

Nominal Vowel Alternation and Apophony in Ugaritic, some Afterthoughts, and a Bibliography on Internal Plural

Gregorio del Olmo Lete – Universitat de Barcelona (IPOA)
Gran Via de les Corts Catalanes, 585 – 08007 Barcelona

[The Ugaritic lexicography provides a large series of allophonies some of them as mere phonetic alternances of the same lexeme and others as a result of a derivation process. In the latter case the allophony becomes apophony and it is particularly significant when it seems to hint at a complementary distribution of singular/plural forms thus insinuating the use of apophonic variant as the so called internal or broken plural. In this paper all the lexical items which may hint at this use in Ugaritic are gathered as witness of the retention of a common afroasiatic morph and at the same time the initial drive which be carried out in South-Semitic.]

Keywords: vocalic allophony, apophony, external expansion, internal/broken plural.

1. *The theoretical issue*

Some years ago at *The 13th Italian Meeting of Afro-Asiatic Linguistics (Udine 21th-24th May 2007)* I delivered a paper dealing with the original/genetic binary allophony/apophony of primary Semitic bases, founded on Diakonoff's theory of the primary vocalic dual modulation of the Semitic lexicon (/a::ə=u:i/).¹ Along with this basic (morphemic) apophony, the paper also considered the secondary conditioned vocalic alternation/variation (phonetic) or different productions of the same base in the different languages. In fact the vocalic alternation is a general phenomenon at work in all language in keeping with their own tonal modulation scores. In turn apophony underlines the flective process that characterises a large linguistic family or more exactly linguistic type, into which the Semitic family belongs.² It is in fact a process of economy imposed by the limited possibilities of articulation and modulation possibilities available in any language.

One of the morphological phenotypes in which this mechanism operates is known as the “internal plural”, which was so significant in the South-Eastern branch of the Semitic Languages. It is called

1. See G. del Olmo Lete, “Phonetic Distribution in Semitic Binary Articulation Bases”, in Fr.M. Fales, G.Fr. Grassi, eds, *CAMSEMUD 2007. Proceedings of the 13th Italian Meeting of Afro-Asiatic Linguistics Held at Udine, May 21th -24th, 2007*, Padova 2010, pp. 79-86.

2. See G. del Olmo Lete, “The Fundamental Problems of Comparative Linguistics. A forgotten Spanish contribution from the early 20th Century”, *Aula Orientalis* 23, 2005, 259ff., commenting on A. Amor Ruibal's work: *Los problemas fundamentales de la filología comparada. Su historia, su naturaleza y sus diversas relaciones científicas*, Madrid/Barcelona/Leipzig 1904-1905 (repr. 2005).

“internal” (better than “broken”(!), in my opinion) because it shows, in many cases as its only differentiating element, an apophonic allophony in the distribution of the vocalic modulation of the nominal pattern. In some cases this morpheme comes together with an extension by affixation/ infixation/ suffixation of the basic pattern. It is commonly believed that the “regular or external plural” operates only with the expansion mechanism (-*ūma*, -*ātu*); in contrast, in dealing with the “internal” plural we have to take into account both morphemes: vocalic/phonological apophony, and consonantal expansion. Actually the “external” regular plural also implies an apophonic alternance in relation to the singular template: the lengthening of the final vowel. In this case, the apophony supposes a quantitative vocalic alternance: -*u* # -*ū*(*ma*), -*at*(*u*) # -*āt*(*u*), but it is vocalic alternance / apophony nonetheless, similar to that found in some patterns of the “internal plural”,³ the difference pending only on the “spot” of the template where the apophony occurs. So it could be said that the external plural apophony is “quantitative-flective” (-*u*-*i*-*a* // -*ū*-*ī*), while the apophony of the internal plural is “qualitative-basic” (sometimes quantitative as well). In the long run however this means that the regular/external and the internal/broken plural operate with the same morphological devices that coexisted from the very beginning of the verifiable Semitic morphology.

As stated, apophony, qualitative (timbre) and quantitative (length) as well, is typical of the verbal system as a phonological phenomenon on which the organisation of the system depends,⁴ along with the prefixation, infixation and suffixation expansion patterns. Here, then, we also have the two morphs mentioned. This is a morphemic shaping that is common to the whole Semitic family without exception, even in its basic expansion patterns of personal and modal configuration, so it must be considered as proto-Semitic in its basic structure. Some authors also hold that this is the case of the internal plural, which they take as proto-Semitic, may be even of Afro-Asiatic ascendance, which was preserved in the South-Eastern Semitic branch and died out in the rest. For others this morph represents an innovation in Southern-Semitic.⁵

The guide to the development of this morph will inevitably be the series of patterns provided by Arabic Grammar where this phenomenon is so apparent and well subsystematised in its apophonic (vocalic) as well as expansive (pre-, inf- and suffixed consonantal expansions) forms, the OSA evidence is inferior in this regard due to the lack of vocalization, although it represents an older stage.

2. The simply phonetic ally conditioned allophony in Ugaritic

As in any other language, in Ugaritic we also find allophones as variant realisations of consonants of the same or similar articulation point. But the variation or allophony was probably also present even more abundantly in the vocalic modulation. This aspect, however, is hidden behind the purely consonantal notation of this language. Only the bases with /ʔ/ in any of their positions allow us to ascertain this

3. See in this regard and in general the fundamental work by J. Kuryłowicz, *L'apophonie en sémitique*, Wrocław /Warszawa /Kraków 1961, 36ff.; F. Corriente, *Problemática de la pluralidad en semítico. El plural fracto*, Madrid 1971, p. 84. To trace the possible presence of this morph in Ugaritic we will compile the sg./pl. forms of the lexemes quoted below.

4. See Kuryłowicz, *op. cit.*, 48ff. (“Les systèmes verbaux sémitique commun et akkadien”), 67ff. (“L'évolution du système verbal en ouestique”).

5. See in this regard the good synthesis by Corriente, *op. cit.*, pp. 55ff. (“Descripción diacrónica y génesis del plural fracto”); and the classic records by W. Wright, *A Grammar of the Arabic Language*, vol. I, Cambridge 1967³, pp. 199-234 (“the more common forms”); and A. Murtonen, *Broken Plurals. Origin and Development*, Leiden 1964, pp. 1-14 (“Statistical analysis of single types”); also P. Stein, *Untersuchungen zur Phonologie und Morphologie des Sabäischen*, Rahden (Westf.) 2003 (“Die Stammformen des gebrochene Plurals”, pp. 74--81).

phenomenon. But even in this case the apparently uncertain form of vowel notation of syllables with closing alif makes it difficult to draw reliable conclusions in this regard.⁶

There is nevertheless a category of lexemes in which the allophony is clear and abundantly witnessed, at the same time leaving no doubt about the reason for this variation. This category is PNN with first /ʔ/.⁷ It presents three allophonies (â/i; i/û; â/û) with a clear prevalence of the /â:i/ alternance (+/- 28), the other two coming far behind: /i:û/ (+/- 7), /â:û/ (+/- 11).⁸ In turn the syllabic normalization infallibly transcribes /a-/; only three times do we have /i-/ (*i-ru-na*, ^d*iš-ḥa-ra*, *iš-te-lu*) and twice /û-/ (*ú-ru-mi-ya*, *ur-te-nu*).

Allophony â:i	Allophony i:û	Allophony â:û	Syll. normalization
	i:ûbln		<i>ia-ab-lu-nu</i>
â:ibm			<i>a-bu-ú-mu /a-bi-ma</i>
â:ibn		â:ûbn	<i>a-ba-ni/ab-ba:bá-na</i>
		â:ûbny(n)	
â:ibrm			<i>a-bi-ra-mi</i>
â:iby	i:ûby		<i>a-ba/be/bi-ya/a-bu-ia/ab-bi-ya</i>
	i:ûbyn		<i>a-bi-ia-nu</i>
â:igy(n)			<i>a-ga-ia/a-gu-ya/a-gi-ia-na</i>
â:iḡlkḏ:z			cf. Hurr-Ak. â:iḡl ⁹ , <i>eḫelena</i>
â:iḡlyn			<i>a-ḫal-ia-un</i>
â:iḡl			
â:iḡmlk			<i>a-ḫi-LUGAL</i> , ŠEŠ.LUGAL
â:iḡmn			<i>a/i-ḫi-ma-nu/ŠEŠ-mu/a-nu</i>
â:iḡn		â:ûḡn	<i>a-ḫu-nu</i>
â:iḡqm			Em. ² <i>Aḫu-qâmu</i>
â:iḡršp			
â:iḡy(n)			<i>a-ḫi-ia/e:i-ḫé/ḫi-ia-nu</i> , EŠ- <i>ia-nu</i>
		â:ûll (TN)	URU <i>a-lu-ul-la/li</i>
	i:ûmlk (?)		DINGIR- <i>mil-ku</i> /DINGIR.LIM- <i>mu-lik</i> /DINGIR- <i>mu-lik</i>
	i:ûln (?)		AN- <i>ni/ú-la-nu</i>
â:ilz (?)			<i>al-la-zi/a-la-an-zu</i>

6. See J. Sanmartín Ascaso, “Notizen zur ugaritischen Orthographie”, *UF* 3, 1971, 173-180; J. Tropper, “Silbenschiessendes aleph im Ugaritischen - Ein neuer Versuch”, *UF* 22, 1990, 359-369; for a survey and critique of the different opinions see id., *Ugaritische Grammatik* (AOAT 273), Münster 2012, pp. 33-39.

7. Some times the alternance appears between P(ersonal)N and T(opographical) or G(entilic)N. We will not take into account those cases, which may imply secondary variations.

8. For the quoted PNN see always DUL a.v. (G. del Olmo Lete, J. Sanmartín. *A Dictionary of the Ugaritic Language in the Alphabetic Tradition* (HdO 1/67), Leiden/Boston 2004²), where the comparative material is documented. Some common names present also this kind of vocalic alternance without apparent semantic variation: *â:irḡn* (/ʔ plus velar group r+ḡ/, furthermore likely a Akk. loanword), *û:itml* (intermediate timber: see Hb. ²*etmōl*, Akk. (*it*)*timali*, Eth. *tāmālem*, istnm/úštnm, according to the unpublished text RIH 83/2:17 (see P. Bordreuil, “Variations vocaliques et notations sporadiques du génitif dans les textes alphabétiques de l’Ougarit”, *SEL* 5, 1988, 26.

