Observations on Proto-Semitic Vocalism

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0. Introduction

The Proto-Semitic vocalic inventory consisting of six members (\(a : ā, i : ī, u : ē\)) is universally recognized in Semitological literature (v., e. g., Kienast 2001:31, Lipiński 1997:152). It is usually thought to have "an exact reflection in that of Arabic whose full network of graphic symbols mirrors the phonemic position" (Moscati 1964:47), to reappear in a more or less unchanged form in such vocally conservative languages as Akkadian or Ugaritic and to undergo regular changes in Hebrew, Aramaic or Geez (ibid. 47-54). The correctness of this reconstruction is intuitively realized by most Semitists so that few of them attempt to analyse the exact comparative evidence behind it. Nevertheless, even a cursory examination of this evidence immediately reveals how problematic the traditional presentation is.

Few would deny that a proto-language reconstruction should be based on regular correspondences between the segments under comparison as they are inherited by the daughter languages. From this point of view, Semitic evidence suggests a clear-cut distinction between two types of vocalism: that of derivational and inflectional affixes on the one hand vs. that of root morphemes (nominal and verbal) on the other.

1. Vocalic elements of derivational and inflectional morphemes

Vocalic elements belonging to this group usually exhibit rather regular reflexes in all Semitic languages and there is no doubt that it is this systematic picture that makes Semitists so unanimously adhere to the standard reconstruction mentioned above (and warns them, incidentally, against postulating for PS additional vocalic entities, non-trivial accentual phenomena etc.). However, even within this segment of the PS vocalic reconstruction the picture is somewhat uneven as far as concrete vowels are concerned.

The evidence for each of the short vowels is quite unambiguous and can be easily illustrated by the following selection of examples:

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*a:  -a- in the base of the prefix conjugation D (Akk. u-parr̄is, Arb. yu-katīl, Hbr. yā-kattēl, Gez. ya-naggor); -a- in the first syllable of adjectival patterns *CaC̆̄2C- (Akk. par(ī)ʾ)-, Hbr. kāpīl < *kātīl-, Arb. ʿāṭīl-); -at- as the fem. marker in nouns (passim)

*i:  -i- as the thematic vowel of the prefix conjugation of derived stems (Akk. u-parr̄is, Arb. yu-katīl, Hbr. yā-kattēl < *yu-katīl, Gez. yā-naggor < *yu-naggar); -i as the case marker of gen. sg. (Arb. -i, Akk. -i)

*u:  -u- as the vowel of the prefixes of the prefix conjugation G and Š (Akk. yu-katīl-, Akk. u-parr̄is); -u- in the infinitive patterns of G and derived stems (Hbr. ṣatōl < *ṣuṭul-, Akk. /OA/ parr̄us-, Arb. taṭattul-); -u as the case marker of nom. sg. (Arb. -u, Akk. -u).

Evidence for the long *ā is also quite reliable:

-ā- in the infinitive patterns of G and derived stems (Akk. parās-, Hbr. kāṭōl < *kāṭāl-, Arb. ṣḥāṭāl; according to Fox 2003:182-3, the same base underlies the Gez. nomen agentis pattern katāl-ī); -ā- in the active participle pattern (Akk. pāris-, Arb. kāṭīl-, Hbr. kōṭēl < *kāṭīl-); -ā- in the nominal suffix *-ān- (passim).

The situation with *-ū and *-ī is more problematic as derivational and inflectional affixes containing these phonemes are uncommon on the deepest levels of PS reconstruction. Both are reliably reconstructed as plural markers of nouns (-ū for the nominative, -ī for the oblique) and well attested in verbal inflection (-ū and -ī for 3 pl. masc. and 2 sg. fem. of the prefix conjugation respectively). Since the attestation of these markers is practically universal, they should obviously be traced to the oldest reconstructible stage of PS. However, their rarity has often suggested various models of internal reconstruction presupposing their secondary nature in respect to the "primary" short vowels, either through an iconic "plurality lenkening" (Gelb 1969:48ff., especially 54-5, with references to earlier studies) or as a result of contraction of earlier *-VwV- and *-VyV- (Kuryłowicz 1972:39, Zaborski 1976). Derivational nominal patterns containing ī and ū can also be rarely traced back to PS. It is only for the former that at least one reliable example can be adduced, namely the takōl-pattern closely associated with D stem in Akkadian and Arabic. The adjectival patterns ʿāṭīl- and ḥāṭīl-, widespread throughout West Semitic, are practically unattested in Akkadian and, as widely recognized, probably represent a WS innovation (Fox 2003:123). As for ʿāṭil- and ḥāṭīl- substantives, they are so rare in Akkadian that it is hard to say whether such Akk. nouns of action as ṣagīmu 'bellowing' or salīmu 'friendship' (ibid. 188) have a common historical background with Arb. ʿāṭīl-masdras like šalīk 'braying' or barīk 'gleaming'.

To sum up, vocalic elements of derivational and inflectional morphemes do provide reliable evidence for the traditional reconstruction of the six PS vowels but it is not unlikely that the spread and relevance of *ī and especially *ū was rather limited on the earliest stage of PS.

It must be conceded that the formal stability of PS vocalic affixes does not always correlate without the stability of their functions. As far as most inflectional morphemes are concerned, both the form and the meaning have been preserved for millennia. The same holds true for a few highly productive derived nominal bases closely associated with the verbal paradigm (such as the active participle *kāṭīl- or the infinitives in -ā-). The situation with other derivational morphemes is different, however, since in most languages a marked trend to generalize one vocalic morpheme for a given function is observable. The synonymous morphemes, if not ousted completely, are heavily marginalized. That is why, as correctly stressed in Fox 2003:52, "it is rare that we find a derived noun with a common reconstructed root, pattern and meaning in several sufficiently distant Semitic languages". This tendency is especially prominent among adjectival patterns: almost every Semitic language has one pattern (rarely two or three) which is used for the great majority of adjectives. Thus, most of the adjectives in Aramaic, Arabic and Geez exhibit
the *kat(t)il- pattern which makes impossible their morphological comparison with cognate forms in Akkadian where this pattern is practically missing. But even between Akkadian and Hebrew a meaningful comparison is rarely possible in spite of the fact that both languages share *katal-*, *katil- and *katul- as the commonest adjectival patterns: while Hebrew exhibits a relatively even distribution of *katil- adjectives, the Akk. system is largely dominated by *katil-. In view of these considerations, PS "primary adjectives" like *laban- 'white', *ʔahir- 'other' (Fronzaroli 1963:124) or *kabid- 'heavy' ('which exists in a number of Semitic languages and so is reconstructed for PS", Fox 2003:61) can hardly be reconstructed at all.\(^2\) The situation with derived substantives is largely similar. Thus, *katil- is among the commonest patterns for nouns of action in Arabic but, as well known, is almost completely absent from Akkadian. Terms for fractions derived from the consonantal roots of the respective cardinal numbers are very instructive in this respect: while this type of denominal derivation is attested virtually throughout Semitic, concrete patterns preferred by particular languages are so divergent that it is practically impossible to detect what was the original PS model (cf. extensively Fox 2003:152). It seems, nevertheless, that the unification process did not affect substantives so drastically as adjectives so that a few remarkable cases of concrete deverbal nouns clearly going back to PS can still be discovered. Thus, the structural identity between such well attested nouns as Akk. zikru, Hbr. zēkār, Arīb. qikr- and Gez. zəkr 'mention; memory' is, in my opinion, rather unlikely to be an accidental coincidence of forms produced independently in each particular language. Rather, a PS lexeme *qikr- derived from the verbal root *qkr (or *-qkur-) should be postulated. The same holds true for *šušlu- 'cough' (Akk. sušalu, Syr. šašulā, šašulā, Arīb. sušal-, Tna. šošul) and a few other examples discussed in SED I XLVII-IX.

