

Morphological Principles and Dichotomies of Morphological Principles in Semitic Languages

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The inflection of the quadriliteral roots in the verbal system and non-morphological derivation

The morphology of the verbal system in the Semitic languages is constructed according to trilateral roots. In Hebrew, Arabic and Aramaic (Biblical Aramaic, Syriac) a quadriliteral root – the origin of the fourth radical being irrelevant to our discussion – may produce a verb only in the stems geminating their second radical, primarily the D stem. By breaking up the doubled consonant into two separate ones, quadriliteral root moulds are formed. The quadriliteral root makes use of the four consonantal “slots” for its four radicals.

קלל	(√ק-ל-ל)	=	ק ל ל ל	ישקמנה	(√ש-ל-ם)	=	יש לל מנה
	√כ-ל-כ-ל		כ ל כ ל		√כ-ר-ס-ם		יכ רס מנה
תכזבי	(√כ-ז-ב)	=	תכ זי בי	ויתעלה	(√ע-ל-ה)	=	ויתע לל ה
	√ש-ג-ש-ג		תש גש גי		√מ-ה-מ-ה		ויתמ המ ה

This description is valid also in Arabic¹ and Aramaic² and this principle endures till Modern Syriac of our time (e.g. Urmi) – *taxmuni* || *maxxubi*.

The “price” the language pays for that solution is that the characteristic of the stem does not exist anymore, and the root is unable to convey varied meanings and shades of meanings that can be conveyed by using different stems.

On the other hand, consideration of Akkadian reveals that the inflection of the quadriliteral root is not restricted to the rigid moulds used for the trilateral roots. The trilateral pattern is expanded so as to admit four radicals by adding an additional consonantal slot, and if needed, an additional vowel too:

¹ Wright, §§ I/69–70.

² Biblical Aramaic – ישתכללון || ישתממון; Syriac – Nöldeke, §181.

	<i>ip arras</i>	<i>ippa rras</i>	<i>ušta pris</i>
√š-q-l-l	<i>išqallal</i>	<i>ibbalakkat</i>	<i>uštabal^ukit</i>

The characteristic of the stem (and that of the tense) is conserved.

One may argue that in Akkadian, too, the quadrilateral root follows patterns existing in the inflection of the trilateral verb, when the verb is shaped with the addition of *t* of the secondary stem or of the perfect. This is, indeed, partially true, e.g.

	<i>ušt^apras</i>	<i>ušt^apris</i>
√š-q-l-l	<i>uštaqlal</i>	√b-l-k-t
		<i>uš^balkit</i>

but a careful investigation of the nature of the Akkadian morphology of the verb (as against that of other languages) refutes this argument. The morphology of both Akkadian and other Semitic languages is built on invariable moulds, with which the root is interdigitated; in other words, the phonemes (phonological level) become a word through mediation of a pattern (morphological level). In Akkadian this mechanism is not exclusive; an element (or elements) may be added to a basic pattern by simply being attached to it while solving the phonological problems arising from such an addition. In the verbal system this trait is seen easily; the phonological problem, a consonantal cluster (if existing), is solved, i.e. resolved, by an addition of a vowel, usually *a*.

iprus (+gemination) > *ip(a)rras*

purs-(i/u) (+ Ø) > *purus* ; *pars-(at) (+ Ø)* > *paris*

iprus > *iptaras* > *iptarras* > *iptan(a)rras*

The resemblance of the declination of the quadrilateral roots to that of the *t* stems, stems from the fact that both of them add an additional consonant to the basic pattern, and that the location of the additional consonant (or syllable) in them is after the first radical³, but the resemblance is due to a similar phonological mechanism rather than to an identical pattern. This resemblance ends when the basic pattern is enlarged by both a fourth consonant and *t* or *tan* infix e.g. *ušanablakkat* which has no analogous form in the trilateral verb; it is the phonological mechanism, which is not in need of a rigid morphological pattern, that enables such forms.

³ This location conforms with the location of the additional consonant, which is either *l* or *r*, as the second radical of the quadrilateral verb.