9. KTU 2.62:11; but the reading may be wrong; see (2014), a. l.

	â:ûnn	<i>a-na-ni:a</i>
â/inšr(m)		
	âp:ûp (TN)	URU <i>ap-pí/</i> Akk./Eg. (?) ² <i>Apum /</i> ² <i>Opu /</i> <i>Upi</i> Cf. <i>âûpš/t</i>
â:ipt		
â:/irbn		
â:irm	â:ûrm	
	â:ûrmy	<i>ú-ru-mì-ya</i>
â:irn	â:ûrn	DUMU <i>i-ru-na</i>
â:irt		
	â:ûrtn	<i>ú-ri-te/ar-te-nu/ar-ta-na/ur-te-nu</i>
â:iry(n)	â:ûryn (?)	<i>a-ri-ya</i>
	â:ûrz	
	<i>i:ûšhry</i>	^d <i>iš-ḥa-ra</i>
â:itn		<i>at-ta-nu/it-ta-na[</i>
â:ittl		<i>iš-te-lu</i>

Some remarks are in order with regard to these alternances. First of all the vast majority of examples of alternance /â:i/ and some of /â:û/ correspond to bases in which the opening glottal stop /ʔ/ is followed by a velar phoneme (/ḥ/, /g/) or by the dental-rolled /r/. Now, in Semitic grammar the effect these articulatory phonemes exert on the neighbouring vowels is well known, above all when they take the position of syllable closing phoneme. When in the position of syllable opening phoneme, phonetic assimilation/dissimilation of the type /âḥ-a-, iḥ-i-, ûḥ-u-/ must be taken into account (see later). On the other hand the existence in the spoken language of intermediate phonemes of the type /a:i=e, ə/, /i:u=û/, for which the writing device (alphabet) has no corresponding sign, may be hidden beneath these alternances. Finally this phenomenon may have been stressed by the foreign character of most of those PNN, whose transcription in Ugaritic was not clear at all.¹⁰

In any case we are dealing with a simple phonetic phenomenon of vocalic variation, without any semantic or morphemic bearing whatever. Furthermore we cannot suggest a scribal error, because there is no significant similarity between the alif signs, above all between /â/ and /û:i. On the one hand, phonetically they correspond to the three well known modulation degrees that make up the inflectional Semitic System; on the other, they occupy an open syllabic position which provides the actual modulation degree and rules out the use of a simple graphic convention as can be proposed in the case of the closing syllable position (see later). One might nevertheless presume nevertheless that the primitive strict consonantal system persisted in Ugarit, recognising only the /â/ sign (at the head of the alphabet) for the three possible vocalic modulation of the alif/hamza, like any other consonant, along with the innovation with signs for /i/ and /û/ (attached at the end of the alphabet), which set aside the /â/ only for /a/ vocalic modulation. In this case the actual pronunciation would be that represented by the signs /ʔi:u/, which nevertheless would not be the case according to syllabic transcription.

This phonetic alternance can also be found in extended lexemes of first radical /ʔ/, which consequently appears in second position in the extended consonantal pattern:

10. See J. Keetman, “Wechselwirkung von Vokalen und Gutturalen im Semitischen unter dem Einfluss anderen Sprachen”, *JSS* 59/1, 2009, 1-17.

TN /mâ:ihd/, GN /mâ:ihdy [syll. *ma-ḥa-di-yu*]/, /mâ:išmn/.¹¹

In this case the the alif sign occupies a closing syllable position with mere consonantal value; the first two are attached to a velar phoneme and the third is an Akk. loanword (*mišmunnu*).

3. Assimilative or allographic variation in roots /Iʔ/ and /IIʔ/

Ug. āb (* ² āb(b)-), ¹² “father”	/īb- (* ² īb(bʔ)-), “father”
sg.-abs.	sg. abs.
<i>passim</i>	<i>ilib</i> ((in lists: KTU 1.47:2; 1.118:1)

The second appears only in comp. names, of which *ilib* is the most significant; no pl. form is extant. The allophony has a clear assimilative origin (total progressive assimilation).¹³

Ug. āḥ (* ² āḥ-), “brother”	ih̄ // ūḥ (* ² i:uḥ-), “brother”
sg. abs., abs. pl. <i>āḥm</i> (* ² āḥūma)	sg./pl. only with pn. suff.,
sg. <i>passim</i>	for the different instances of <i>āḥ-</i> , <i>ih̄-</i> , <i>ūḥ-</i>
<i>šbʔ āḥm</i> (KTU 1.14 I 9)	(-y, -k, -h, see DUL a.v.)

Allophony by contiguous progressive inflectional assimilation: case ending *-u*, *-i*, *-a*. These allophonies are only present in prose, not in literary texts.

Ug. āl (* ² āl-), “ram”	ilm (* ² il-), “ram(s)”
du. <i>ālm</i> , abs.	pl. abs.
<i>trmt ālm</i> (KTU 1.82:8)	<i>mri ilm</i> (KTU 1.22 I 13)

The interpretation of both texts is rather hypothetical because of their broken context, and in any case the documentation is rather limited. We have to take into account the actual lexical “root” of this Ug. lexeme: /ʔyl/, according to Heb. ²*ayl*, and its regular contraction in Ug. /*²ēlu/, of which the alternance *āl/īl* is a witness. In this regard see also the alternance between central Akk. *ālu* and peripheral Em.Akk. *e-lu*¹⁴. Most probably this is another case of inflectional assimilative allography of an intermediate phoneme: du. nom. *²ala-mu, pl.gen. *²ilīm.

Ug. ār (* ² ār-), “light”	ir (* ² ir-), “light”
<i>ār</i> , sg. abs./constr.	sg. abs. oblq. in the syntagm <i>bir</i> (* ² bi- ² iri)
<i>bt ār</i> /1.3 III 6), <i>ār yrḥ</i> (KTU 1.24:38)	<i>lbšt b ir</i> (KTU 1.13:25) ¹⁵

11. In the alternance /mi:ūd # mù:īd/ there may be a scribal mistake; see Akk. *ma²d-/mu²d-*, Heb. *m^{e2}ôd*; see *infra* *mī:ūd*.

12. See G. Del Olmo Lete, “The Biconsonantal Semitic Lexicon 1. The Series /ʔ-X-ʔ”, *Aula Orientalis* 22, 2004, 37f.

13. See S. Moscati, ed., *An Introduction to the Comparative Grammar of the Semitic Languages. Phonology and Morphology*, (PLO NS 6). Wiesbaden 1964, pp. 5ff. The homograph *ib*, “enemy” comes from a different lexical base (< /ʔyb/); see Del Olmo Lete, *art. cit.*, p. 43. Similarly the pairs *āhbt/ihbt*, *ānš/inš*, *ānšt/inšt*, etc. are not actual alternances; they derive from different lexical bases. Examples of the different nom. forms (abs., constr., sg., pl.) are provided.

14. See DUL a.v.

15. For other interpretations of the text see DUL a.v.

Allophony by reciprocal assimilative process. No pl. certified for both forms.

Ug. ʾrgmn (*ʾargamān-), “tribute, offering” **irgmn** (*ʾirgamānu), “tribute(s)”
 sg./ pl. abs., constr. sg./pl. (?) abs.
ʾrgmn d ybl (KTU 3.1:18)
spr ʾrgmnm (KTU 4.369:1), unlikely
 encl. -m
spr ʾrgmn špš gen. (KTU 4.610 I 1), ambiguous *spr irgmn* (KTU 4.181:1)

The clearly attested pl. extended form invites us to take *ʾ:irgmn* as a new case of conditioned vocalic alternance (/ʾ + r/; may be a foreign word with intermediate /a-i/ timbre), like the ones found in the group of PNN dealt with previously. It is nevertheless suspicious that the lexeme almost always occurs in clear pl. context, so we may have here the use of the sg. with a collective pl. sense.

Ug. mīd (*miʾd-), “abundance, plenty” **mūd** (*muʾd-), “abundance, plenty”
 sg. abs. (and adv. use)/constr. sg. constr.
ʾz mīd (KTU 2.10:13), *mīd ksp* (1.4 V 15)
mūd šin (KTU 1.5 III 23).

No pl. form is attested, as *mīdm šlm* in KTU 2.39:3 is a construction with encl. -m; see *mīd šlm* elsewhere.¹⁶ Most likely this is an allography of the same lexeme of pattern /qī:utl-/ according the uncertain vocalisation of the closing alef. We should also consider the possible original alternative modulation /i:u = e/ according the original Semitic vocalic modulation proposed by Diakonoff, as pointed out above.¹⁷ In a literary context (KTU 1.14 II 35) the lexeme *mād* is taken as the basic verbal form (see *infra ill/ûl*), but it could also be the actual nominal form of which *mī:ūd* would just be a graphic variant (see also *supra* n. 10) and of which *mādt* could be the plural form.¹⁸

Ug. tānt (*tV²nat-), “whispering” **tūnt** (*tV²nat-), “whispering”
 sg. constr. sg. constr.
tānt šmm ʾm ʾrš (KTU 1.3 III 24) *tūnt šmm ʾm ʾrš* (KTU 1.1.III 14)

The identity of the formula makes it necessary to see this allophony as a mere scribal variation.

4. Lexical apophonies in roots/bases /Iʔ/ and /IIʔ/ (different lexemes, by derivative semantic shift)

Another group of phonetic alternances can be ascertained in common nominal /Iʔ/ and /IIʔ/ bases, this time with relevant semantic shift as a consequence of a derivation process; the terms represent different lexemes. Their primary element is a sort of *Primärwort* or morpho-semantic source. Morphologically the

16. See DUL a. v.; also for the adv. use of the lexeme (cf. Eng. “a lot”, Cat. “força”).

17. See M.I. Diakonoff, “Problems of Root Structure in Proto-Semitic”, *Archiv Orientalni* 38, 1970, 453-477; see the *art. cit.*, *supra* n. 1 in which primary radical Semitic apophonies are gathered: *ʾb/ib*, *nāt/nit*, *ʾd/ūd*, *ʾdn/idn*, *ʾmt/imt*, *ʾn/in*, *ʾz/üz* (?)...