2. Vocalic elements of root morphemes

Vocalized reconstructions of PS nominal and verbal roots are personae non gratae in the present-day Semitic studies. Neither concrete vocalized protoforms, nor the theoretical background behind them can boast of serious attention from modern Semitists. The tradition to operate with vocalized protoforms—quite prominent in earlier studies like Hommel 1879 or Nöldeke 1910:109-178—was practically abandoned by the middle of the twentieth century and it was not before mid-sixties that fresh contributions to this fascinating problem started to reappear. This new period was opened by Pelio Fronzaroli's groundbreaking study "Sull'elemento vocalico del lessema in semitico" (1963) where the author argued convincingly in favour of the presence of an original non-motivated vocalism in primary nominal and verbal roots of Proto-Semitic. The essence of Fronzaroli's approach has been brilliantly formulated in one of his later studies: "In semitico comune ... sussisteva ancora un vocalismo immotivato nei nomi mono- e bisillabici e, probabilmente, negli aggettivi che sono alla base dei verbi di stato. Per i verbi d'azione, invece, la vocalizzazione originaria dell'imperativo e delle forme a prefissi trovava concorrenza in formazioni apofonetiche ... È evidente la legittimità di ristabilire per il semitico comune non soltanto schemi consonantici, ma temi nominali e verbali vocalizzati. La possibilità di farlo dipenderà dalla quantità e qualità del materiale ... Le difficoltà che possiamo incontrare in singoli casi, non devono spingerci a conservare un'immagine antica ed evanescente del semitico. La coincidenza delle vocali

2. I am aware that a comprehensive comparative study of WS (mostly Arabic and Hebrew) perfects and Akkadian statives of verbs of quality (as envisaged in Fronzaroli 1963:126ff.) could reveal a different picture since the respective forms are at least potentially comparable from the structural point of view. But even within this approach additional difficulties are not lacking. Thus, it should not be forgotten that the base of the suffix conjugation of Hebrew verbs of quality does not always coincide with that of the commonly used adjective from the same root (cf. zākēn 'he was old; old' as opposed to tāhēr 'he was clean' / tāhōr 'clean' and similar cases discussed in Kuryłowicz 1972:100).
tematiche in un gran numero di casi, é un fatto di più che mostra il convergere, risalendo nel tempo, verso una lingua comune. Il non registrarlo significherebbe rinunciare senza motivo ad un elemento comune evidente” (Fronzaroli 1964:11). The possibility of compiling a list of PS vocalized reconstructions is an obvious consequence of this theoretical claim. This task was carried out by Fronzaroli in a series of stimulating articles (1964, 1965a, 1965b, 1968, 1969, 1971) whose paramount importance has not been, unfortunately, fully realized by Semitists. It was only in 2003 that a new special study dealing extensively (though not exclusively) with PS vocalic reconstruction appeared (Fox 2003).

In the meantime, a few studies connected with the reconstruction of PS vocalism appeared in the former Soviet Union and Russia. The necessity of investigating the vocalism of PS nominal roots was obvious for I.M. Diakonoff, his major contribution to this question being the well-known article of 1970. Diakonoff’s later studies mostly dealt with broader Afroasiatic picture but here again vocalic reconstructions often played a prominent role. Other Russian studies in PS root vocalism are Belova 1993 (verbal roots), SED I and SED II by A. Militarev and L. Kogan (nominal roots), Frolova 2003 (verbal roots). A.M. Gazov-Ginzberg’s monovocalic theory (1965a, 1965b, 1974) is largely built on the evidence of PS primary nouns. Finally, A.B. Dolgopolovsky’s articles on the PS accentual system (1978, 1986) are closely connected with the vocalic reconstruction of PS nominal roots.

2.1. Primary nominal roots

My understanding of the specific nature of the vocalic shapes of Semitic primary nouns as opposed to the vocalic patterns of derived nouns mostly derives from Diakonoff’s observations on this subject (1970:453-5). In Diakonoff’s opinion, the most pertinent feature of primary nominal vocalism is its non-functional (non-motivated, arbitrary) character: “While the difference between the vocalism in the noun patterns /faɪl-, fiɪl-, faɪl-, faɪl- derived from verbal roots corresponds to a difference in their semantic and/or grammatical function, the difference in the vocalism of various primary nouns has no connection with their semantic.” (ibid. 454). Another characteristic feature of the vocalic shapes discussed by Diakonoff, namely their stability, is (as recognized by Diakonoff himself) of less importance. While it is true that inflectional and derivational forms produced from primary nouns are mostly built with suffixes (which have no influence on the original vocalism) rather than with apophonic changes or discontinuous morphemes (which normally lead to a full or partial replacement of the primitive vocalic shape), the latter procedure is attested throughout Semitic (in a limited degree, even in Akkadian) and should no doubt be projected to the PS level.

3. Although the terminological distinction between “pattern” and “shape” is borrowed from Buccellati 1996:72 (cf. Fox 2003:37).

