this form would seem to be derived from **hilk*.⁹⁰ Another is *rākāb* ‘upper millstone,’ attested in Deut 24:6, Jud 9:53, 2 Sam 11:21, and in a Northwest Semitic text in Egyptian hieratic script from around the early eleventh century B.C.E. (Shisha-Halevy 1978, pp. 146, 157–58).⁹¹ The etymological meaning of this is “rider,” referring to one stone mounted on another. This is a meaning for which the participle would be appropriate, and, indeed, Onkelos uses the Aramaic participle *ra:kāḇa*: to render *rākāb* at Deut 24:6.⁹² Other possible relics of a Proto-Semitic **rakbu* ‘rider’ may be cited from Akkadian,⁹³ Arabic,⁹⁴ and Hebrew.⁹⁵ Thus, a Proto-Semitic alternation **rākibum* (absolute) ~ **rakbu* (construct) is not out of the question.

10. Syncope in Nouns with Two Elidable Vowels

How did the Proto-Semitic syncope rule treat nouns with more than one short open-syllabic vowel? In example 7 above (**‘ašaratum* ~ **‘ašartu* ‘ten’), the last non-final short open-syllabic vowel is deleted, but is that always the case? It is obvious that no definitive answer can be given, but the daughter languages do provide some tantalizing hints. For such nouns, one occasionally finds several different construct forms or several different syncopated forms surviving in a single language as doublets or dialectal variants. In such cases, I would tentatively reconstruct several Proto-Semitic construct forms:

- (28) ‘holy’ (fem.): **ḳadišatum* (absolute) ~ **ḳadištu*/**ḳadšatu* (construct); cf. Akkadian *ḳadištum/ḳaš:atum*.⁹⁶
- (29) ‘queen’: **malikatum* (absolute) ~ **malkatu*/**maliktu* (construct); cf. Hebrew *malkat/mālākāt*.⁹⁷
- (30) ‘man (of high status)’?: **marvum* (absolute) ~ **marvu*/**(i)mrvu* (construct); cf. Arabic *marʿu(n)/(i)mra/uʿu(n)*.⁹⁸
- (31) ‘heavy’: **kabidum* (absolute) ~ **kabdu*/**(i)kbidu* (construct); cf. Hebrew *kāḇed* (absolute) ~ *kāḇād/kāḇād* (construct poetry/prose).

⁹⁰ The expected form is **halk*, but cf. *gézāl* (the construct of *gāzel*) and Arabic forms like *kibdu* < *kabidu* as discussed by Rabin (1951, p. 97).

⁹¹ In this text, we find the phrase *škb-rkb*. Although the context of the latter is obscure, *škb* and *rkb* also occur together in mBaba Batra 2:1 as the words for the lower and upper millstones. The Bible’s failure to mention the *škb* together with the *rkb* is easily explained on the assumption that the former was fixed to the ground; unlike the *rkb*, it could not be taken in pawn (Deut 24:6) or dropped on a besieger’s head (Jud 9:53; 2 Sam 11:21).

⁹² As for the Peshiṭta, there are two traditions: *rakba*: and *ra:kba*: (Sokoloff 2009, p. 1467, col. b).

⁹³ See Soden 1965–81, p. 947, col. b s.v. *rakbu(m)*: “Meldereiter?” (auch Fahrer?? ...).”

⁹⁴ See the discussion of the mass noun *rakbu* ‘riders (on horses and/or camels)’ in Lane 1863–1877, p. 1144, cols. b–c s.v. *ra:kibun*.

⁹⁵ See Brown, Driver, and Briggs 1907, p. 939 s.v. *rākāb* mng. 4.

⁹⁶ The latter form is a dialectal variant, known only from Mari (Greenstein 1984, p. 53).