18. See Tropper, *Ugaritische Grammar*, p. 295; but cf. D. Pardee, rev. on line <http://www.univie.ac.at/orientalistik/Afo.html#pardee>, p. 181 (“vocalized as a singular”).

alternance is found frequently between monosyllabic (/qatl/, /qitl/, /qutl/) or bisyllabic patterns (/qatal/, /qital/, /qutal/ ...). The allophonies can be: /ʔa:u/, /ʔa:i/, /ʔi:u/, like in the first group.¹⁹

Ug. ʔdn (*²adān-)²⁰, “lord”
 sg. abs./const., concr.
 no pl. extant
ʔt ʔdn tʔsr (KTU 1.1 IV 17)
ʔdn ilm rbm (KTU 1.124:1)

ʔdn (*²ud(u)n-), “dominion”
 sg. suff., abstr.
 no pl. extant
mššš k ʔsr ʔdnh (KTU 1.3 IV 2)

Ug. ʔdn (*²udn), “ear”
 sg., abs., concr.
w in ʔdn ymn (KTU 1.103:35)

ʔdn (*²idn-), “authorization”
 sg. abs. abstr.
šša ʔdn ly (KTU 2.15:5)

According to the Arabic lexicography both terms come from the same base (*ʔ-d-n); but the etymology of *ʔdn* is debatable.

Ug. ʔdr (*²adar-), “wonderful, noble”
 sg., abs., constr., pl., concr.
hlm ʔdr (KTU 1.16 I 8)
tht ʔdrm (KTU 1.7 V 7)

ʔdr (*²udr-), “nobility, splendour”
 sg. constr. abstr.
ʔdr ilqsm (KTU 1.4 V 17)

According to the frequent abstract derivative function of the pattern /qutl/, it is preferable to take *ʔdr* as a sg. abstract noun used for a concret pl. (< “the splendour” // “the most splendid”) than to see a suggestion of an internal pl. here.

Ug. ʔkl (*²ak(a)l-), “grain, food”
 sg. abs./const., concr.
ʔkl l qryt (KTU 1.14 II 28)
ʔkl hpr bt (KTU 4.688:2)
 no pl. extant

ʔkl (²ikl-), “act of eating”²¹
 sg. suff., abstr.
bt ʔkl (KTU 1.22 I 24)
 no pl. extant

Ug. ʔl (*²il-), “god”
 sg. abs., concr. common and DN
ʔl w ʔtrt (KTU 1.65:5; *passim*)
 pl. abs. *ilm* (*²ilūma)
ilm w ʔlht (KTU 1.25:2)

ʔl (*²ūl-), “force”²²
 sg. abs., abstr.
šbū ʔl mād (KTU 1,14 II 35)
 no pl. certified for this form

19. It is presumed that the abstr. form is the derived form. In this connection the concrete/abstract opposition could be considered as an apophonic model of the opposition sg./pl. The abstract noun turns out to be a sort of generic plural from the semantic point of view. The pair *ʔbdy/ūbdy* remains outside consideration, since the second term is a non Semitic loanword; see DUL a.v.

20. This lexeme is not a primary noun (> /ʔad + ān/); see Del Olmo Lete, “The Biconsonantal Semitic Lexicon. 1”, p. 45.

21. In this case both allophonies must be equally primar. It is a case of correlation “action/object” < “verb/noun”. See in this regard G. del Olmo Lete, *Questions de linguistique sémitique. Racine et lexème. Histoire de la recherche* (Antiquités Sémitiques, 5), Paris 2003, pp. 49ff.

22. See Del Olmo Lete, “The Biconsonantal Semitic Lexicon. 1”, p. 52.

Ug. ʾālmn-t (*²*alm-ān-at-*), “widow”²³
 sg. abs., concr.
dn ʾālmnt (KTU 1.1.16 VI 33)
 no pl. extant

Ug. ʾār (*²*ār-*), “light”
 sg. abs./constr., concr.
bt ʾār (1.3 III 6); *ʾār yrḥ* (KTU 1.24:38)
 no pl. extant
b ʾūrm w šnpt, 1.119:19 *passim*

Ug. rīš (**ra:iʿš-*), “head”
 sg. abs./constr., concr.²⁸
nšū rīš (KTU 1.6 III 12); *rīš ḡly* (KTU
 1.19 III 54); *rīš ārgmn* (KTU 1.87:4)
 pl. *rīšt*, *rāšt*, *rāšm*
štkr rīšt (KTU 1.3 II 12);
tšū ilm rāštkm (KTU 1.2 I 9)
d šbšt rāšm (KTU 1.3 III 42).²⁹

ʾūlmn (*²*ulmū:ān-*), “widowhood”
 sg. abs., abstr.
ḥt ʾūlmn (KTU 1.23:9)
 no pl. extant²⁴

ʾūr (*²*ūr-*), “fire”
 sg. abs., abstr./deriv. (?)²⁵
yḡlm ʾūr (KTU 1.19 II 17)
 pl.(?) abs. *ʾūrm* (*²*ūrūma*)²⁶

rūš (**ruʿ(u)š*), “disease of the head”²⁷
 sg. abs., abstr.
rūš šly (KTU 2.63:9)
 pl. no extant

The alternance **šāl**, “demand”, // **šil**, “questioner”, is likely a case of verbal apophony (*mašdar* // act. part.: *yqrb b šāl* (KTU 1.14 I 38); *lm l likt šil šlmy* (KTU 2.63:8). However, the evidence is very limited.

In this group the allophony/alternance is clearly apophonic, not merely phonetic; that is, it implies semantic variation in two different lexemes.³⁰ This means that the nominal system has its apophonic pattern of derivation/diversification parallel to that of the more developed verbal system.³¹ We can even speculate that this complementary opposition/distribution may have acted as a diffusive pattern for the creation of internal plurals. In this regard we may consider plurality as a sort of abstraction (although at the same time

23. The subjacent m. form is sociologically irrelevant, since in the Ancient Near Eastern society no man could be considered a “widower”. The lexical shape would follow the pattern /qtl-ān/, see *ād-n* (*²*ad-ān-*)

24. The multiple vocalic alternances *ān/in/ūn* seem to come from different lexical base; so it is not easy to find an allophonic relationship between them.

25. It is difficult to establish the derivation relationship “light/fire”, but culturally the perception of light may have come first.

26. Less likely a double adv. marker; cf. HB. *ʾūrīm*, *š^elāmīm* in the same cultic context. The lexical difference is well established, see. Hb. *ʾōr* // *ʾūr*.

27. See DUL a. 1. and /r-ʔ-š/, “to toss the head”, equine ailment.

28. For this type of the apophony see *supra ill/ūl*.

29. On these forms see *infra*.

30. “Il faut rigoureusement distinguer entre apophonie, qui relève de la morphologie, et alternance, phénomène purement phonologique” (Kuryłowicz, *L’apophonie en sémitique*, p. 195).

31. “C’est le verbe primaire qui est le foyer principal du rayonnement de l’apophonie vocalique pour la simple raison qu’elle est bien installée dans sa flexion”; see Kuryłowicz, *op. cit.*, p. 198.

a primary “semantic universal”³² born lexically at the same time as the numbering system. “Numbers” seem have being among the first abstraction systems that man achieved, if not the first.³³ Numbers as tokens of different pluralities became a lexical phenomenon that could develop in two different directions:³⁴ as a lexical general/unifying pattern (lexical external marker) or as a specific designative device of different “wholes” linked to the semantic category it “quantified”. A very old system of the first trend/direction of quantifying distinguishes four quantities, combining at the same time external markers of number and gender: the *nomen unitatis* (-0 # /-(a)t(u)/),³⁵ the *nomen dualitatis* (/-(ā)m(a)/ # -0), the *nomen (plurale) paucitatis* for the first ten digits (/-(ū)m(a)/ // /-(ā)t(u)/) (later extended outside this frame) and the *nomen (plurale) abundantiae sive multitudinis* or undifferentiated *nomen (plurale)* (-0 # /-at(u)/), that is, the collective value of the sg./indefinite lexeme.³⁶ The other trend/direction, albeit maintaining the first two quantifying degrees, developed a system of apophonic internal or inflected models for digital and general quantification (while maintaining the morphological distribution); in these models, following the ones provided by the verbal inflection, the singular phonetic pattern of the base and its semantic value cooperate in the development of some specific group plurals which nevertheless are interchanged in many cases later on, giving rise to the undifferentiated plurality of forms for a single base, whose intended items could originally be quantified from different semantic perspectives. The same process can be seen in the pattern development of the *mašdar*: from the only Eastern type (/qatāl-/) to the dual WS type (/qatāl-/ /qat:l:qitl:qutl-/) through the multiple SS realisations. Initially this may have been semantically as well as morphologically conditioned before becoming random in the long term.

These two models or trends of quantifying coexisted and both are primitive, not only in the Semitic family but also in other branches of the Afro-Asiatic *phylum*. The later diachronic development of the Semitic family gave rise to a clear cut division between the evolution of the two systems. While the North-Eastern and Western families clung almost exclusively to the first trend, the South-Eastern branches underwent into a massive development of the second pattern³⁷ for the quantification of the third and fourth degrees mentioned, each branch developing its own system with many distinctive features of its own. There was no unifying frame for all of them, which suggests an independent development of the system under the impulse of the same morphological scheme.

In this regard, as in many other grammatical issues, the Semitic language continuum of the second millennium Syria offers the chance to check the correctness of this assumption.

32. See An. Wierzbicka, “Semantic Primitives Across Language: A Critical Review”, in Cl. Goddard, An. Wierzbicka, eds, *Semantic and Lexical Universals. Theory and Empirical Findings* (Studies in Language Companion Serie, 25), Amsterdam/Philadelphia 1994, p. 472f. (“all, much/many”).

33. See D. Schmandt-Besserat, *Before Writing. Vol. 1: From Counting to Cueniform*, Austin TX 1992 p. 196ff. The plural appears as the opposite of the *nomen unitatis*, but before defining the totality several other sorts of plurality were developed: *nomen paucitatis*, *abundantiae* ...; see Wright, *A Grammar of Arabic Language*, p. 234.

34. For a similar scheme of the double origin of the Semitic plural pattern see Corriente, *Problemática de la pluralidad en semítico*, p. 72.