4. Obviously enough, the “semantic and/or grammatical function” of some derivational patterns may be rather vague (thus, Diakonoff’s “product or result of the action” ascribed to segolate patterns subsume almost every abstract notion, cf. Fox 2003:107). If is clear, nevertheless, that for the majority of patterns a certain functional load can indeed be established (thus, for example, a derived noun with the /katil/ pattern in Akkadian is almost inevitably an adjective rather than a substantive etc.). Even for such widely used and semantically vague patterns as /kitil- and /katil- a careful synchronic investigation could probably provide a functional description more refined than that currently adopted (“Nomina actionis von eigentl. Verben, bisweilen mit Bedeutungsübergang ins Konkrete” and “Abstrakta von Adjektiven ... Bisweilen auch von Verbalwurzeln statt pirs” respectively in GAG 71-2). And conversely, even a theoretical possibility of motivation is hardly conceivable for primary nominal shapes: we will never be able to discover why the speakers of PS opted for /katil-, /kitil- and /katil- to denote dog (*kalb-), wolf (*ål̥b-) and ewe (*rašil-) respectively.
The arbitrary nature of the vocalic elements of Semitic primary nouns constitutes the principal methodological premise for reconstructing them as consonantal-vocalic morphemes (roots or bases). In the following sections of this article an attempt will be made to present the main achievements of this reconstruction as well as its principal limitations.

2.1.1. Reconstructible vocalic shapes

What follows is a list of vocalic shapes of primary nouns which can be reliably reconstructed for PS. Since no complete etymological dictionary of Semitic is currently available, examples illustrating this or that shape cannot in principle be exhaustive. The list is based on the main collections of vocalized nominal reconstructions known to me: names of body parts and animal names as reconstructed by A. Militarev and myself in SED I and SED II; Fronzaroli’s and Fox’s studies for other lexical fields (usually one of the latter two is quoted as a reference for a particular reconstruction). For each shape, all examples exhibiting unambiguous reflexes throughout Semitic have been adduced.5

A. Shapes with short vowels

- *kat-ː* *ʔab- 'father' (Fox 2003:72), *ʔah- 'brother' (ibid.), *ʔam-at- 'female slave' (ibid.), *dam- 'blood' (SED I No. 50), *ḥam- 'husband's father' (Fox 2003:73), *kaš-t- 'bow' (ibid.), *šan-at- 'year' (Fronzaroli 1965a:148), *ṣap-at- 'lip' (SED I No. 265).
- *kit-ː* *ʔil- 'god' (Fox 2003:73), *ʔaš(-āt)- 'fire' (ibid.), *ʔiš- 'tree' (ibid.), *miʔ-at- 'hundred' (ibid.), *tin- 'two' (ibid. 74).
- *kut-ː* *mut- 'man, husband' (ibid.).
- *katt-ː* *ʔamm-at- 'elbow, forearm' (SED I No. 6), *bakk- 'gnat' (ibid. II No. 58), *kapp- 'palm' (ibid. I No. 148), *raḳḳ- 'turtle' (ibid. II No. 190), *šabb- 'kind of lizard' (ibid. No. 221), *fall- 'dew' (Fox 2003:77).
- *kitt-ː* *rimm-at- 'kind of insect, worm' (SED II No. 191), *šinn- 'tooth' (ibid. I No. 249).
- *kutt-ː* *mahḥ- 'brain' (ibid. No. 187), *šurr- 'navel' (ibid. No. 254), *yull- 'yoke, ring' (v., e.g., KB 827-8).
- *katl-ː* *ʔalp- 'cattle' (SED II No. 4), *ʔamp- 'nose' (ibid. I No. 8), *ʔarḥ- 'cow, heifer' (ibid. II No. 12), *ʔarš- 'earth' (Fox 2003:74), *邝rš- 'bed' (ibid.), *ʔam- 'bone' (SED I No. 25), *ʔayn- 'eye' (ibid. No. 28), *ʔayyr- 'young' (young) donkey' (ibid. II No. 50), *ba ḥl- 'lord' (Fox 2003:75), *bayt- 'house' (ibid.), *ḥabl- 'rope' (ibid.), *ḥakl- 'field' (Fronzaroli 1969:26), *kabš- 'young ram' (SED II No. 114), *kalb- 'dog' (ibid. No. 115), *kamh- 'flour' (Fox 2003:77), *karn- 'horn' (SED I No. 168), *mašk- 'skin' (ibid. No. 190), *pa ʔm- 'foot, leg' (ibid. No. 207), *parṭ- 'non-digested food in the stomach' (ibid. No. 221), *šab- 'seven'

5. I am aware that for many (if not all) reconstructions proposed below a certain degree of ambiguity is almost inevitable at the present stage of research in comparative Semitics. Thus, I follow Fox 2003:52, 71 in assuming that the historical vocalism of MSA is so seriously understudied that no reliable conclusions can be based on the MSA evidence as far as the vocalism is concerned. Accordingly, MSA forms will be only rarely taken into consideration below. In some aspects, this restriction also applies to Syriac and other Aramaic dialects which are well known to exhibit a very unstable vocalism in closed unstressed syllables (here again cf. Fox 2003:71). Thus, for example, the shift *a > e* observable in examples like kešṭu 'bow' (< *kaš-t-*) or septā 'lip' (< *ṣapat-*) is so common that it is tempting to treat it as a nearly regular phonological development in spite of the fact that in a few other primary nouns *a* is preserved in the same position.

*kitl-: *ḥbr- (at)- 'bone of the arm, leg' (SED I No. 3), ḏiḥ- 'wolf, jackal' (ibid. II No. 72), *kil-: 'both' (Fox 2003:80), *riḥm- 'aurouchs' (SED II No. 186), *šidt- 'six' (Fox 2003:80), *ṭbn- 'straw' (ibid. 80), *tiš-: 'nine' (ibid.).

*šamn-: *ḥupn- 'ear' (SED I No. 4), *buṭm- 'pistachio' (Fronzaroli 1968:290), ḏút-n- 'millet' (id. 1969:28), *gu̇rn- 'threshing flour' (ibid. 26), *jurl-(at)- 'prepuce' (SED I No. 108), ḥupn- 'hollow of the hand' (ibid. No. 125), *mušy-(at-) 'evening' (Fronzaroli 1965a:147; v. ibid. 150 for a convincing justification of this reconstruction).

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B. Patterns with long vowels

*ktâl-: *katân- 'donkey mare' (SED II No. 19), *šamây- (Fronzaroli 1965a:144, preferable to *šamaʔ- in Fox 2003:83), *šalât- 'three' (Fox 2003:85; *šalâr- is perhaps more convincing in view of the evidence from ESA, MSA and Sargonic Akkadian).