⁹⁷ Hebrew *mālākāt* ‘queen’ occurs only in the phrase meaning “Queen of Heaven” (five times in Jeremiah), where it is ordinarily emended to *malkat* (McKane 1986–1996, vol. 1, p. 170; Holladay 1986, p. 251; Lundbom 1999, p. 476). The emendation is shown to be unnecessary by comparative Semitic evidence. Hebrew *mālākāt* corresponds perfectly to the form *maliktum* ‘queen’ in Eblaite and the pre-Sargonic native language of Mari (Gelb 1992, p. 148). It is also close to Arabic *malikatun* and to Akkadian *malikatu*, attested as a variant of Ishtar’s title *malkatu* (CAD s.v. *malkatu* B). The Akkadian title of Ishtar is particularly important here because the “Queen of Heaven” in Jeremiah is believed to be Ishtar and because two verses (7:18 and 44:19) refer to cakes made for her using an appropriate Akkadian loanword (*kaw:āniʿm* < Akkadian *kamānu*) that is unattested elsewhere in Hebrew (Holladay 1986, pp. 254–55; Lundbom 1999, pp. 476–77). It is therefore possible that the non-standard form *mālākāt* < **maliktu* is used deliberately, together with the Akkadian loanword, to evoke the foreign goddess.

⁹⁸ For the various vocalizations of the Arabic, see Lane 1863–1877, pp. 2702–03.

- (32) ‘uncircumcised’: **ġarilum* (absolute) ~ **ġarlu*/*(*i*)*ġrilu* (construct); cf. Hebrew ‘*ārel* (absolute) ~ ‘*ārāl*/'*āral* (construct poetry/prose).⁹⁹
- (33a) ‘daughter’: **binatum* (absolute) ~ **binu*/*(*i*)*bnatu* (construct); cf. Arabic *binu(n)*/*(i)**bnatu(n)*, not to mention Phoenician *bn*/*ʾbn*, cited in example 11 above.
- (34a) ‘two (fem.)’: **tinata:m/nv* (absolute) ~ **tinta*/*(*i*)*tnata*: (construct); cf. Arabic *tinta:(ni)*/*(i)**tnata:(ni)* not to mention Phoenician ʾšnm, cited in example 13 above.

In most of these cases, the deletion of one vowel would have sufficed to block the rule from deleting the other, since deletion of both would have created a sequence of three consonants. However, in the last two examples, there seems to have been a third construct form with both vowels deleted. I would conjecture that, in these cases, syllabicization made it possible for both elidable vowels to undergo syncope in the same construct form:

- (33b) ‘daughter’: **binatum* (absolute) ~ *(*i*)*bntu* (construct). In one dialect (or immediate descendant) of Proto-Semitic, the alternation turns into **binatum* (absolute) ~ *(*i*)*bṛtu* (construct). This later alternation is partially preserved in Mehri: *bri:t* (absolute) ~ *bərt* (construct).¹⁰⁰
- (34b) ‘two (fem.)’: **tinata:m/nv* (absolute) ~ *(*i*)*tnta*: (construct). In one dialect (or immediate descendant) of Proto-Semitic, *(*i*)*tnta*: > *(*i*)*tṛta*:, perhaps as a means of blocking assimilation to **(*i*)*tt:a*:; in another dialect (or immediate descendant) of Proto-Semitic, *(*i*)*tnta*: > **(*i*)*tt:a*: > *(*i*)*tta*:.

The reconstruction given in examples 33b and 34b corrects the conjecture I made in Steiner 1982, p. 195:

It is striking that MSA and Aramaic, against all of the other Semitic languages, have an *r* in the words for ‘son,’ ‘daughter,’ and ‘two,’ and when the alternation with *n*¹⁰¹ is taken into account, the similarity becomes astounding. No wonder Christian (1944) was convinced that MSA and Aramaic are closely related! Scholars who reject this view, and that includes just about everyone, must project this alternation back into Proto-(West-)Semitic.

It is worth noting that the two morphemes involved here have something else in common: their Arabic forms, *ibn(at)un* and *itn(at)āni*, have a base consisting of two consonants WITH NO VOWEL IN BETWEEN. A similar form must be reconstructed as the ancestor of the much-discussed Hebrew *štayim* ‘two (f.)’. The latter can hardly be the reflex of **tintaym* since vowels in closed syllables are immune to deletion in Hebrew. It is more reasonable to posit an original **tntaym* or **itntaym*, with a syllabic *n̥*, which yielded *(*i*)*štntayim* and then *(*i*)*štayim*. If so, it is conceivable that *r* alternated with *n* in Proto-(West-)Semitic in positions where a syllabic consonant was called for, e.g., *tntaym* ~ *tṛtaym*, *bntum* ~ *bṛtum*¹⁰²

When I made this conjecture, it did not occur to me to restrict it to the construct state, let alone to suggest that all of the processes posited in my presentation of it — syllabicization, degemination, and prothesis — were employed regularly in Proto-Semitic construct forms as syllable repair processes. The relevance of prothesis here is clear; in addition to the Arabic and Phoenician evidence, we have more than ample testimony from Masoretic treatises and medieval grammars (as well as hints from the Masoretic accents) that the word for ‘two (fem.)’ was read with a prothetic vowel: *i/āštayim* ~ *i/āšte^y* (Neuman 2009, pp. 290–93).