35. See in Ug.: *ány // ányt*, *qdm // qdmt*, *mṯr // mṯrt*, *mṯb // mṯbt*, *tmn // tmnt* (?) (-0/-t = m./f. = sg./pl.).

36. The collective value has been correctly emphasized in all the treatments of the internal plural as a fundamental element of its genesis. But we must keep in mind that the category of “collective” properly applies to the sig. form with universal value for all the individuals under this singular definition, while in the other cases we refer to different “groups” or “wholes” in limited or more or less indefinite number of individuals. They can be defined as ‘flock of’, ‘team of’, ‘group of’, and so on (even in general ‘people’), according to the sort of units they quantify. Some times they represent well defined sets: e.g. “fingers”, “months”, etc.

37. See Corriente, *Problemática de la pluralidad en semítico*, p. 72f.

5. *The question of internal plural in Ugaritic*

In 1947 S. Moscati published the first pioneer study on the internal or broken plural in Ugaritic;³⁸ since then the issue has received little attention or has not found an adequate place in the normative grammar.³⁹ However, Moscati focusses mainly on the discussion of some *expanded* lexemes (“Gruppo aqtl, iqtl, uqtl, uqtl̄t, qtyl, qtl̄n, qtl̄l”), while the examples taken from the “Gruppo qtl”, in which the question of apophony sg./pl. is essential, are almost all irrelevant today in terms of their possible internal plural form; the form is unverifiable, given the merely consonantal writing. In contrast, no attention is paid to lexemes in which the vocalic apophony is traceable. Now, as stated, the question of the “internal or broken plural” cannot be addressed, either in Ugarit or in any other Semitic language, outside the more general morph of “apophony” or “base change”, the well-attested device also at work in verbal inflection. This internal plural was already pointed out as an issue of apophony by Kuryłowicz in his classical work on the subject.⁴⁰ But it is also of course a question of “phonetic expansion”, internal and external. These two complementary issues should be taken into consideration.

In view of what we have said, both systems, verbal and nominal, turn out to be proto-Semitic; nevertheless we can hypothesize that the mechanisms passed from the verbal into the nominal System, thus harmonising the two systems with a double score of templates, apophonic and expansive, either alone or together. In this connection we should note that the verbal morphological expansions still reveal their pronominal origin, while the nominal pattern expansion appears completely grammaticalised. The relationships between the two morphological systems (verbal and nominal) invite to a thorough investigation. In this regard the morphology of the *mašdar* as a nominal and verbal phenotype, deserves a special attention, as was pointed out above, since it presents certain structural points in common with the internal plural, non the last its multiple patterns besides the accepted regular /qatālu/.⁴¹

We will systematise the possible ancient NWS/Ugaritic morphs with an apparent bearing on this issue, remarking that the possible apophonic patterns (pure internal vs. pure external or composite pattern) are only recognisable through the narrow window of the trilateral /Iʔ/ and /IIʔ/ bases and that the syllabic notation is of little help in this respect, as pointed out above. We will also gather together the expanded forms and integrate them into the common scheme of internal plurals, even the expanded forms (by infixed -h- v.g.) which are usually recorded independently as with no relation to this issue.

38. See S. Moscati, “Plurali interni in ugaritico?”, *RSO* 32, 1957 (*Scritti in onore di Giuseppe Furlani*, I), 399-352.

39. The main exception would be J. Aistleitner, *Untersuchungen zur Grammatik des Ugaritischen* (BVS AWL 100/6), Berlin 1954, pp. 36-47 (“Der Plural der Nomina”), the section on which Moscati’s critic centers, closely following its data. Gordon, Segert, Sivan, Huehnergard, Bordeuil-Pardee, leaving aside other minor grammatical descriptions, do not take this issue into consideration. In a more cursory way also Tropper (*Ugaritische Grammatik*, pp. 294-297) touches on this topic, without mentioning it, under the epigraph: “Nominalbasis vor der Pluralendung”. A sporadic reference can be seen in Corriente’s comprehensive study quoted above (p. 117, 119), with the pertinent bibliographical references on the topic. Nor do the syncretical language descriptions pay any attention to this question in their presentation of Ugaritic grammar. Among the Comparative Semitic treatments, besides Brockelmann’s *Grundriss*, the classical formalization, see today Ed. Lipiński, *Semitic Languages Outline of a Comparative Grammar* (OLA 80), Leuven 1997, pp. 245-251 (“Internal Plural”).

40. See Kuryłowicz, *L’apophonie en sémitique*, p. 179: “Le problème des pluriels dits internes ou brisés (ar. *mukassar*), qui jouent un rôle si important en sémitique méridionale, est correctement référé à l’apophonie dénomminative, bien qu’il soit plus facile de rattacher ces pluriels au verbe qu’au nom. Car l’identité formelle de la plupart des pluriels brisés avec les noms abstraits déverbatives a été de tout temps évidente”.

41. See Tropper, *Ugaritische Grammatik*, pp. 480-490.

6. Simple vowel alternance as apparent number apophony of the same (II?) root

Ug. mīt (*mī ² (a)t-) “(one) hundred” sg. abs./constr. (better appositional) <i>ār mīt</i> (KTU 4.777:3); <i>mīt bd PN</i> (KTU 4.407:2) <i>mīt šmn</i> (KTU 4.272:1)	māt (mī ² āt-) “(several) hundreds” pl. abs./constr. <i>spl tlt māt</i> , and <i>passim</i>
--	---

As in the two following examples the allophony is probably caused on one hand by the vocalic notation of the syllable closing alif⁴² (alternatively, by the vocalism -i/- of the first syllable: pattern /qital/) and on the other by the vocalic quantity and stress of the feminine pl. morpheme -/āt/. This is also the case with the external regular pl. (cf. Hb. *mē²āh*//*mē²ōt*).

Ug. pīt (*pa:i ² t-), “temple” sg. abs./constr. <i>yshl pīt</i> (1.17 II 9); <i>pīt adm</i> (KTU 1.107:3)	pāt (*pa:i ² āt-), “temple”, “temples” (?) sg. (?)/pl. abs./constr. <i>pāt āhd</i> (KTU 4.136:1); <i>ln ykn pāt</i> (KTU 2.75:7) <i>pāt mabr</i> (KTU 1.14 III 1)
---	--

It is not easy to determine the number of these allophonies, most probably due to the variant notation of the vowel of the syllable closing alif and the different length of the pl. in -t, as pointed out in the former case. The syntagms *pāt āhd* and *ykn pāt* seem to indicate a sg. form, unless we presume that in this case the vocalisation reproduces the timber of the syllable opening /?/: sg. *pi²at, pl. *pi²āt (cf. Hb. *pē²āh* // *pē²ōt*; Ebl. *bi-a-tum*; Akk.Mari *piātum*), the sg. notation *pīt* being an archaism to be found only in literary or ritual texts, while in prose texts the form *pāt* stays for both, sg. and pl. It is the same alternance we find in the following example: *rišt/rāšt*. In any case it is a question of orthography, not of morphological apophony.

Ug. riš (*ra:i ² š-), “head” sg. abs. <i>nšū riš hr̄tm</i> (KTU 1.16 III 12)	rišt, rāšt, rāšm (*ra:i ² šāt:m-) pl. abs./suff. <i>štk rišt</i> (KTU 1.III 2 12), <i>tšū ilm rāštkm</i> (KTU 1.2 I 29), <i>šbšt rāšm</i> (KTU 1.3 III 42)
--	--

Again the apparent allophony may actually be a simple allography of the syllable closing alif mentioned above (pattern *ra:i²š-; cf. Arab. *ra²s-*; Akk. *rē:āš-*; Ebl. *riš-*; Syr. *rīš-*); the pl. is actually signed out by the alternative external extension /-t:m/. On the other hand, the alternative vocalisation is also witnessed in the different Semitic languages: Akk. *rāšu/rēsu*, Ebl. *riš-*, Hb. *rō²š* (< ra²š), Ar. *ra²s*, Syr. *rīš(-ā²)*, Eth. *rə²(ə)š*. The duplicity of the external pl. is an interesting feature, which is common among broken pls. On the other hand, note the regular *numeral polar* (gender and number) concordance: *šbšt rāšm*.⁴³ Nothing hints at an internal pl. form.

Ug. šin (*ši:a ² n-) “shoe” du. abs. <i>šinm</i> <i>šinm l yšt</i> (KTU 1.164:2, but see ...)	šānt (*ši:a ² nāt-) “(car) rims” (?), by seman. shift pl. abs. (?) <i>w l šānt tt</i> (KTU 4.392:2)
---	---

42. The notation *mīt* (syllable closing alif) suggests that the original pattern is /qitl-/ better than /qital-/ (?).

43. See Tropper, *Ugaritische Grammar*, p. 392f.

The attestation is insufficient, being found mostly in broken contexts. The meaning of *šânt* in KTU 4.392:2 is highly controversial (see DUL a.v.) and furthermore we are not sure that this is the same lexeme. The numerical concordance seems regular, although the word order is inverted.

Ug. *tār* (**tā²(a)r-*), “safety, protection”
sg. constr. (?)
tār um (KTU 1.14 I 15)

tūr(-k) (**tā²r-*), “protections” (?)
pl.(?) suff.
šbš tūr-k (KTU 1.18. I 25)

In both cases we are dealing with *hapax* in highly controversial and broken texts (DUL a.v.), so the certification must be deemed insufficient to provide a sound conclusion; for the lexical pattern see Arab. *tā²r-*, the only certain lexical parallel at our disposal. However, we are sure that the regular syntax of the numerals would presuppose a pl.f. form⁴⁴ in *tūr-k*, to be expected in a literary text, but the suffix may also conceal an extended external pl. (/m/), the alternance /a:i/ being merely a graphical convention as in the former examples. The uncertain, broken context of the texts does not allow valid parsing and conclusion.

To sum up: processes of assimilation and allophony do not touch on the question of the internal apophonic plural, nor does the allographic scribal practice. They represent generic phonetic phenomena that merely witness the ease with which allophony may appear in the nominal morphology.

7. Some appalling examples of apparent numeral thematic apophony in Ugaritic

What is meant here is a proto-apophony of different lexemes, namely, internal apophonies in roots /I?/ by free non conditioned apophonic alternance, namely, the apophony that is constitutive of the internal plural.