*ktâl-: *dirâʕ- 'arm' (SED I No. 65), *ẖimār- 'donkey' (ibid. II No. 98), *kišâd- 'neck' (ibid. I No. 147), *ṯâhām(at)- 'sea' (Fox 2003:85).

*katîl-: *ḥasîs- 'part of ear' (SED I No. 126), *naḥîr- 'nostril' (ibid. No. 198).

*katûl-: *batûd- 'male of small cattle' (SED II No. 44), *batûl(at)- 'virgin, young woman' (Fox 2003:85).

*ktâlid-: *tamâniy- 'eight' (Fox 2003:87).

Additional evidence for long vowels in PS primary nouns comes from examples whose short vowel is unstable but the long one is well preserved and must be original:

*ā - *lVšān- 'tongue; language' (SED I No. 181).

*ī - *Wīš- 'male kid' (ibid. II No. 39), *jV(n)zîr- 'pig' (ibid. II No. 111), *jVrmîk- 'crane' (ibid. No. 91).

*ū - *sVnûn(Vwły)-at- 'swallow' (ibid. No. 197).

2.1.2. Regularity of vocalic correspondences

Examples adduced in the preceding section (some 120 cases) exhibit the same vocalic reflexes as those inflectional and derivational morphemes which have been discussed in the first part of this contribution. Is this evidence sufficient to conclude that the vocalism of nominal roots follows the same rules of correspondences?

The answer to this question is ambiguous. On the one hand, several dozens of regular examples can by no means result from chance coincidence. On the other hand, the number of reconstructible PS primary nouns goes far beyond one hundred. Fox's collection (2000:72-87) alone includes more than 250 examples and even this is certainly not exhaustive. What, then, happens with the remaining dozens of cases? Scores...
of primary nominal bases, while perfectly regular from the point of view of their consonantism, do not yield regular vocalic reflexes in the daughter languages, which makes impossible a coherent reconstruction of their original vocalic shapes. The seriousness of this challenge, I believe, has not been properly acknowledged by previous researches\(^{14}\) and it seems useful to discuss this problem at some length in the present context.

Most of the pertinent examples can be roughly subdivided in two groups: those affected by sporadic vocalic shifts on the one hand and those undergoing morphological rebuilding on the other.

A. Sporadic vocalic shifts

A sporadic vocalic shift is an unpredictable mutation of the original root-vowel. Since completely unconditioned shifts are not easy to imagine, various attempts have been made to explain such examples by the influence of neighbouring consonants. A most typical example of such a diachronically conditioned\(^{15}\) shift is the mutation of *i* and *a* into *u* in the vicinity of *p*, *b* and *m*. The importance of this phenomenon is duly recognized in Fox 2003:108-9. It may be responsible not only for such universally recognized cases as:

- Arb. *lubb-* vs. Akk. *libbu*, Hbr. *lēb* < *libb*- 'heart' (SED I No. 174)
- Akk. *šumu* vs. Hbr. *šēm* < *šim-* 'name' (Fox 2003:73)

but also for such otherwise enigmatic examples as:

- Gez. *ḥlf* < *ḥlp-*/*ḥlp*- vs. Arb. *ḥlf-*; Hbr. *ḥlāp* < *ḥlāp*- 'thousand' (Fox 2003:74)
- Gez. *ḥmmt* < *ḥmmat-*/*ḥmmat*- vs. Akk. *ammatu*, Hbr. *ḥmmā* 'cubit' < *ḥmm-at-* (SED I No. 6)
- Gez. *kŋf* < *kŋp-*/*kŋp*- vs. Arb. *kanaf-, Hbr. *kānāp* < *kanap-* 'wing' (ibid. I No. 145)

14. Thus, for example, only some 50 reconstructions are marked with minus (= "non-reconstructible") and zero ("more than one alternative protoforms") in Fox 2003:72-87 (as recognized by Fox on p. 69, the latter definition is often substantially identical to the former). In my opinion, this is over-optimistic. I do not see any unambiguous evidence behind such vocalic reconstructions as *ba šār*- 'beasts' (Fox 2003:84; Arb. *ba šār*- vs. Hbr. *ba šār* < *balšār*- vs. Gez. *ba šār* < *balšār*-), *dimš-at*- 'ear' (ibid.:80; Arb. *damš*- vs. Hbr. *dimšā*), *ḫšūn-at*- 'wheat' (ibid.; Akk. *šētu* vs. Hbr. *ḥšūtā*, *ḫšūn*- 'bosom' (ibid.; Hbr. *ḫšūn* < *ḫšūn*- vs. Arb. *ḫšēn*), *ḫšūr*- 'court' (ibid.:84; Arb. *ḥšūrat* vs. Hbr. *ḥāšēr* < *ḥšēt-, *sana*- 'thornbush' (ibid.:83; Hbr. *sēnā*< *sīlānay-, Akk. *sinā* vs. Arb. *sana*), *ṣikar- 'intoxicating drink' (ibid.:85; Akk. *ṣikara* vs. Arb. *sakar-*, *till-* 'mound' (ibid.:81; Arb. *tall-* vs. Hbr. *tēl* < *till-, Akk. *tilla*), all marked with "+" in Fox's study. Many further examples see below in the discussion of various types of irregularities.

15. For no Semitic language can we postulate a rule like "PS *i* and *a* shift to *u* before/after *m*, *p* and *b": such sequences are synchronically tolerated everywhere.
In Fox’s opinion (2003:108-9, 134), the labial influence in Geez can be distant: the hypothetic *u of the first syllable of words like körm (instead of karm) is thought to be conditioned by the labial in the third position.

In a number of cases u-forms are attested in more than one language or even predominate throughout Semitic:

- Akk. unnu, Arb. ṣumm-, Ugr. ṣum vs. Hbr. ṭēm < *ṭimm- 'mother' (Fox 2003:79)
- Hbr. hōmāš < *ḥumā- and Gez. ḥomm < *ḥumāt-/*hinā- vs. Akk. emsu < *ḥamā-, Mhr. ħamīt 'lower belly' (SED I No. 122)
- Arb. rūmah-, Hbr. rōmāḥ < *rumā-, Syr. rūmāḥ vs. Gez. ramḥ (also rāmḥ) 'lance' (Fox 2003:79)

As far as such examples are concerned, it is not always easy to say whether the u-colouring appeared independently in various languages or emerged already in PS (contrast *ṭupr- in Fronzaroli 1964:49 and *ṭipr- in Fox 2003:81).