In short, I now suggest that *i/āštayim* ~ *i/āšte^y* be derived as follows: Pre-Proto-Semitic **tinatay* (accusative-genitive construct) > Proto-Semitic *(*i*)*tntay* > **(*i*)*tt:ay* > *(*i*)*ttay* > Hebrew *i/āšte^y* ‘two of.’ The *n* must have become syllabic as the result of a syllable-repair process when the two vowels that flanked it were elided in the construct

⁹⁹ The absence of prothetic vowels for *kābaḏ* and ‘*āral*’ does not preclude a derivation from *(*i*)*kbidu* and *(*i*)*ġrilu*. Hebrew developed a new syllable repair process, *shewa*-epenthesis, that superseded prothesis except with consonant clusters that resisted epenthesis, e.g., *št*.

¹⁰⁰ See the end of §5 above.

¹⁰¹ Both languages have an *n* in the words for “sons,” “daughters,” and “second.”

¹⁰² For a subsequent discussion of this alternation with a somewhat similar conclusion, see Testen 1985, p. 145: “Proto-Semitic **n* becomes *r* when it is the second element of an initial consonant cluster - #*Cn*->#*Cr*-.” (Coincidentally, Dr. Testen took my course, Introduction to Comparative Semitics, at the University of Chicago in the spring of 1981, when I was working on the problem; I am sure that neither of us can recall whether I discussed it in class.)

state. When syllabic *ḡ* assimilated to the *t* of the feminine ending in a dialect (or immediate descendant) of Proto-Semitic, an additional syllable-repair process would have been triggered: degemination. That explains why the *t* of *i/äštey* is not geminated in Hebrew. This suggestion also explains why the ungeminated *t* is not spirantized; Hebrew spirantization is a partial assimilation to an immediately preceding vowel, but, according to my reconstruction, there was no vowel immediately preceding *t* in this form at any point in its development after Pre-Proto-Semitic. It also explains the contrast between *ma^h-š:āne^y* ‘what are the two (masc.)’ (Zech 4:11) and *ma^h-šte^y* ‘what are the two (fem.)’ (Zech 4:12). Only the feminine form blocks the secondary gemination normally found in the consonant following *ma^h-* (in this case, *š*), because only the feminine form never had a vowel following that consonant. The same goes for the even more striking absence of gemination in *mište^ym-‘āšre^h* ‘more than twelve (fem.)’ (Jon 4:11; contrast Jud 16:28, where analogy eliminated the anomaly).

As for the replacement of *n* by *r*, I now believe that it was originally restricted to two feminine construct forms (“two of,” “daughter of”), spreading by analogy to masculine and absolute forms only later, in Aramaic¹⁰³ and Modern South Arabian. It was only in the feminine construct that these two biconsonantal lexemes were in danger of losing their second consonant to assimilation. The replacement of *n* by *r*, a consonant that does not undergo total assimilation, eliminated this danger.

In the preceding two examples, I conjectured that two vowels that flanked a nasal were deleted in the same construct form. There may be a third Proto-Semitic example of this very specific scenario:

- (35) ‘tear(drop)s’: **dima‘a:tum* (absolute) ~ **(i)dḡa‘tu* (construct). Militarev and Kogan (2000–, vol. 1, p. 49 no. 51) correctly reconstruct the singular as **dim‘(-at)-*, with no prothetic vowel.