This mechanism accounts for irregularities in the declination of nouns: the feminine of *damq-* or *šeḥr-* is *damq+t* / *šeḥr+t*, > either *damiqtu* / *šeḥertu*, or *damqātu* / *šeḥretu*, as both solutions resolve the cluster of three consonants (*mqt* / *ḥrt*) equally. Similarly, the construct state of *pVrs-* may be either *pVrVs* (*kalbu* > *kalqb-*; *nišku* > *nišik-*) or *pVrsV* (*qištu* > *qišti*); both ways solve the problem equally well; the actual form is built without intervention of a morphological apparatus.

The situation in Ge'ez is like in Akkadian. The declination of the quadriliteral root is not bound by the rigid mould of the trilateral one, and the pattern of the trilateral root is enlarged by an additional consonant or syllable.

ነ ገረ	(<i>na gara</i>)	ለ ብሰ	(<i>la bsa</i>)
ደንገጸ	(<i>dangaša</i>)	ዘንግዐ	(<i>zang'a</i>)
ይ ነግር	(<i>y naggr</i>)	ተ ናገረ	(<i>ta nāgara</i>)
ይደነገጸ	(<i>ydanaggs</i>)	ተሰናሰለ	(<i>tasānāsala</i>)
አ ንገረ	(<i>a ngara</i>)	ያ ነግር	(<i>yā naggr</i>)
አደንገጸ	(<i>adanagša</i>)	ያደነገጸ	(<i>yādanaggs</i>)

In spite of the similarity between Akkadian and Ge'ez in this matter, one has to point out a difference between these two languages – the location of the additional element: while in Akkadian the additional consonant is internal, following the first radical (in terms of the trilateral root),⁴ in Ge'ez it is mostly initial, preceding the patterns of the trilateral verb. This conforms with the location of the stem-formative *t* – also an additional element – which in Akkadian is internal (*parāsum* > *piṛrusum*; *purrusum* > *puṛarrusum*; *šuprusum* > *šuṭaprusum* etc.) and in Ge'ez is initial: ነ/ናገረ > ተነ/ናገረ (*na/āgara* > *ṭana/āgara*) etc.

⁴ The place of the additional radical in Š stem does not constitute a refutation of this statement. The inflection of Š stem with the additional formative *š* preceding the three radicals follows the mould of D stem with the geminated second radical:

<i>u p a r r a s</i>	<i>u p a r r i s</i>	<i>p u r r i s</i>	<i>p u r r u s u m</i>
<i>u š a p r a s</i>	<i>u š a p r i s</i>	<i>š u p r i s</i>	<i>š u p r u s u m</i>
uCaCCaC	uCaCCiC	CuCCiC	CuCCuCum

Thus the place of the additional consonant in Š stem is the slot following the first radical.

In spite of what was said above about Hebrew, Arabic and Aramaic – that they necessarily follow four-slot patterns – they too may abandon the rigid moulds of the triradical verb (although it is fairly infrequent). It happens when the language has no other solution. In Hebrew and Syriac this is the case with the quinqueliterals, where the language has no five-slot patterns (again, the origin of the extra cardinals is irrelevant) : Hebrew – הָמָרָהּ (Thr. 1:20), צָהָבוּ הָבוּ (Hos. 4:18), Syriac – Nöldeke, §182. In Arabic these are the rare cases of quadrilateral roots in the VIIth stem – انفعل – and the (rare in itself) IXth one – افعل . Such verbs are e.g.: أَحْرَجْتُمْ ‘to be gathered’ or أَشْمَخَرَّ ‘to be very high or proud’ (Wright §I/71–72). Such a form, which abandons the rigid moulds of the triradical verb, keeps the stem characteristic.⁵ This is the place to comment on the article of O.D. Gensler, “Reconstructing Quadrilateral Verb Inflection: Ethiopic, Akkadian, Proto-Semitic”⁶. This article argues that the Akkadian-Ethiopic model of the quadrilateral verb is the original one, namely, the one used in Proto-Semitic. I don’t believe that it is possible to reconstruct hard paradigms of a language (even if such a language were in existence) after 5000 years. What the comparative (Semitic) linguist can do and may do, is only to point at principles, and even pointing at principles reveals that those relating to the inflection of the quadrilateral roots in Akkadian and Ge’ez, although similar are not