However, for dozens of examples with irregular vocalic correspondences no conditioning factors have been proposed so far:

- Ḫrān- 'chest' (Akk. arānu, Ugr. ārān vs. Arb. ḫrān-, Hbr. ḥrān < *ḫrān-; *ḫrān- in Fox 2003:84)
- Ḫl- 'tamarisk' (Akk. āšlu, Arb. Ḫl- vs. Hbr. Ḫšāl < *Ḫl-; Fox 2003:78)
- Ḫnz- 'goat' (Arb. Ḫnz- vs. Hbr. Ḫš < *Ḫnz-; *Ḫnz- in Fronzaroli 1969:29)
- Ḫm- 'at- 'ear' (Arb. dam- vs. Hbr. dim ṭā, possibly Akk. Ḫmtu; SED I No. 51, *dim ṭ-at- in Fox 2003:80)
- Ḫṭ- 'arrow' (Akk. uṣṣu vs. Hbr. ḫēṣ < *ḥṭ- vs. Gez. ḫṣṣ; Fox 2003:78)
- Ḫnt- 'at- 'wheat' (Arb. Ḫnt- vs. Akk. uṭṭa; Ḫnt- in Fox 2003:80, Fronzaroli 1969:27; cf. ibid. 35: "La vocalizzazione in u dell'accadico, non spiegabile su base fonetica, andrà attribuita a diversità dialettale")
- ḪV(n)ẓr- 'pig' (Akk. Ḫẓruru, Ugr. Ḫẓruru, Hbr. (Qumran) Ḫwzyr vs. Arb. Ḫnhz̀r-; SED II No. 111)\(^{16}\)
- *ḪV(ḥ)l- 'all' (Akk. Ḫala, Mhr. kāl vs. Akk. kull-, Arb. kull-, Hbr. kōl < *kull-, Gez. Ḫ*l-lu, *ḫul- in Fox 2003:81)

\(^{16}\) The reasons behind -t- in *ḥaz(ẓ)īr- in Fronzaroli 1969:31 are not clear to me. In Fox 2003:87 this noun is adduced as non-reconstructible which may be somewhat hypercritical in view of the stable -t- in all the languages; an Akkadism in WS supposed in Fox 2003:47 is very unlikely, v. extensively SED II No. 111.

*zydVkd- 'skull' (Akk. kakkadu vs. Hbr. kodkōd < *kudkud-; SED I No. 159)

*lVšān- 'tongue' (Akk. lišānu, Arb. lišān-, Gez. lussān vs. Hbr. lāsōn; SED I No. 181, *lišān- in Fronzaroli 1964:45)


*rVgl- 'foot' (Arb. riǧ-, Ugr. riglu vs. Hbr. rāğāl, du. raglayim; SED I No. 228, *rigl- in Fox 2003:80)

*sVnay- 'thornbush' (Arb. sana", Syh. sanya vs. Akk. sinū, Hbr. sānū < *sinar-; *sany- in Fox 2003:83)

*sVnūn(Vwly)-at- 'swallow' (Akk. sinuntu vs. Arb. sunānum-; SED II No. 197)

*sVpl- 'bowl' (Akk. saplu, Ugr. saplu vs. Hbr. sēpāl < *sipl-, Arb. sifl-; *sapl-/*sipl- in Fox 2003:79)

*sVkar- 'intoxicating drink' (Akk. šikaru, Hbr. šēkār vs. Arb. sakar-, Syh. šakrā; *šikar- in Fronzaroli 1971:632, Fox 2003:85)


*tVll- 'hill' (Akk. ilū, illu, Hbr. tēl < *till- vs. Arb. tall-; *till- in Fox 2003:81, Fronzaroli 1968:287)

*tVll- 'shadow' (Arb. ilīl-, Akk. ilīli, Hbr. šēl < *till- vs. Jud. țullā; *till- in Fronzaroli 1965a:145)


Biconsonantal bases with long vowel can also exhibit vocalic variation:

*nūb- 'canine tooth' (Jud. nūbā, Tgr. nib vs. Arb. nāb-; *nayab- in Fronzaroli 1964:45)

*sūš- 'moth' (Akk. sāsu, Hbr. sās, Syh. sāsā vs. Syh. sūšūtā, Arb. sūs-, Har. sūs; SED II No. 198)


In the above examples sporadic vocalic changes take place within the limits of one syllabic structure (most often *CVCC-). Yet there is another important source of shape variation, namely changes of the syllabic structure of the shape.

The alternation *katal- ~ *katl- is illustrated by the following examples:

*bar(a)k- 'lightning' (Hbr. bārāk vs. Arb. bark-; *baraḵ- in Fox 2003:82 and Fronzaroli 1965a:146, with the following remark on p. 149: "in arabo barq si presenta come il nome d'azione di baraqa 'lameggiò")

*nam(a)l- 'ant' (Hbr. nāmalā vs. Arb. naml-; SED II No. 163, *namal- in Fox 2003:83, *naml(-at)- in Fronzaroli 1968:297)

*šah(a)r- 'down' (Hbr. šāhar < *šahr- vs. Arb. šahar-; *šahr- in Fronzaroli 1965a:147 with the following remark ibid. 149: "la vocalizzazione ricostruita è fondata sull'arabo; l'ebraico suggerirebbe šahr-")

*tam(a)r- 'palm-tree' (Hbr. tāmār vs. Arb. tamr-; *tamr- in Fronzaroli 1968:291).

For *katil- ~ *katl- the following cases can be considered:

*ham(i)š- 'five' (Akk. ḥamiš, Hbr. ḥāmēš vs. Arb. ḥams-; *ḥamiš- in Fox 2003:84)
Conditions triggering the change of syllabic structure remain obscure (as far as *katel- ~ *katl- is concerned, the prominence of examples with a sonorant as R2 and/or R3 is perhaps not accidental). The same holds true for the geographic distribution of this phenomenon (a certain predilection towards syncopated forms in Arabic may be observed).

Examples involving change in both vocalic quality and syllabic structure are not very numerous:

Arb. hanak- vs. Hbr. *hēk < *hînk-, Syr. *hēnkā 'palate' (SED I No. 124)
Arb. madar- vs. Gez. mədr < *madr- or *mədr-, Hbr. mədār < *madr- 'clod of earth' (*mədr- in Fronzaroli 1969:24)

B. Morphological rebuilding

Quite often the vocalic shapes attested in various languages are so divergent that establishing the original one is not only difficult but practically impossible. "Rideterminazione morfologica" is discussed in a special section of the introductory chapter of Fronzaroli's work (1964:12). Fox 2003 is also attentive to this problem: for some 25 PS nominal roots he believes that the original vocalism is non-reconstructible because of heavy alternations in all or most languages ("some of the words may have undergone a complete pattern replacement, rather than just a phonological development, and no reconstruction is possible", Fox 2003:70).