Ug. *tāt* (**tī²at-*; cf. Em. *ši-a-ti*, /*ši²ātu*/),⁴⁵ “ewe” ***tūt*** (**tū²ut-(?)*) / ***tāt*** (**tī²āt-*)⁴⁶
sg. abs. pl. contr./abs.
k lb tāt (KTU 1.6 II 29) *tūt tḫ* (KTU 1.80:3)

A possible pl. *tāt-* in KTU 1.111:18, *šbš tāt*, is uncertain (cf. DUL a.v.), but not impossible, in perfect accordance with the regular numeral concordance; in this case it should be a regular external plural. In KTU 1.6 II 29 the form *tāt* could also be a pl.⁴⁷ The allophony *tūt* is surprising all the same. See in this connection the Akk. double form *šuātu/šātu* and *šu²u*.⁴⁸ Maybe in this category of animal flock/herd the group denomination (“flock”) appeared for the first time for the pl. (cf. beside *tāt/tūt*: *āl/il* [?], *imr/āmr*,

44. See E. Verreet, “Der Keret-Prolog”, *UF* 19, 1987, 325.

45. See E.J. Penttiuk, *West Semitic Vocabulary in the Akkadian Texts from Emar* (HSS 49), Winona lake IN 2001, p. 171f.

46. But see Tropper, *Ugaritische Grammatik*, p. 179, 185: “*tūt* /*tā²āt-* / < /**tā²awt-* < **tā²awat-* “Mutterschaft” 1.80:3: es handelt sich offenbar um eine phonet. Variante zu *tāt* /*tā²āt-* / < **tā²awat-* “Mutterschaft” (1.6 :29&) und nicht um eine Pluralform”. But the Emar parallel weakens this parsing to some extent. See also in the same direction D. Pardee, *Les Textes rituels. Fascicule I* (RSOu XII), Paris 2000, p. 437, n. 9.

47. The reading *tāt šin* of KTU 1.103:1 is rather suspected; see Pardee, *op. cit.*, pp. 533ff.; Tropper, *op. cit.*, p. 297; Del Olmo Lete, *Canaanite Religion according to the liturgical texts of Ugarit* (AOAT 406), Münster 2014., p. 299ff (l¹*tāt šin*); but now KTU: *tkt šin*.

48. See CAD Š3, 417.

along with *šin*),⁴⁹ naturally among the nomadic people the “whole or group” of animals, a flock, is a (lexical) singular and (semantic) plural (*šin: ālp w šin, šin mrāt*, but also *hms šin, šbšm šin...*), since the sg. can, mainly in these nouns of animal species, also assume collective/plural value. In this scenario, starting from the species or generic noun, the need was felt to develop numerical forms such as “nomen unitatis”, different “nomina paucitatis”⁵⁰ and also “nomen multitudinis” which that in the long term lost their specific plural meaning and became mere alternative forms of internal/broken pl.⁵¹ In this way double initially plural forms appear (with and without external markers). The verbal active/agent on the contrary, completely indefinite without connoting an empirical “group”, cannot be taken as a particular collective and developed only an external plural. There may be a socio-economic conditioning of the morphology.

Ug. ĩmr (*²*imr-*) “lamb”

sg. abs./ constr.

ĩmr w ynt qrt (KTU 1.119:10)

ĩmr b py (KTU 1.6 II 22); *tṭbh ĩmr* (1.16 IV 20)

lqh ĩmr dbh b ydh (KTU 1.14III 56)

ām̄r (*²*amar-*), “lambs”

pl. abs. (?)

tdbh āmr (KTU 1.20 I 10)

Undoubted *ĩmr* is a sg. form, as can be seen from the quoted texts. However, the context of a banquet being offered to many guests requires *ām̄r* in KTU 1.20 I 10 to be a pl. form as well. But the broken context (line end) does not allow us to parse it reliably as an abs. or contr. form. In the first case it seems a serious candidate for consideration as an apophonic internal pl. without the external marker *-m*. However in a clear plural context we have also a parallel syntagm that involves the form *ĩmr: šql trm w mri ilm, šglm dt šnt ĩmr qmš llim* (KTU 1.22 I 12-14). If we take *ĩmr* as a separate item we must parse it as an abs. pl. also, like the other items to be sacrificed (*trm, šglm, llim*): it would be either an allophone of *ām̄r* or a sg. form with plural/collective meaning. In this case this seems less likely, taking into account the contextual quoted items, all of them morphological external plurals. But it can also be parsed as a constr. pl. (*ĩmr qmš*, see *mri ilm*) of an external regular form *ĩmr-m*.⁵² The case remains uncertain, but deserves special attention, since here we can invoke the alternative vocalic notation mentioned, in this case a free, unconditioned allophony, which means an authentic apophony.

Ug. ĩzml (*²*izmal-*), “sack, harness”

sg. abs.

ĩzml aḥt (KTU 5.3:7), *hmsm ĩzml* (KTU 4.284:2) *tl̄t āzml*, KTU 5.23:3)

āzml (*²*azmā:al-*), “sacks, pieces of harness”

pl. abs.

49. However it must be taken into account that “collective” signifies a semantic use that refers to the “singular” of a nominal/adjectival (quality and subject,) category/species which usually appears in a “group”.

50. The multiplicity of Ar. nouns for groups of men it is well known: ²*anas, ḥanak, daḡḡ(at)* ... (more than forty can be gathered from the three first volumes of AEL (Lane).

51. A peculiar case is Ug. *ĩnš*, “people”, Heb. ^{2e}*nōš/na nāšim*, forms which cannot easily be separated from Ar. *nas*, Akk. *niš-*, Ebl. *nas-*, Emar. *nas* (see D. Arnaud, “Les traces des ‘Arabes’ dans les textes syriens du début du IIe millénaire à l’époque néo-assyrienne: esquisse de quelques thèmes”, in H. Lozachmer, ed., *Présence arabe dans le Croissant fertile avant l’Hégire*, Paris 1995, p. 21) and in the Ug. *bnš, bn nšm* (Ug.Syll. *bu-nu-šu*; see DUL a.v.); it could be either a sort of broken plural by apheresis of the first alif (!) or a secondary derived form by affixation of /a/, pattern /aqtāl/; a similar case can also be seen in Ug. *qnú // iqnú* (see DUL, a.v.); see J. Tropper, “Kanaanäische Lehnwörter im Ugarischen. Neue Überlegungen zu *bnš = bu-nu-šu, pāmt und mrḥqt*”, *UF* 35, 2003, 663-671 (663-664).

52. See e.g. one of the latest versions: D. Pardee, “Nouvelle étude épigraphique et littéraire des textes dits ‘Les Rephaim’ (CTA 2-22)”, *Orientalia* 80/1, 2011, 42 (“Immole ... force agneaux”).

These examples show a clear case of morphological polar number opposition between numeral and numbered item, in accordance with the regular syntax of the numerals: *tl̄t̄ āzml* (KTU 5.23:3), instead of the expected external *tl̄t̄ izmlm* (*izml* is f. according to KTU 5.3:7: *izml āht*) if we suppose this syntax to be operative in Ug.⁵³ In this case we have both: the lack of an external marker and the apophonic alternance of the (quadriliteral) base. We are dealing nevertheless with a foreign word and the possibility remains also of a phonetic alternance (see above, although in this case the phonetic conditioning is not clear) together with the use of the sg. with collective/pl. meaning.

Ug. dm̄st (**di:am̄at-*), “tear”,

sg./pl. abs.

lytk dm̄st (KTU 1.19 II 33, with pl. meaning)

tšt ... ūdm̄st (KTU 1.6 I 10)⁵⁴

ūd̄m̄st (**²udmu:āāt-*)

pl. abs./suff.

tntkn ūdm̄st-h (KTU 1.14 I 28)

The context of the sg. abs. form is rather unclear; the lexeme may even be an alternative sound pl. (**dim(a)̄āt-*) or may represent the collective use of the sg. This sg. f. form is nevertheless well attested in other Sem. languages (Akk. *dimtu*, Ar. *dam̄-/-at-*, Hb. *dim̄at*).⁵⁵ The pl. abs. *ūd̄m̄st* in its turn is unequivocally well and repeatedly attested in Ug. This would be the only sure case of internal plural even for Moscati;⁵⁶ see in this regard Ar. pl. *pauc. ²admū* face to pl. *mult. dumū* (> *dam̄*).⁵⁷ The surprising thing in Ug. is that we apparently have both markers of pl. (apophonic prefix of extended form. /ʔu-/ and the regular external f. extension (-āt-) (contrast Ar. pl. *²admū-*).⁵⁸ There is no clear explanation, but an analogous formation can be presumed here. In this regard a comparison with *ūšb̄st*(*t*), “finger(s)” may be illustrative. Both come from base IIIʃ and both affix a prothetic /ū-/ to it to shape a nominal form with pl. meaning.⁵⁹ In any case it remains isolated and may have originated as a nominal form (“plenty of weeping”) with a pl. meaning abundance in keeping with the frequent template /uqtl/ (?) in the language of the first half of the second century Syrian Semitic (see *infra*).

Ug. āzmr (**²az(a)mar-*), “foliage” (< “branches”)

sg./pl (?) abs.

ārb̄st ārb̄st m̄tbt āzmr (KTU1.41:56)

The meaning of this *hapax* term is pl., but the form may correspond to a nominal collective formation, possibly a loanword from Akk. *azamru*; the sg. non extended form, attested in other Semitic languages,⁶⁰ is non extant in Ugaritic.

53. See *supra* n. 41. The numeral “three” would require a plurality of individual items, but a collective might also be appropriate: see above *hm̄š, šb̄sm šin*.

54. See DUL a.v. for other examples

55. See DUL a.v. But Ebl. *i-ti-ma-a-tum* (see DUL a.v.).

56. See Moscati, “Plurali interni in ugaritico?”, p. 345 (“è l’esempio migliore ... il significato no si presta a dubbi fondati; esiste un singolare attestato; il verbo che accompagna la parola è al plurale (*tnkt*) ...; possibilità di un singolare a pefisso *u-*”).

57. According to AEL 913: *n. unitatis dam̄at-*, *pl. paucitatis ²admū-*, *pl. multitudinis dumū-*.

58. Only in the Ar. pattern /aqtilat/ of the internal plural would the Ugaritic pattern /²uqtl/ of *ūd̄m̄st* find a semi-parallel; see Corriente, *Problemática de la pluralidad en semítico*, p. 12. Moscati (“Plurali interni in ugaritico?”, p. 345) on his turn asserts: “lo schema (/uqtl/) non è attestato altrove per il plurale interno”. The same should also be said of the patterns /iqtl, uqtl/.