⁵ The significance of the case of the Arabic inflection of the quadrilateral roots in VIIth stem, أَحْرَجْتُمْ , is marginal to the question of the inflection of the quadrilateral roots; however, it is of interest in relation to another issue in the comparative Semitic Languages, parallelization of N stem with T stems. In the T stems the *t* is either prefixed to the three radicals or inserted after the first one: In Ge’ez and Syriac the *t* is prefixed to the radicals ተነገረ : (*tanagra*), ተፈጸመ : (*tafaṣṣama*), ተናገረ : (*tanāgara*), ተገባረ : (*etqetel*), ተገባረ : (*etqattal*), ተገባረ : (*etqattal*); in Akkadian it follows the first radical, *iptaras* (and see the preceding note). Various ancient Aramaic dialects use different methods (Garr, ch.3 §16a, pp.119–120). Arabic, Ugaritic and Hebrew recognize both methods and use both of them according to some kind of distribution. In Arabic and Ugaritic it is according to the stem: in Arabic the *t* precedes the radicals when it is added to D and L stems (II and III, فَاعَلَ , فَعَّلَ) producing the V and VI ones – تَفَاعَلَ , تَفَعَّلَ ; it is added after the first radical to G stem giving the VIII one (فَاعَلَ > فَاعَلَّ). In Ugaritic the *t* is inserted between the first and second radicals in G and Š stems > Gt and Št; it precedes the three radicals in D stem > tD (Gordon, §9.32). In Hebrew the placement of the *t* is determined by a phonological criterion – usually the *t* precedes the three radicals, unless the first one is a dental one, and then the *t* follows it. The important point is that *t*-stem and stem-*t* never oppose one another, nor do their functions differ from one another; the two methods of adding the formative *t* are not two different systems, but simply two methods serving one and the same system, in which the place of the additional *t* is variable.

The place of the formative *n* of N stem in the conjugation of the quadrilateral roots in Arabic, which is not prefixed but inserted among the root radicals – appearing after the first radical and augmented by the additional one – is possibly a relict going back to a situation in which the place of the formative *n* was variable like that of *t*, and therefore could be also placed, like *t*, after the first radical. On the other hand the few Akkadian words like *tāhāzu* ‘battle’, which is argued to be derived from *’-h-z* Gt (Von Soden, *GAG*, §56 [26a]) hint at the addition of the *t* before the three radicals in this language.

⁶ Gensler.

identical – the placement of the additional radical is different; reconstructing hard paradigms is beyond a linguist's ability.

The morphology of the *verba geminata*

In Hebrew, Arabic and Aramaic the *verba geminata*, besides the option of being inflected according to the method of the strong verb, may have special contracted patterns that join the two identical radicals in one long (doubled, geminated) consonant. The special contracted patterns cannot be traced back to the moulds of the strong verb, although they keep its principles of inflection.

كَتَبَ	(<i>kataba</i>)	הִלְכוּ	(<i>hâl^pkū</i>)	مُهَلَّ	(<i>q^otal</i>)
دَلَّ	(<i>da l la</i>)	תָּמוּ	(<i>tammū</i>)	حَلَّ	(<i>'al</i>)
يَكْتُبُ	(<i>yaktubu</i>)	קִרְבוּ	(<i>qir^obū</i>)	مُهَلِّمٌ	(<i>qā^olīn</i>)
يَدُلُّ	(<i>yadu llu</i>)	סִבּוּ	(<i>so bbū</i>)	حَلِّمٌ	(<i>'ā llīn</i>)
كَاتِبٌ	(<i>kātib^{um}</i>)	יְדֻעִי	(<i>yāda 'ti</i>)		
دَالٌّ	(<i>dā ll^{um}</i>)	סַבּוֹתִי	(<i>sa bbōti</i>)		
أَكْتُبَ	(<i>'aktaba</i>)	נִקְלְמוּ	(<i>nikl^pmū</i>)		
أَدַלَّ	(<i>'adalla</i>)	נָסַבוּ	(<i>nasabbū</i>)		
كَاتَبَ	(<i>kātaba</i>)	הִגְדִּילוּ	(<i>higdīlū</i>)		
مَادَّ	(<i>mā dda</i>)	הֵתָמוּ	(<i>hetammū</i>)		