As explained above, segolate nouns have a syllable structure that blocks syncope in the construct state of the singular (in both the stem and the feminine ending). Segolate plurals, however, are a different story; as already noted, they have a vocalic infix, *-a-*, inserted between the second and third consonants of the stem. This (short) vowel is open-syllabic, and it makes the preceding (short) vowel open-syllabic, as well; it appears that both vowels were elided in our construct form. The plural form with prothesis survives in both East Semitic (Eblaite *ḡ-ti-ma-a-tum*) and West Semitic (Ugaritic *udm‘t*). In Soqotri *‘edm‘a* ‘tear(drop)’ (Leslau 1938, p. 130), the prothesis has spread to the singular.¹⁰⁴ The Eblaite spelling may reflect syllabification as well as prothesis; *ḡ-ti-ma-a-tum* (Conti 1990, p. 183 no. 716) seems to make better sense as a spelling of [idḡa‘tu] than as a spelling of [idma‘a:tu]. The plural form without prothesis survives in both East Semitic (Akkadian *di:ma:tum*) and West Semitic (Syriac *dem‘e*). The Ugaritic alternation *dm‘* [dim‘u] ‘tear’ ~ *udm‘t* [udma‘a:tu] ‘tears’ is very significant; it appears to be another vestige of the link between Proto-Semitic vowel prothesis and syncope.¹⁰⁵

I conclude with another possible case of double syncope made possible by syllabification:

- (36) ‘and two’: **wa-tina:m/nv/*wa-tinaym/nv* (absolute nominative/oblique) ~ **u-tna:/*u-tnay* (construct nominative/oblique); cf. Akkadian *u-še/ina* and Hebrew *u-šne^y*.

The syllabification of *w-* allows the Proto-Semitic construct form of the word for “two” to dispense with its prothetic vowel.¹⁰⁶ This reconstruction explains one of the anomalies of Hebrew morphophonemics, namely, the form adopted by the conjunction **wa-* when it is attached to a word whose first vowel has been reduced to *shewa*. Analogy would predict that the reflex of **wa-* in that environment would be *wi-* (like *li-* for **la-* and *ki-* for **ka-*), and that is indeed what we find in the Babylonian reading tradition (Yeivin 1985, p. 1152). In the Tiberian tradition, however, we find *u-* (with a short vowel) for **wa-*.¹⁰⁷ This reflex of **wa-* is anomalous in another way as

¹⁰³ For a full presentation of the Aramaic data, see Fassberg 2008.

¹⁰⁴ Do the Ethiopian Semitic nouns meaning ‘tear’ (Geez *‘anbā‘*, Tigre *‘ambā‘*, *‘anbā‘*, Tigrinya *nāb‘at*, Amharic, Gurage and Argobba *amba*, Gafat *ambw‘ä*, and Harari *ābi‘*) belong here as well? Leslau (1987, p. 382) connects them with Arabic *naba‘a* ‘gush forth, flow,’ etc., but their similarity to the Soqotri form makes one wonder whether *‘-nb-‘* could be derived from **‘-dm-‘* by metathesis of nasalization. In that case, the related verbs in Geez, Tigre, and Tigrinya meaning ‘shed tears, weep’ would have to be taken as denominatives, comparable to Arabic *dama‘a* ‘shed tears, flow,’ Mehri *ado:ma* ‘to weep, (of tears) to drip from the eyes’ (John-

stone 1987, pp. 71 [misprinted], 618), etc. If Leslau’s list of nouns and verbs is complete, the verb forms are geographically restricted, suggesting that they are younger than the noun forms.

¹⁰⁵ For other examples of vowel prothesis connected with syncope in Ugaritic, see Huehnergard 1987, p. 285.

¹⁰⁶ See example 13 above.

¹⁰⁷ For syllabic *w* in Hebrew, see Steiner 1997, p. 148. The spelling of the conjunction *u-* with *waw* is morphophonemic; there is no *mater lectionis*, and no reason to consider this *ḡ* long (except secondarily, in cases like *וַיִּזְרֹק*). Malone (1993, pp. 142–44) has demonstrated that in medieval Sephardic poetry, the conjunc-