59. Actually *ūšb̄st* is used in Ug. only as a pl. form; see DUL a.v.

60. See DUL a.v.: Akk., *zamru*, Hb., *z̄môrāh*.

Even if these prothetic forms (*i:ázml*, *úmdšt*, *ázmr*) cannot be taken as unequivocal examples of internal or broken Ugaritic plurals, along with the abundant vocalic alternances found in the Ugaritic lexicon, they may be seen as proof of a morphological trend always present in the Semitic family that would be developed by the South-Semitic language family when it branched from the Syrian linguistic continuum at the end of the second century BC.⁶¹ On the other hand we do not know the pl. vocalisation of the monosyllabic themes /qatl-/ in order to be able to assess its bearing on the issue of the plural of segolate nouns in NWS, frequently adduced as a proof of the presence, at least as a remnant, of the internal pl. in the SS linguistic branche.⁶² Furthermore for the nominal determination of number in no expanded and not vocalised forms the mere adjectival concordance is not conclusive, since we may run across the use of enclitic *-m*. The verbal concordance is valid in principle but sometimes it becomes ambiguous.

8. Internal expanded templates (in /-h-/ , /-y-/)

The last proof of this expansive morphological trend is the pl. in /-h-/ infixed expanded forms. This is a kind of internal consonantal expansion that appears in a small group of *primary feminine binary nouns* and which are not usually accounted for as internal plurals.⁶³ The pattern may have originated as an analogous formation according to alternative archaic forms like sg. *ilht* f. of m. *ilh* [²ilāhu] (pl.m. *ilhm* [²ilāhūma]) / f. *ilht* [²ilāhatu] (pl. *ilht* [²ilāhātu]), besides the more usual sg. m. *il* [²ilu], pl.m. *ilm* [²ilūma], sg.f. *ilt* [²ilatu], pl.f. *ilt* [²ilātu]. Starting maybe from this originally trinary root (with optative radical /h/) forms developed which were semantically connected in the field of family relationships: *úmt(t) // úmht*, *ámt // ámht*, *b(n)t // bnht(?)*;⁶⁴ and by secondary analogous extension: *qrt // qrht* and *b(y)t // bhtm*, alt. *bwtm* (< *b(y:w)t* < *b(y)ht-m // bwt-m*),⁶⁵ the only one with a supplementary external extension /-m/ to compensate (?) for the contraction of the diphthong,⁶⁶ thus acquiring the same quadrilateral pattern in the fiction of a trinary sg. base with a radical /-h-/. All the same, these analogous formations reveal the tendency to produce expanded pl. forms along with the regular pl. external template.

We must also mention the pl. extended forms with insert /-y-/, v.g. *hmt // hmyt* (also in Phoen.), *phr // phyr*, *mrm // mrym*, *ddm // ddym* ...⁶⁷ as pl. of totality or group, while the expansion in /w-/ (*bnwt*) corresponds rather to the actualisation of the primitive IIIw radical of the base. A special case appears in *miyt // mhyt* due to either phonetic alternance ?/h⁶⁸ or to mere graphic reading/writing confusion. However, all these infixed expansions are due to the morphological lexical requirements of the base, and in principle

61. A case like *nsk árym* (see DUL a.v.) face to *nsk m birtym* is to be taken as a gen. construction (“casters from among the GN”) or as a scribe’s overlooking, rather than as an internal pl. of a participial form (!) (qātilu > qitāl-, qutāl-).

62. See the Heb./Ug. theme: **malk // m^elākīm* (internal sliding) > **malku / *malkuma > *malakūma* (> **m^elakūma*). In any case this seems to be more a question of stress and syll. harmonization than of actual base apophony. On this issue in general see W.H. van Soldt, “The vocalization of the word *mlk*, ‘king’ in Late Bronze Age syllabic texts from Syria and Palestine”, in *HAMLET ON A HILL. Semitic and Greek studies presented to Professor T. Muraoka* ... (OLA 118), Leuven/Paris/Dudley MA 2003, pp. 449-471.

63. See Corriente, *Problemática de la pluralidad en semítico*, p. 34; Tropper, *Ugaritische Grammatik*, p. 163, 296.

64. See Ar. *bintu/ibnatu/banatu*.

65. A relatively similar case could be seen in *iy // iht* (?), but the documentation is insufficient.

66. A possible case without external expansion neither f. in gender nor with m. mark could be seen in *gl // ghl* (?) (s. DUL), dubious morphology, *gl, without pl. meaning.

67. See Moscati, “Plurali interni in ugaritic?”, pp. 346ff. (“Gruppo qtyl”).

68. See Corriente, *op. cit.*, p. 34; on the complementary distribution of ?/h seen Del Olmo Lete, *Questions de linguistique sémitique*, p.79 (correct /’/ for /’/).

have nothing to do with the mechanism that produces the internal pl. These infixed expansions of pl. forms shape a restrict morphologically and semantically conditioned group.

Finally in this context we should mention the lexical pattern /^lu-qtl-(t)/, frequent at Ugaritic but almost completely absent from the other Semitic languages,⁶⁹. We have seen it present in terms like *údmšt* and *úšbšt*. Actually these are the only suggestions of an internal pl. In Ugaritic most of the terms in this pattern are foreign loanwords: *úbdít/úbdy/úpdt*, *úšpğt*, *úłht*, *úłpt*, *úłr* (?), while *úđbr* (Ar. ²*udābir*),⁷⁰ and *úłkl* (Heb. ²*eškōl*; Ar. ²*úłkal*, ²*úłkul*) are genuine Semitic nominal lexemes (/^luqta:ul/). In turn, in *úpq̄t*, *úłryn/úłhryt* the initial /ú/ seems to belong to the base and not to be a prefixed expansion, the pattern being of the type /qutl-/.

9. Conclusion

The internal plural is a retention in the development of the Semitic nominal morphology, present throughout AA *phylum*, but it also appears as an innovation bearing in mind its late and almost exclusive development in the (East-)South-Semitic family (OSA, MSA, Ar. and Eth., classic and dialectal) in which it has been intensively studied.⁷¹ In its origin it can be interpreted as either an analogous diffusion or as a parallel development of the verbal pattern system. The plural number was originally marked in PS only by the apophonic length of the ending syllable in common nouns (/ -u/ # / -ū/) and in the verbal inflection (/qatala/ # /qatalū/). Simultaneously or at a second (?) stage a suff. extension /-m/ was added. Along with this final/external apophony and in accordance with the verbal System, a similar alternative system of apophonies and expansions was developed for the nominal number morphology, following also maybe the verbal pattern (/qatala/ # /yaqtulu/, /qatila/ # /yiqtalu/). In this process the abstract notion and function of accounting and reckoning, semantically conditioned by the numbered items and their normal grouping, was determinant. This process remained open and each language developed its own set of apophonic pls., borrowing from the already developed nominal morphological patterns just as the verbal noun (*mašdar*) has done in the development and diversification of its own morphology.⁷²

In the Ugaritic grammars the issue is only mentioned in passing, although the meaningful forms in this connection are accurately recorded. Though faithful to the external pl. system, the Ugarit texts provide abundant nominal allophonies, phonetical and derivative, which may have contributed to opening the way towards the affirmation of the apophonic internal system of pl. morphology in a society where plurality was highly determined by everyday, concrete reckoning of items gathered together in definite “wholes”, with abstract plurality being confined to the sg. nominal form in its collective sense. This system had been in operation since the very old stage of the linguistic *phylum*; nevertheless, its massive use is documented rather late in the development of comparative Semitic morphology. The oldest testimonies go back only to the Old (Epigraphic) North/South Arabic (8th/7th cent. BC). The previous genetic stage is to be found in the linguistic situation of the Late Bronze Syria. Once again, the Old Syrian Language Continuum emerges itself as the ascertainable morphological cradle of the development of a linguistic process in Semitic grammar, in this case of the internal plural.

69. For the Emariote see D. Arnaud, “Le vocabulaire de l’heritage dans les textes syriens du moyen-Euphrate à la fin de l’âge du Bronze Récent”, *SEL* 12, 1995, 21-26 (24). This pattern coincides with the preservation of initial /w/ in bases Iw; actually the pattern is /quttal/; cf. also E.J. Penttuc, *West Semitic Vocabulary in the Akkadian Texts from Emar* (HSS 49), Winona Lake 2001, pp. 187-192, 235f.

70. See G. del Olmo Lete, “Ugaritic *nhl* and *úđbr*: Etymology and Semantic Field”, *JAOS* 132/4, 2012, 613-621.

71. See *infra* the thematic Bibliography.

72. See *supra* p. 56f. on the suggested three stages of this development.

10. *Internal/Broken Plural: A Bibliography (Particular and comparative grammars, and collective language presentations are not recorded)*

AFRO-ASIATIC

- J.H. Greenberg, "Internal a-Plurals in Afroasiatic (Hamito-Semitic)", *VIO* 26 (*Fs. Westermann*), 1955, 198-204.
- A. Kihm, "Plural formation in Nubi and Arabic: A comparative study and a word-based approach", *BAALL* 3, 2011, 1-21
- E.A. Knauf, "Bemerkungen zum ägyptisch-semitischen Sprachvergleich", *GM* 79, 1984, 17-18; 94, 1986, 45-48 [3. Zweisilbengesetz u. Pluralbildung].
- R.R. Ratcliffe, *The broken plural problem in Arabic, Semitic, and Afroasiatic: a solution based on the diachronic application of prosodic analysis*, I-II, Diss. Univ. Yale 1992, New Haven CT 1992 [*DAI* 54/1 1993 164-A].
- R.R. Ratcliffe, "Drift and noun plural reduplication in Afroasiatic", *BSOAS* 59, 1996, 296-311.
- W. Vycichl, "Un nouveau pluriel nominal chamito-sémitique (accadien, arabe, égyptien, berbère)". *GLECS* 17, 1972-1973, 45-49.
- W. Vycichl, "Zur Herkunft der amharischen Plurale *b'et^wč-*, *g'et^wč-*, etc. Ihre Beziehungen zum Ursemitischen und Altägyptischen", *Aegyptus* 32, 1952, 491-494.
- A. Zaborski, "The Semitic external plural in an Afroasiatic perspective", *AAL* 3/6, 1976, 1-9 (111-119).