Such contracted patterns exist neither in Akkadian nor in Ge'ez; The *verba geminata* inflect in these languages exactly like the strong verb. Several forms seem to be contracted ones, e.g. *ikkappū*, *dullā*, **ל** (nadda), but a careful investigation reveals that this impression is wrong, and it is due to orthography rather than to the system of the language. When the third radical of the root – according to the morphology of the strong verb – follows the second one directly, with no intervening vowel, the two identical radicals are joined to one long (i.e. doubled) consonant, but it is the regular inflection of the strong verb:

p-r-s > *ipparsū*

k-p-p > *ikkappū*

א-ן-א > אִנְא (labsa)

י-ד-ד > יִדְדָּ (nadda)

p-r-s > *pursā*

d-l-l > *dullā*

To sum up: The *verba geminata* “follow absolutely the course taken by forms from strong roots”,⁷ and this description holds good for Ge’ez and Akkadian as well.

These dichotomies add two more classificatory criteria, placing Akkadian and Ge’ez on one side, and Arabic, Hebrew and Aramaic on the other.

The Designator of the Imperfect and Compensation for Geminating of the 2nd Radical

I will start with the way Akkadian expresses the present (future). From the morphological point of view the basic tense in Akkadian is the preterite; the present is built by differentiating itself from it. The preferred way is by geminating the second radical – *iprus* > *iparras*, *ippaqid* > *ippagqid* etc. In cases where the opposition cannot be carried out by geminating the second radical (either because it is geminated already, e.g. in D stem, or in the *verba mediae infirmae*, the “hole verbs”, where there is no consonant to be geminated) the present is differentiated from the preterite by either geminating the third radical instead (in the *verba mediae infirmae*): *ikūnū* > *ikūnnū*⁸ or (in D and Š stems and in the *verba mediae infirmae* when the third radical is not followed by a vowel and therefore cannot be geminated) by changing the vowel of the second radical to *a*: *uparris* > *uparras*, *ušapris* > *ušapras*, *ikūn*, *takūn* > *ikān*, *takān*. The two alternatives may be used in the conjugation of the same verb: *ikūnnū*,⁸ *takūnnā*,⁸ – *ikān*, *takān*, *nikān*.⁹

The two alternative ways of expressing the present in Akkadian demonstrate the two principles of compensation for gemination of the second radical – 1) doubling the 3rd radical instead, and 2) changing a vowel. These two principles are used in other branches of the Semitic family of languages.

The first principle, i.e., doubling the 3rd radical, is used in the Hebrew verbal system. The *verba mediae infirmae* in D stem(s) (פָּעַל, *Pi’el* [and פָּעַל, *Pu’al*]) and tD stem (הִתְפַּעַל, *Hitpa’el*) – the ‘geminated’ ones – do not geminate their second radical but double the 3rd one by use of an independent radical: √ק-ו-ם > קוּמְמוּ, קוּמְמוּ, √ש-ו-ב > שׁוּבְבוּ, שׁוּבְבוּ, √ע-ו-ר > עוּרְרוּ, עוּרְרוּ, √ק-ו-ב > קוּבְבוּ, קוּבְבוּ, √ק-ו-ב > קוּבְבוּ, קוּבְבוּ etc.

⁷ Dillmann, §67(a) p.126.

⁸ For the justification of the long vowel (against all the grammars) see my article Gai, Akk., the first paragraph: “Doubled Consonant (or Two Consonants) following a long vowel” pp.73–74.

⁹ The last lines are a succinct summary of a chapter in my article Gai, Semitic., Ch.3 “The Morphology of the Akkadian Present”, pp.3–4.