The following selection of examples may be sufficient to illustrate the phenomenon under discussion:

Ak. *ilišu, Hbr. *ilīšā, Syr. *ušlakšā, *ušlāšā, Arb. *ulak(-at)-, Gez. *ulakā 'leech' (SED II No. 32; *ulak(-at)- in Fronzaroli 1968:297 (cf. ibid. 303: "il tema attestato in accadico differisce da quello delle lingue occidentali; in ebraico questo è rideterminato sul tema aggettivale 1a2i3-")
Ak. unīšu, Arb. *unāk- 'female kid' (SED II No. 34)
Akk. aššašu, Hbr. ūāš (\(< *āšt\)-, Arb. ūūṭār- 'moth' (SED II No. 45)
Hbr. ūāšl, Jud. ūōš, Gez. ū𝑤āl, Tgr. ūšlu 'child, foal' (ibid. No. 47)
Arb. bāšr-, Hbr. pāšr < *būšār-, Gez. bāšr < *būšār- or even < *bāšr- 'household animal' (ibid. No. 53); *bāšr- in Fox 2003:84, Fronzaroli 1969:29
Hbr. dābbōrā (< *d♭bār̥-, Jud. dabbartā, Syr. dabbērā, Arb. dabbīr-, Amh. ḏib'ara 'kind of insect' (SED II No. 66)
Akk. dumāmumu, Arb. dimm-at-, Gez. ñummat 'a feline' (ibid. No. 70)
Akk. zǔbhu, Hbr. zǔbāh, Jud. dībāhā, Syr. dabbēbāhā, Arb. dabbīb-, Amh. zōm, Mhr. dabbēbī 'fly' (ibid. No. 73); *dūbb- in Fronzaroli 1968:296 (reflected unambiguously in Akk. only, rightly considered non-reconstructible in Fox 2003:82)
Akk. āribu, āribu, Hbr. ūrēb (< *yārib-), Jud. ūrbē, Arb. ūrāb-, Mhr. yārēby 'crow' (ibid. No. 89); *yārib- in Fronzaroli 1968:295, 302 and Fox 2003:85 (cf. ibid. 33, 232)1
Akk. irgīlu, Hbr. ḥargōl (< *hargāl- or *hargul-), Syr. ḥargālā, Arb. ḥarrālat- 'kind of locust' (ibid. No. 103)
Hbr. ḥāṣer (< *ḥaṭir-), Arb. ḥaḍārat-, Arb. ḥūḍār-, Jud. ḥuṭrā 'yard, enclosure' (*ḥaṭir- in Fox 2003:84)
Akk. ḥūṛāp (< *ḥurg-), Arb. ḥārīf- 'autumn, winter' (rightly treated as non-reconstructible in Fox 2003:84)
Akk. ḥūṭtimmu, Hbr. hōṭām (< *ḥuṭam-), Jud. ḥutāmā, Arb. ḥatm- 'nose' (SED I No. 139)
Akk. labā, Hbr. lābī (\(\), Arb. lubā,t-, labu/ Şubat- 'lion(ess)' (ibid. II No. 144); *labi?- in Fronzaroli 1968:293 (Arb. -u- is explained as due to contamination with dabu\(\) 'hyena' and/or the influence of the labial ibid. 301; -i in the Hbr. form, going back to *i rather than *i, is not discussed)
Akk. mīnu, Syr. mōnīnā, Arb. minanat-, manūnat- 'kind of insect' (SED II No. 152)
Akk. peršašt (per/sašt, paršašt, paršašt, paršašt), Ebl. pur-ha-sám, Hbr. purʃɔš (< *parʃɔt- or *parʃuṭ-), Syr. purta/nā, Arb. parṣuṭ- 'lea' (ibid. No. 185); *parṣuṭ- in Fronzaroli 1968:297 which can (but need not) match the Hbr. form only (rightly considered non-reconstructible in Fox 2003:87)
Hbr. šūpūrān, Syr. šappāpā, Arb. siff-, suff-, Tgr. sif 'kind of snake, worm' (SED II No. 207)
Hbr. šār̥ā (\(< *śvr̥-at\)-), Arb. ša/ʃr̥- 'barley', Gez. šā ṣā 'herb, herbage, straw', Jib. šā/ʃr̥ 'dry grass, straw'; *śu/su/ʃu- (at-) in Fronzaroli 1969:27 with the following comment ibid. 34; "in arabo il sostantivo appare rideterminato sul frequente tema aggettivale 1a\(2\)-; l'ebraico e l'aramaico permettono la ricostruzione di un tema 1a\(2\)-, oppure 1a\(2\)- (rightly considered non-reconstructible in Fox 2003:85)
Akk. šumēlu, Hbr. šmōm/\(\,\), Arb. šimāl- 'left hand, side' (SED I No. 264); reconstructed as *šimāl- in Fox 2003:87 which, in my opinion, is rather hard to reconcile with the Hbr. (probably also Akk.) evidence
Hbr. pbh. šābāšt, Arb. dabu\(\), dab\(\)-, Gez. šb\(\) 'hyena' (SED II No. 220); reconstructed as *šābu\(\)- in Fronzaroli 1968:293 and Fox 2003:85 (which regularly corresponds to one of the Arb. by-forms only)18

17. Both authors believe that the Arb. form exhibits an analogical adjustment to the kuāl- pattern supposed to be typical of Arabic bird names; Jud. ūrbē and related forms throughout Arm. are not taken in consideration in spite of the fact that they obviously do not go back to *yārib- but are relatively close to Arb. ūrāb- (a borrowing from Hebrew tentatively suggested by Fox remains to be sustained).
18. The Hbr. pbh. form adduced as šabdā\(\)- by Fronzaroli appears as šabdā\(\) in both Ja. 1257 and Levy WTM IV 166. The Biblical evidence is, as well known, complicated. The only unambiguous attestation is Sir 13:18 (šb\(\)-) which does not help to establish whether the second vowel is ū or ō. The form šabdōhm adduced by Fox (which of course does correspond to the reconstructed *ša(h)ūm-) is attested only as (part of) a toponym which seriously reduces its relevance for comparative purposes. At the same time, šabdā\(\) in Je 12:9 is not unlikely to mean 'hyena' but the context is extremely complicated (cf. Barr 1968:128).
2.1.3. In search of more regularity: some alternative models of reconstruction

It is tempting to suppose that discrepancies in the root vocalism can at least sometimes be only apparent and explainable by hitherto undiscovered rules of correspondences. In this connection, the names of two Semitists deserve special mention: I.M. Diakonoff and A.B. Dolgopolovsky.