SEMITIC

- J. Barth, "Beiträge zur Pluralbindung des Semitischen", *ZDMG* 58, 1904, 431-446.
- F. Corriente, *Problemática de la pluralidad en semítico: el plural fracto* (Inst. Benito Arias Montano, Serie I, 1), Madrid 1971 [rev.: *JSS* 19, 1974, 275-284 (P. Fronzaroli); *BSOAS* 37, 1974, 678-681 (J. Barr)].
- I. Ferrando, "El plural fracto en semítico: nuevas perspectivas", *EDNA* 4, 1999, 7-23 [on R.R. Ratcliffe's *The broken plural problem*, 1992].
- G.M. Gabučan, "K vopruso o strukture semitskogo slova (v svjazi s problemoj 'vnutrennej fleksii')", in *SJMP*, pp. 114-127 [On the structure of the Semitic word (the problem of 'internal flexion')].
- J. Kuryłowicz, "The plural in Semitic", in A. Juillard, ed, *Linguistic Studies Offered to Joseph Greenberg* ..., vol. I, Saratoga CA 1976, pp. 95-102.
- J. Kuryłowicz, "Esquisse d'une théorie de l'apophonie en sémitique", *BSL* 53, 1957-58, 1-38 [8. Les pluriels brisés du sémitique méridional].
- A.S. Lekiasvili, "K vopruse o vzaimootnošenii meždu vnutrennimi i suffiks'al'nymi morfemami roda i čisla imen v semitskich jazykach" [On the relations between internal and suffixal morphemes of gender and the number of nouns in the Semitic languages], in G.Š. Šarvatov, ed., *Semitskie jazyki*, Moskva 1965, pp. 109-114.
- A.S. Lekiasvili, "K vopruse o vzaimootnošenii meždu vnutrennimi i suffiks'al'nymi morfemami roda i ciska imen v semitskich jazykach" [On the relations between internal and suffixal morphemes of gender and the number of nouns in the Semitic languages], in *SJMPK*, pp. 109-114.
- J. Lajčiak, *Die Plural- und Dualendungen am semitischen Namen*, Diss. Leipzig 1902.
- E. Meier, *Die Bildung und Bedeutung des Pluralis in der semitischen und indogermanischen Sprachen*, Mannheim 1846.
- A. Murtonen, *Broken plurals: origin and development of the system*, Leiden 1964 [*Arabica* 12, 1965, 105-106 (A. Boudot-Lamotte); *ArOr* 35, 1967, 329-330 (K. Petráček); *ZFFUK, Graecolatina et Orientalia* I, 1969, 145-146 L. Drozdík].

- F. Philippi, "Die semitische Verbal- und Nominalbildung in ihren Verhältniss zu einander", *Beiträge zur Assyriologie und vergleichenden semitischen Sprachwissenschaft* (Leipzig) 2, 1894, 359-389.
- K. Petráček, "Die innere Flexion in den semitischen Sprachen I-V", *Archiv Orientální* 28, 1960, 547-606; 29, 1961, 513-545; 30, 1962, 361-408; 31, 1963, 577-624; 32, 1964, 185-222.
- R.R. Ratcliffe, *The broken plural problem in Arabic, Semitic, and Afroasiatic: a solution based on the diachronic application of prosodic analysis*, I-II, Diss. Univ. Yale 1992, New Haven CT 1992 [DAI 54/1 1993 164-A].
- R. Ratcliffe, *The 'broken' plural problem in Arabic and comparative Semitic: Allomorphy and analogy in non-concatenative morphology* (ASThHLSc. CILTh, 168), Amsterdam/Philadelphia 1998 [rev.: *EDNA* 4, 1999, 7-23 (I. Ferrando); *Aethiopica* 3, 2000, 255-257 (R. Voigt); *Al-Qanṭara* 22, 2001, 260-262 (J. Puig Montada); *JNES* 61, 2002, 61-62 (D. Testen); *TAL* 41, 2002, 101-104 (M. Waltisberg); *JNES* 61, 2002, 61-62 (D. Testen)].
- J. Retsö, "State and Plural Marking in Semitic", in E. Wardini, ed., *Built on solid rock: Studies in honour of Professor Ebbe Egede Knudsen*, Oslo 1997, pp. 268-282.
- Z.G. Rustamova, "The problem of the category number in the semitic languages" (Russ.), *PAPh* 1979/3, 145-151.

AKKADIAN

- Chr. Huber, "Complex predicate structure and pluralised events in Akkadian", in K. Kiss, ed., *Universal grammar in reconstruction of ancient languages* (Studies in generative grammar, 83), Berlin 2005, pp. 189-238.
- A. Salonen, 'Nomen unitatis im Akkadischen', *BiOr* 31, 1974, 38.

UGARITIC

- J. Aistleitner, *Untersuchungen zur Grammatik des Ugaritischen* (BVSAWL 100/6), Berlin 1954, pp. 36-47.
- S. Moscati, "Plurali interni in ugaritico?", *RSO* 32, 1957 (*Fs. Furlani*), 399-352.
- D. Sivan, "Notes on the use of the form *qatal* as the plural base for the form *qtl* in Ugaritic", *IOS* 12, 1992, 235-238.
- A. van Selms, "*Paʿyal* formations in Ugaritic and Hebrew nouns", *JNES* 26, 1967, 289-295.

EMARIOTE

- D. Arnaud, "Les traces des 'Arabes' dans les textes syriens du début du IIe millénaire à l'époque néo-assyrienne: esquisse de quelques thèmes", in H. Lozachmer, ed., *Présence arabe dans le Croissant fertile avant l'Hégire. Actes de la Table ronde internationale (Paris, 13 novembre 1993)*, Paris 1995, p. 21.

HEBREW

- J. Bembry, "Plural Based Duals", *JSS* 54, 2009, 383-388.
- A.A. Bloch, "Plurals of multiplication, plurals of division", *PICL* 14, 1987, 894-897.
- F.E.Chr. Dietrich, *Der hebräische Plural nach Begriff und Form* (Abhandlungen zur hebräischen Grammatik, 1), Leipzig 1846.
- S.E. Fassberg, "Vowel Dissimilation in Plural Pronouns in Biblical Hebrew", *Or* 78, 2009, 326-335.
- C.W. Gordon, "(L)y Collectives of the Q⁶tûl Formation", *Fs. Gordon 1998*, pp. 64-68.
- W. Jenrich, *Der Pluralis fractus im Hebräischen, ein Rudiment ursemitischer Bildung*, Diss Halle 1883.
- P. Lagarde, *Übersicht über die im Aramäischen und Hebräischen übliche Bildung der Nomina*, Göttingen 1889.

- I. Meir, "Morphological levels and diachronic change in Modern Hebrew plural formation", *SLang* 30, 2006, 777-806.
- D. Ravid, R. Schiff, "Morphophonological categories of noun plurals in Hebrew : a developmental study", *Linguistics* 47, 2009, 45-63.
- W.H. Salter Brooks, *Vestiges of the broken Plural in Hebrew*, Dublin 1883.
- O.(R.) Schwarzwald, "Grammatical vs. lexical plural formation in Hebrew", *FoL* 25, 1991, 577-608.
- M. Serfaty, "Les mots au pluriel et au féminin en hébreu biblique: essai d'analyse lexicographique", in *WCJS* 10/DI, 1989, 17-24.
- S. Sharvit, "Nouns with double formation in the plural in Tannaitic Hebrew" (Heb.), *Mehkarim Belashon* 4, 1990, 335-373.
- M.G. Slonim, "Feminine Nouns in Plural with Predicates in Masculine Singular and Feminine Singular", *JBL* 72, 1953, xvi.
- P.S.F. van Keulen, "Feminine Nominal Ending in Hebrew, Aramaic and Syriac: Derivation or Inflection?", in *FSL III*, pp.27-39.
- H. von Siebenthal, "'Collectives' in Ancient Hebrew. A Closer Look at the Semantics of an Intriguing Noun Category", *KUSATU* 10, 2009, 67-81.
- A. Wagner, "Zum textproblem von Ps 29, 9: Überlegungen zum Plural der Nomina collectiva und der Pflanzennamen im biblischen Hebräisch und ihrer Bedeutung für das Verständnis von Ps 29,9", *ZAH* 10, 1997, 177-197.
- C.V. Wallace, *Broken and double plural formations in the Hebrew Bible*" (Diss. New York Univ.), New York NY 1988. [DAI 50/I, 1989, 125-A].
- L. Young, "'Am construed as singular and plural in Hebrew Biblical texts: diachronic and textual perspectives", *ZAH* 12, 1999, 48-82.

ARAMAIC

- Ed. Lipiński, "'Broken' plural in 'Aramaic' tribal names", in *Semitic and Assyriological Studies Presented to Pelio Fronzaroli*, Wiesbaden 2003, pp. 336-349.
- P.S.F. van Keulen, "Feminine Nominal Ending in Hebrew, Aramaic and Syriac: Derivation or Inflection?", in *FSL III*, pp.27-39.

ARABIC, STANDARD AND DIALECTAL

- A-M. Āassūnī, "The broken plural in Arabic" (Ar.), *Dirāsāt* 5, 1991, 115-149.
- M.Z. Abd-Rabbo, "Sound plural and broken plural assignment in Classical Arabic", in M. Eid, ed., *Perspectives on Arabic linguistics I* (CILT 63), Amsterdam 1990, pp. 55-93.
- A.H. Abu-Mansour, "The interface between morphology and phonology: the case of broken plurals in Arabic", *LACUS* 22, 1995, 320-339.
- T.M. Al-Azzawi, *Broken plurals in Modern Iraqi Arabic*. Diss. Univ. Michigan 1973 [Dab 34/3. Sept. 1973. 1264-A].
- N. Al Jallad, "A morphological study of the plural in Arabic: a connectionist versus a rule-based approach", in *ALAA*, pp., 119-128.
- W. Al-Qadī, "The earliest 'Nabita' and the paradigmatic 'nawābit'", *StIs* 78, 1993, 27-61.
- A. Arioli, "'Ufūl: forma rara di plurale arabo", *RSO* 68, 1994, 221-232.
- I. Alsamirrai, "The Plural in Arabic" (Ar.), *Sumer* 16, 1960, 25-37.
- I. Alsamirrai, "Statistiques des pluriels internes dans le Coran", *BSL* 50, 1954, xxviii (summary).
- Š. Z. Babachanov, "Množestvennoe čislo vnutrennego obrazovanija v arabskom jazyke", *NAA* 1973, 151-156 (The internal plural in Arabic).