The second principle – changing the vowel – is used in the verbal system of Ge‘ez. In this language the imperfect (= present, future) is built, like in Akkadian, by geminating the second radical as against the subjunctive that has a simple one:

<u>perfect (preterite)</u>	<u>subjunctive</u>	<u>imperfect</u>
ነገረ: (nagara)	ይንግር: (yngr)	ይነግረ: (ynaggr)
አንገረ: ('angara)	ያንግር: (yāngr)	ያነግር: (yānaggr)
አስተናገረ: ('astanāgara)	ያስተናግር: (yāstanāgr)	ያስተናግር: (yastanāggr)

In the II stems, the ‘geminated’ ones, where the second radical is geminated already, the imperfect differentiates itself from the subjunctive by changing the vowel, but, unlike in Akkadian, it is the one preceding the second radical rather than the one following:

<u>perfect</u>	<u>subjunctive</u>	<u>imperfect</u>
ፈጸመ: (faṣṣama)	ያፈጽም: (yfaṣṣm)	ያፈጽም: (yḫṣṣm)
አፈጸመ: ('afaṣṣama)	ያፈጽም: (yāfaṣṣm)	ያፈጽም: (yāḫṣṣm)
ተፈጸመ: (tafaṣṣama)	ያተፈጽም: (yṫfaṣṣam)	ያተፈጽም: (yṫḫṣṣam)

The way Akkadian builds the present, by the present differentiating itself from the preterite, is the key for the explanation of an historical question – the origin of the similarity between Akkadian and Ge‘ez in geminating the second radical of the root in the present (imperfect) tense as against the other Semitic languages, or in other words, why did the west Semitic languages lose the gemination of the second radical in the future tense, and why did Ge‘ez keep it?

Before answering this question one should recall the function of the preterite (past) in the Semitic languages: the tense conveying the past is the very tense conveying the optative¹⁰. The answer to the question emerges from combining the principle of building the present in Akkadian by the present differentiating itself from the preterite mainly by gemination, and the function of the preterite as that conveying the optative. The Akkadian preterite, *iprus*, a prefixal conjugation, was replaced in the western Semitic languages by a suffixal one (שמרת, שמרת, שמרת, כִּתְּבָה, כִּתְּבָה etc.), and the old *iprus* more or less disappeared. Consequently the present tense remained the only prefixal tense in the verbal system and had no conjugation to differentiate itself from. Therefore there was no reason for the gemination of the present

¹⁰ This statement is based on my article Gai, Past-Optative.

conjugation and it vanished, no problem – no solution. Ge'ez, on the other hand, although it underwent the same process, kept on using the old *iprus* but only in the function of the optative (subjunctive): **ḪḪḪC**: (*yngr*) – “let him say, speak”. Thus, the present (imperfect) conjugation in Ge'ez went on having a prefixal conjugation to be differentiated from, and it solved the same problem by the same solution – gemination of the second radical.

The Case of the Construct State

This principle is not purely morphological but rather syntactical – two opposite approaches to the indication of the case of the construct state. Arabic indicates clearly and fully the case of the construct state (بَيْتُ الْمَلِكِ – ‘the house of the king’). On the other hand Akkadian and Ge'ez neutralize it; but while Akkadian does this by omitting the case vowel in all three cases (*bū[ø] šarrim* – ‘the house of the king’), Ge'ez neutralizes it by an unchanged *a* at the end of the noun in that status, no matter what its case is (בֵּית־אֱלֹהִים: **ḪḪḪ** – (*bētā ngūs*) – ‘the house of the king’).¹¹

Hebrew and the Canaanite dialects do not have case endings in the construct state, and the evidence from early Hebrew is that this language did not have such endings even in the period it had case endings in general.¹² The general opinion, almost taken for granted, is that these endings dropped in a very early period.¹³ The arguments given for case endings in very early Hebrew and Canaanite dialects are 1) A ‘binding’ vowel preceding possessive nominal suffixes: מְצִיאוֹת תְּנוּעָה מִקְשֶׁרֶת לְפָנָי “... the existence of a ‘binding’ vowel preceding possessive nominal suffixes (as against its absence in pf.3.f, that always ended in a consonant)” (Blau, Philippi, note 11). 2) Proper names like מְתוֹשֶׁלַח, פְּנוּאֵל, and collocations like בְּנֵי אֲתוֹנֵי – “the son of his she-ass” (Gn.49:11), מְלֵאֲתֵי מִשְׁפָּט – “filled with justice” (Is. 1:21), רַבְּתֵי עָם – “full of people” (La. 1:1) etc. (Gesenius §90 *k-l*). 3) Ugaritic nouns in the construct state with ‘ followed by a vowel¹⁴.