As already stated above, Diakonoff's main contribution to our topic is his 1970 article "Problems of Root Structure in Proto-Semitic". Diakonoff's reconstruction of PS root vocalism reposes on three postulates briefly formulated on p. 456 of his study:

- long vowels are absent in the primary nominal root morphemes
- in the sub-system of PS primary nominal root morphemes, $u$ is an allophone of the $i$-phoneme conditioned by the contact with the labials $b, p, m$ (sometimes also with $g, k, k$ and in a few cases with the glottal stop)
- in segolate bases (*CVC2C3-)$,$ either C2 or C3 must be $i, y, w, l, r, m, n$ and if it is C2 that is a phoneme of this group, than $V$ is $a$.$\,$

As a result, a bivocalic system emerges where $*a$ is opposed to $*e$ and several syllabic sonants ($m, n, l$ etc.) are introduced. The validity of Diakonoff's theory and its import to the progress of the PS vocalic reconstruction deserve to be studied at some length.

As far as Diakonoff's first claim is concerned, it is no doubt true that PS primary nouns with long vowels are uncommon. It may be pointed out, however, that most of the hypothetic examples discussed (and refuted) by Diakonoff on pp. 463-4 of his study are not sufficiently representative. Thus, $*bāb$ - 'door' is an obvious Kulturwort borrowed from Akkadian into Aramaic and then to Arabic; $*lāh$ - 'god' and $*lunās$ - 'mankind' are Central Semitic formations which hardly bear on the PS picture; a PS reconstruction $*dām$ - 'blood' based on the hypothetic variant with a long $ā$ in Akkadian has hardly been ever considered in Semitological literature. Diakonoff presents very few truly pertinent cases (like $*tūm$ - 'garlic' or $*māy$ - 'water') and explains them by a "rhythmical Analogiebildung" after the more usual triconsonantal patterns — an explanation which is rather hard to prove or disprove. The same approach is of course conceivable for a few other *CVC- examples mentioned above ($*gūl$ - 'sinew' or $*nūb(-at)$ - 'bee') and an alternative explanation (contraction of sequences $*-Vw(y)(V)$-) also presents itself (Fox 2003:38, 54-55). However, none of the two explanations is possible for true triconsonantal examples like $*tātān$ - 'donkey mare', $*talāt$ - 'three', $*ḥīmār$ - 'donkey', $*kīsād$ - 'neck', $*ṭihām(-at)$ - 'sea', $*nāḥīr$ - 'nose', $*Nūqīt$ - 'male kid', $*ḥV(n)ẓīr$ - 'pig' or $*ṭāmānīy$ - 'eight'. Such examples are certainly not very numerous but to leave them entirely out of consideration (as actually done by Diakonoff) means to oversimplify the PS picture.
The reasons behind Diakonoff's second claim are also rather transparent. That bases with $u$-vocalism are uncommon among PS primary nouns is a widely acknowledged fact and it is equally certain that in most of such cases one of the consonant is a labial (thus, among 12 examples with stable $u$-vocalism adduced above the only exceptions are *šurr- 'navel', *ḫuḏn- 'ear', *ḏuḏn- 'millet', *ḫull- 'yoke, ring', and *yurtles (at)- 'prepuce'). It is indeed tempting to suppose that at some earlier stage of the development of PS *$u$ did not exist at all as an independent phonemic entity. The main problem with Diakonoff's approach is that examples like *muhḩ- 'brain' or *mut- 'man' — where $u$, even if eventually due to the labial influence, is stable throughout Semitic — are either left out of consideration, or mixed up with a highly heterogeneous group of examples exhibiting vacillation between $u$ and $i$ (sometimes also $a$) in various languages. 19 It is therefore not unexpected that Diakonoff's claim according to which "the labialized and non-labialized forms can be predicted, not with a hundred per cent certainty, but at any rate with a high degree of probability" (p. 464) does not look well-founded. Most of the correspondence rules adduced in this section of Diakonoff's article are either insufficiently proved or contradictory. Thus, for example, the correspondence PS *$b$ * $b$, *bikr- 'firstborn' and *bin- 'son' whereas *bu-$r$at- 'pit' (not mentioned by Diakonoff) and sunbulat- 'ear of corn' (allegedly "a borrowing from some dialect of the ancient settled population") overtly contradict it. When the disagreement between the pertinent forms (mostly those of Hebrew and Aramaic) is too conspicuous, it is, according to Diakonoff, to be "obviously explained by the fact that the Hebrew language was formed by the superposition of an Amorite-Sutean nomadic dialect (or dialects) over a strong affined substratum of the local language of the settled Canaanites" (cf. "this phenomenon reflects the historically attested mixed ethnic origin of the Arameans" on p. 465). Needless to say, cultural-historical arguments of this kind are rather unwelcome in a study on historical phonology (independently of their actual validity). We may conclude that Diakonoff is certainly right that the rarity of PS primary nouns with $u$-vocalism may point to the absence of $u$ from the earliest vocalic inventory of PS. He did not succeed, however, to reveal any systematic rules allowing to trace it back to the hypothetic PS *$. The reconstruction of *$k$*, *$g$*, *$k$* and *$h$*, obviously introduced by Diakonoff in order to justify his claim, is also unfounded (for each of the hypothetic phonemes only one or two examples are adduced).