- H. Derembourg, *De pluralium linguae arabicae et aethiopiae formis generis origine et indole*, Göttingen 1867.
- H. Derembourg, "Essai sur les formes des pluriels arabes", *JA* 10, 1867, 425-524.
- L. Drozdík, "Derivational system of collective and unit names in Arabic", *ZFFUKom, Graecolatina et Orientalia*, 9-10, 1977-1978, 165-207.
- L. Drozdík, "Pluralization of lexical borrowings in Arabic as a criterion of the inflectional assimilation", *ZFFUKom, Graecolatina et Orientalia* 11-12, 1979-1980, 59-81.
- I. Dupont Moujib, "La formation des pluriels brisés issus des quinquilitères et des sextilitères en arabe", *LaLing* 2, 1998, 93-145.
- I. Ferrando, "Broken versus regular plural in Modern Arabic: the case of *tafīl*", in *ALAA*, pp. 107-117. I. Ferrando, "El plural fracto en semítico: nuevas perspectivas", *EDNA* 4, 1999, 7-23.
- W. Fischer, "Die arabische Pluralbildung", *ZAL* 5, 1980, 70-88.
- S. Guyard, *Nouvel essai sur la formation du pluriel brisé en arabe*, Paris 1870.
- H.A. Hamaker, "Commentatio de pluralibus Arabum et Aethiopicum irregularibus qui a grammaticis vulgo fracti appellari solent", *Orientalia* (Amsterdam) 1, 1840, 1-63.
- M. Hanitsch, "Kongruenzvariation beim unbelebten Plural im Neuarabischen: Beobachtungen zum damaszenischen attributiven Adjektiv im Dialektvergleich", in *Fs. Diem*, pp. 139-151.
- J. Heath, "Moroccan Arabic Plurals and Gemination: Some Data to Sleep On", in *Fs. Leslau* 1991 I, pp. 627-633.
- ⁵A. Idrīsī, "Plural formation in Arabic", in M. Eid, R.R. Ratcliffe, eds, *Perspectives on Arabic linguistics X*, Amsterdam 1997, pp. 123-145.
- S. Kaye, "Semantic Transparency and Number Marking in Arabic and Other Languages", in *ALB*, pp. 149-184.
- A. Kihm, "Les pluriels internes de l'arabe: systèmes et conséquences pour l'architecture de la grammaire", *RLV* 32, 2003, 109-159.
- A. Kihm, "Les pluriels internes de l'arabe: un essai d'anatomie", *BSL* 99, 2004, 311-361.
- A. Kihm, "Nonsegmental concatenation: a study of Classical Arabic broken plurals and verbal nouns", *Morphology* 16, 2006, 69-105.
- A. Kihm, "Plural formation in Nubi and Arabic: A comparative study and a word-based approach", *BAALL* 3, 2011, 1-21.
- A. S. Lekiašvili, "Zur Bildung des gebrochenen Plurals im Arabischen", in *A25C10* 2, pp. 136-141.
- M. M. Levy, *The Plural of the noun in Modern Standard Arabic*, Diss. Univ. Michigan 1971 [*DAb* 32/3, Sept. 1971, 496-A].
- M.M. Levy, "Rules for forming noun plurals in Modern Standard Arabic", in J.A. Bellamy, ed., *Studies in Near Eastern culture and history in memoriam of Ernest Abdel-Massih* (Michigan seires on the Middle East, 2), Ann Arbor MI 1990, pp. 72-89.
- M.M. Levy, J.L. Fidelholtz, "Arabic broken plurals, rule features, and lexical features", *Glossa* 5, 1971, 57-70.
- L. Matouš, "Zum sogenannten inneren Plural im Arabischen", *Archiv Orientální* 24, 1956, 626-630.
- J.J. McCarthy, "A Prosodic Account of Arabic Broken Plurals", in R. Dihoff, éd., *Current Trends in African Linguistic I*, Dordrecht 1983, pp. 289-320.
- J.J. McCarthy, A. Prince, *The Prosodic Morphology of Arabic. The Broken Plurals*, ms. University of Massachusetts and Brandeis University 1988.
- J.J. McCarthy, A. Prince, "Foot and word in prosodic morphology: The Arabic broken plural", *NLLT* 8, 1990, 209-283.
- M. Mifsud, "Internal pluralization in Maltese: continuity and innovation", in *PIICAIDA*, pp. 91-105.

- M. Mifsud, "The collective in Maltese", *RdL* 8, 1996, 29-51.
- A. M. Mujic, "Karakteristicna upotreba plurala u savremenom arapskom jeziku" (The characteristic use of the plural in Modern Arabic), *POF* 31, 1981, 33-51.
- D.H. Müller, "Über den Gebrauch des äussern Pluralis masc. in den südsemitischen Sprachen", in *Actes du sixième congrès international des orientalistes* II/1, Leide(n) 1885, pp. 443-464.
- A. Murtonen, *Broken plurals: origin and development of the system*, Leiden 1964 [rev.: *Arabica* 12 1965, 105-106 (A Boudot-Lamotte)].
- B. Paoli, "Réflexions sur le traitement des pluriels internes de l'arabe », *LLMA* 1, 2000, 43-56.
- K. Petráček, "Die Isomorphie im System der arabischen Pluralbildung", in *Symbolae Linguisticae in Honorem G. Kuryłowicz*, Krakow 1965, pp. 227-229.
- K. Plunkett, R.Ch. Nakisa, "A connectionist model of the Arabic plural system", *LCProc* 12, 1997, 807-836.
- R.R. Ratcliffe, *The broken plural problem in Arabic, Semitic and Afroasiatic: a solution based on the diachronic application of prosodic analysis. I-II* (Diss. Univ. Yale 1992), New Haven CT 1992 [DAI 54/1. 1993. 164-A].
- R. Ratcliffe, "The historical dynamics of the Arabic plural system: implications for the theory of morphology", in J. Lecarme, ed., *Research in Afroasiatic Grammar II* (CILTh 241), Amsterdam 2003, pp. 339-362.
- R.R. Ratcliffe, "Arabic broken plurals: arguments for a two-fold classification of morphology", in M. Eid, J. McCarthy, eds, *Perspectives on Arabic linguistics II* (CILT 63), Amsterdam 1990, pp. 94-119.
- R.R. Ratcliffe, "The broken plural system of Moroccan Arabic: diachronic and cognitive perspectives", in D.B. Parkinson, E. Benmamoun, eds, *Perspectives on Arabic linguistics XIII-XVI* (CILTh 230), Amsterdam 2002, pp. 87-109.
- D. Ravid, R. Farah, "Learning about noun plurals in early Palestinian Arabic", in *LPA*, pp. 187-206.
- F. Rundgren, "Die Konstruktion der arabischen Kardinalzahlen", *Orientalia Suecana* 17, 1968, 107-119.
- L. Souag, "Broken plurals - or infixes?: the case of the Algerian Arabic of Dellys", *EDNA* 6, 2002, 19-34.
- G. Troupeau, "Le schème de pluriel *fu'lān* en arabe classique", *GLECS* 7, 1954-1957, 65-66.
- Á. Vicente, "El plural mixto en los dialectos árabes", *EDNA* 5, 2000-2001, 291-302.
- M. Villa, "The Broken Plural in Arabic and South Semitic (Ethiopia, Eritrea, Yemen). History of the Research and Some Unsolved Questions", *Annali* 70, 2010, 133-190.
- R. Weipert, "Zur Bildung des gebrochenen Plurals im Modernen Hocharabisch", in *Fs. Diem*, pp. 99-109.

OLD (EPIGRAPHIC) SOUTH-ARABIC

(see Grammars and Comparative Treatments)

- J. Kuryłowicz, "Esquisse d'une théorie de l'apophonie en sémitique", *BSL* 53, 1957-58, 1-38 [8. Les pluriels brisés du sémitique méridional].
- P. Stein, *Untersuchungen zur Phonologie und Morphologie des Sabäischen* (Epigraphische Forschungen auf der Arabischen Halbinsel, 3), Rahden (Westf.) 2003 (2-3-1-4. "Die Numeri", pp. 71-82 ; "Der innere oder gebrochene Plural", pp. 73-81).

MODERN SOUTH-ARABIC

(see Grammars and Comparative Treatments)

- T.M. Johnstone, "The System of Enumeration in the South Arabian Languages", in R.L. Bidwell, G.R. Smith, ed., *Arabian and Islamic Studies: Articles Presented to R.B. Serjeant*, London/New York 1982, pp. 225-228.

ETHIOPIC

- H. Derembourg, *De pluralium linguae arabicae et aethiopicae formis generis origine et indole*, Göttingen 1867.
- A. Dolgopolsky, "Semitic nomina segolata in Ethiopic", in *P6ICESt*, pp. 71-90.
- S. Grébaud, "La forme nominale gueze d'abstraction *qūtālē*", *GLECS* 3, 1937-1940, 89-91.
- H.A. Hamaker, "Commentatio de pluralibus Arabum et Aethiopicum irregularibus qui a grammaticis vulgo fracti appellari solent", *Orientalia* (Amsterdam) 1, 1840, 1-63.
- Ol. Kapeliuk, "Is there a singulative and a paucal plural in Ethio-Semitic?", in *A7IHSK*, pp. 349-360.
- D.H. Müller, "Ueber den Gebrauch des äussern Pluralis masc. in den südsemitischen Sprachen", in *Actes du sixième congrès international des orientalistes II/1*, Leide(n) 1885, pp. 443-464.
- F.R. Palmer, "The 'Broken Plurals' of Tigrinya", *BSOAS* 17, 1955, 548-566.
- T. Tewelde, "Relationship among verb types and internal plurals in Eritrean Semitic", *QDLF* 19, 2009, 47-76.
- T. Tewelde, "The plural of Tigrinya", in *MKSKT*, pp. 252-265.
- T. Tewelde, "Plurals of Tigrinya and their Relationship", *AION* 63, 2003, 83-98.
- M. Villa, "The Broken Plural in Arabic and South Semitic (Ethiopia, Eritrea, Yemen). History of the Research and Some Unsolved Questions", *Annali* 70, 2010, 133-190.
- W. Vycichl, "Zur Herkunft der amharischen Plurale *b'et'ōčč-*, *g'et'ōčč-*, etc. Ihre Beziehungen zum Ursemitischen und Altägyptischen", *Aegyptus* 32, 1952, 491-494.
- W.-M., Hirut, "An autosegmental approach to Geez-based Amharic plural nouns", *EJLL* 8, 1998, 69-92.7