However, these arguments are not reliable, as 1) A ‘binding’ vowel preceding possessive nominal suffixes appears when the *nomen rectum* is a pronoun, not a regular noun, and such ‘binding’ vowels indicating the case in nouns with possessive

¹¹ For a possible exercising of the Ethiopic way of indicating the construct state in Akkadian, see my article Gai, Semitic., Ch. 5 “*a(m)* as a Marker of Construct State in Akkadian”. pp.5–7.

¹² Harris, ch.4, §41 “Dropping of case endings in the construct state”, pp. 41–42. For early Hebrew this situation is deduced already from the Šērē of the construct state as opposed to Segol of the absolute state in nouns of *verba ultimae infirmae* e.g. רוּעָה-רוּעָה, קָנָה-קָנָה; see Blau, Segol, §3 pp.95–96.

¹³ E.g. these two writers: Harris, ch.4, §41, pp. 41–42, and Blau in several works: Blau, Philippi, passim; Blau, Accent, passim; Blau, Theorie, §4 (at the beginning, p.27). An opposite opinion: Bauer-Leander, §65c.

¹⁴ Harris, ch.4, §41, pp. 41–42.

suffixes are found in Akkadian and Ge'ez as well.¹⁵ 2) The vowels argued to be survivals of old cases in the proper names and collocations like *קְהוּשָׁלַח*, *בְּנֵי בְּנוּאֵל*, *מִתּוֹשָׁלַח*, *אֲרָנִי מִלְאֲחֵי מִשְׁפָּט*, *אֲרָנִי* etc. do not change and do not necessarily agree with their syntactic position. 3) The Ugaritic orthography has no device to indicate ' without a vowel. The assumption that the absence of case endings in the construct state is due to their dropping off, and the tendency to look for relicts seem to stem from taking for granted that the Arabic model is the original one. But the existence of another model, the Akkadian-Ethiopic one, should call for reconsideration the assumption that the Arabic model is the original one. Hebrew and other Canaanite dialects evince a strong similarity to Akkadian; Ge'ez supports the notion that the situation in Akkadian is not a 'caprice' of the language but obeys a general principle. All these suggest that in the Canaanite dialects the vowels of the case ending of the construct state did not drop but were never there.

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¹⁵ Von Soden, *GAG* §65 and Nominal Paradigm no. 3; Dillmann, §154(b).

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Abstract

1. The inflection of the quadriliteral verbs in Hebrew, Arabic and Aramaic follows the moulds of the geminated patterns (mainly D stem) making use of the four consonantal ‘slots’ for the four radicals, as these languages are familiar only with the usual way of inflection in the Semitic languages, namely the morphological one. On the other hand, Akkadian, as well as Ge‘ez, which can use also a non-morphological way of inflection, may simply add a fourth radical (and if needed also an additional vowel), keeping the characteristics of the stem.

2. In Hebrew, Arabic and Aramaic the *verba geminata* may be inflected in special contracted patterns that join the two identical radicals into one long consonant. The special contracted patterns cannot be traced back to moulds of the strong verb. On the other hand in Akkadian and Ge‘ez the *verba geminata* follow absolutely the course taken by forms from strong roots.

3. The designator of the present in Akkadian supplies a complete example of compensation for geminating the 2nd radical: either geminating the third radical or changing a vowel. These two ways are used in other branches of the Semitic family: The first way is seen in the inflection of the *verba mediae infirmae* in D stem(s) in Hebrew – יקומם, קשורב, קשורב, קשורב. The second one is seen in the II stems of Ge‘ez.

4. As both Akkadian and Ge‘ez neutralize the case of the construct state (Akkadian by Ø, Ge‘ez *a*), one may adduce a model of the construction inflection (different from that known in Arabic). Such a model hints that the case vowel is lacking in Canaanite and ancient Hebrew not because it was dropped, but because it was never there in the first place.