well: it is the only example of a word-initial vowel that is clearly reflected in the biblical vocalization. Like many synchronic anomalies, this one has a simple diachronic explanation. We need only assume that we are dealing with a fossil, another relic of the Proto-Semitic syncope rule. Note that the phonetic conditioning governing the use of the *u*- allomorph of the conjunction has remained more or less unchanged in Hebrew.¹⁰⁸ Nevertheless the allomorph is far more common in Hebrew than it was in Proto-Semitic. In Hebrew, it is common not only with singular construct forms (e.g., *u-kḅod* ‘and the glory of’ and *u-kḅad* ‘and heavy of’), but also with singular absolute forms derived from Proto-Semitic construct forms (e.g., *u-zróa* ‘and an arm,’ also attested with the meaning ‘and the arm of’) and with plural absolute forms (e.g., *u-nhāro*^{wṭ} ‘and rivers’). The increased frequency of the *u*- allomorph is the product of a change in the conditioning of the syncope/reduction rule. In Akkadian *u*-, by contrast, the *u*- allomorph is no longer phonetically conditioned, being used in all environments. This may well be another example of the law of diminishing conditioning.

11. Conclusions

Phonetic conditioning tends to be diminished over time by analogy, through the loss of conditions or the loss of conditioned allomorphs. This “law of diminishing conditioning” makes it possible to reconstruct details of Proto-Semitic phonology from faint traces that have survived in the daughter languages. It enables us to recover a Proto-Semitic vowel syncope rule, together with the syllable-repair processes that allowed it to operate unhindered in unexpected environments.

The syncope rule of Proto-Semitic affected construct forms of nouns and adjectives, because they were unstressed (morphosyntactically proclitic). It deleted at least one short open-syllabic vowel in each construct form as long as the deletion did not create syllables containing an impermissible cluster, namely, two consonants (CC) or a long consonant (C:) or a consonant preceded by length (:C). These syllable constraints did not interfere with the syncope rule as much as one might imagine, thanks to four Proto-Semitic syllable repair processes: (1) prothesis, (2) loss of length in/after consonants (degemination), (3) loss of length in/after vowels (vowel shortening), and (4) syllabification of semivowels and nasals.

The alternations produced by the syncope rule and the syllable-repair processes were subjected to massive analogical leveling in the daughter languages. In Classical Arabic, the construct forms were replaced by absolute forms, the few exceptions being nouns that were typically used in the construct state (e.g., *ibn* and *bint*). As a result, the rule was obliterated, with only a few vestiges surviving. Akkadian and Aramaic preserved the rule but changed its conditioning. Hebrew is the only Semitic language that has preserved a fair number of syncope alternations with their original conditioning, both in the stem (e.g., *kāḅed* ~ *kāḅād*) and in the feminine ending (e.g., *mamlākā^h* ~ *mamlākāt*).

Traces of the repair processes are even harder to find. Repair process (1) is best preserved in Arabic (e.g., *ismu(n)* ~ *smu(n)* / *si/umu(n)*); (4) is best preserved in Syriac (e.g., *ṭbi:ta* ~ *ṭabya:ta*); and (2) can be glimpsed in Hebrew (e.g., *bu^{wšā^h}* / *bóšāt*). In some of the daughter languages, new repair processes have replaced the old ones. Thus, in Hebrew examples of prothesis as a repair process are very rare. Instead, we usually find epenthesis of mobile *shewa* (e.g., *zā^róa* rather than the rare *ʾāz^róa*).

tion *u*- scans as a short vowel. The only exception, he says (*ibid.*, p. 145), is immediately preceding a sequence of two consonants (e.g., *ulšon*), where it scans as long. In my view, this exception is illusory. It is based on the assumption that meter in Sephardic poetry is based on vowel length, whereas, in fact, it is based on syllable weight, with all closed syllables (and most open ones as well!) being heavy. Thus, the form *ulšon* consists of two heavy syllables. It must have had a short vowel in the first syllable,

because long vowels were not permitted in closed unstressed syllables in any period of Hebrew, including the medieval period. For a discussion of the history of vowel length in Hebrew, see Steiner 1997, p. 149; and Steiner 2001b. For the quiescent *shewa* following *u*-, see Yalon 1963.

¹⁰⁸ I am not referring to the use of this allomorph before bilabials, whose dating is unclear.

Abbreviations

- AHw Wolfram von Soden. *Akkadisches Handwörterbuch*. 3 volumes. Wiesbaden: Harrassowitz, 1965–1981.
 CAD A. Leo Oppenheim et al., eds. *The Assyrian Dictionary of the Oriental Institute of Chicago*. Chicago: The Oriental Institute, 1956–2010.

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