There are some reasons behind Diakonoff's third claim, too. Among 29 nouns reconstructed as *$k$* -above in 2.1.1 no less than 26 comply with Diakonoff's third rule, their second or third consonant being a sonorant (the exceptions are *kabs- 'young ram', *mašk- 'skin' and *šab?- 'seven'; only the latter is truly pan-Semitic). A certain connection between stable $a$-vocalism and the phonetic nature of the two last consonants in segolate nouns is thus almost inescapable (for a similar hypothesis advanced by W. von Soden v. GAG 71, 12). One has to concede that among 14 reliable *kitl- and *kutl- examples 11 also have a sonorant as one of the two last radicals, which, incidentally, does not prevent *$di?$- 'wolf, jackal', *$k$t?- 'both' and *ri?$- aurochs' from displaying a very stable $i$-vocalism (instead of $a$- predicted by Diakonoff). 20

19. Thus, Sem. terms for firstborn are very divergent and probably not reducible to a single "segolate" prototype (as partly recognized by Diakonoff himself); the reflexes of *bi?$- and *bu?$- 'well, pit' coexist in so many languages that doublet proto-forms should be postulated already for PS (as reasonably done in Fronzolini 1971:632); Akk. *kuru 'smoke' and similar forms in other languages are very likely deverbal derivatives rather than reflexes of a PS primary noun; the extreme rarity of both *binu and *bunu 'son' in Akk. seriously undermines the relevance of this example; *-i- in Hbr. šīḇōlāt may be a regular reflex of *$u$ in this position (cf. kippōd 'hedgehog' and sippōr 'bird', both likely $<*$kutul-).

20. As one can infer from Diakonoff 1970:467, both groups of examples which do not fit his theory should be automatically considered as originally deverbal. This reasoning is clearly circular.
To sum up, while it is hard to deny the highly innovative impact of Diakonoff's contribution (for a recent appraisal cf. del Olmo Lete 2003:34ff., 49ff.), his theory as a whole cannot be regarded as a fully coherent system (which is at least partly due to the rather restricted corpus of evidence under investigation).

A.B. Dolgopolsky's views on the vocalic reconstruction of PS primary nouns have been expounded in two special studies (1978, 1986) and summarized in a recent monograph (1999). According to Dolgopolsky, various types of vocalic irregularities in primary nominal bases can be plausibly explained if the traditional understanding of the PS accent as fully determined by the syllabic structure and therefore non-phonemic is abandoned in favour of an unbound and phonologically relevant stress. In my review of Dolgopolsky 1999 (Kogan 2004) I tried to outline briefly the most interesting aspects of Dolgopolsky's theory and to draw attention to some of its inconsistencies. My generally negative conclusion does not undermine the extremely stimulating and useful nature of some aspects of Dolgopolsky's theory. Thus, the vocalic discrepancy between Akk. zišnu 'beard' and its WS cognates (Arb. ḍakān-, Hbr. zākān) was a riddle for several generations of scholars. It was treated as an example of "rideterminazione morfologica" in Fronzaroli 1964:12 whereas ibid.:16 the same example (together with bišru vs. PS *bašar- 'meat' and zibbatu vs. PS *danab- 'tail') was thought to be possibly due to both "diversità dialettali" and "certa preferenza per la vocale i" in Akkadian (the influence of the following sibilant suggested by Brockelmann in GVG 1 202 was rightly rejected as unconvincing by Fronzaroli). It was an important merit of Dolgopolsky 1978 to demonstrate that the correspondence PS *katal- vs. Akk. kitl- is practically regular among primary nouns (cf. now Fox 2003:110, 126, 158; I tend to agree with Fox that Dolgopolsky's accentual explanation of this phenomenon is not sufficiently founded).

2.2. Primary verbal roots

The semantically and grammatically non-motivated nature of the vocalic element of the monosyllabic base of the prefix conjugation (-CC-VC-) and, consequently, its diachronic priority is widely recognized in Semitological literature. According to J. Kuryłowicz, "it would be erroneous to consider the root of the Sem. verb as a merely consonantal skeleton. Within the primary conjugation ... there is only one paradigm whose vocalism (of R2) is basic or unpredictable ... The vowel of R2 of the "imperf." being u, the verbal root is k(u)tub and not simply k-t-b" (1972:34; cf. already id. 1961:15, 17). Furthermore, "... to look for a morphological function of the root vowel (the vowel of R2) in the primary verb must be considered a misunderstanding. To look for a constant association between the vocalism of R2 and the fundamental meaning of non-motivated (primary) verbs is a methodological derailment tantamount to the old theory of Lautsymbolik" (1972:43).

Kuryłowicz's approach was not accepted unanimously but, to my knowledge, no coherent objection against it has been advanced so far. An exclusively consonantal nature of verbal roots was repeatedly defended by such a prominent advocate of consonantal-vocalic roots of primary nouns as I.M. Diakonoff (e.g., 1988:47, 1991:23-4) but, in my view, without any substantial argument. According to Fox 2003:45,
the fact that the thematic vowel of *-CCVC- is not shared by other forms of prefix conjugation (including those of derived stems) speaks against treating it as the root-vowel. Fox’s observation is certainly correct and, in general, it is hard to deny that the degree of stability of the vocalic element of verbal roots is inferior to that of primary nominal roots (accordingly, from a practical point of view it may indeed be more convenient to describe the PS root for stealing as *-šrk rather than *-šrik-, cf. Fronzaroli 1973:5). However, as we have seen above in connection with primary nouns, it is not the stability of the root vocalism but rather its non-motivated nature that is decisive for treating it as part of the root. Now, since the arbitrary character of the vowel of *-CCVC- is not in doubt, there is hardly any difference in this respect between primary nominal and verbal roots in Semitic.

The possibility of reconstructing the vocalism of concrete verbal roots of Proto-Semitic is a natural consequence of the recognition of its original and non-motivated nature. Several scholars adhering to this concept compiled extensive lists of PS verbal roots with the thematic vowel as their integral part. A critical analysis of these collections has been recently proposed in T. Frolova’s unpublished MA thesis (2001) where an independent lexical research on the topic has also been undertaken (summarized in Frolova 2003). The description below greatly benefited from Frolova’s studies as well as from oral discussions with her (even if our opinions on particular questions are sometimes divergent). I am deeply grateful to Ms. Frolova for this opportunity.


Although Fronzaroli is aware that only an agreement between the Akkadian and Arabic data is truly relevant for establishing the thematic vowel in the proto-language (”non sarà possibile ristabile la vocale di un tema verbale se non dal confronto di arabo ed accadico, le sole due lingue in cui la vocale si è conservata”, 1964:11), some of his reconstructions appear to be based on rather unreliable evidence in at least one of the languages.

In some cases the thematic vowels in Akkadian and Arabic do not agree which makes the PS reconstruction more or less arbitrary (as often recognized by the author himself): *-lpiš- ‘raccogliere insieme’ (1971:629; Akk. īpuš, cf. ibid. 638), *-kpur- ‘strofinare’ (1965b:265; Arb. kfr i, cf. ibid. 268), *-kšip- ‘coprire’ (1969:25; Akk. kātāpu alu, cf. ibid. 1969:33), *-ktur- ‘fumare’ (1971:636; Arb. kfr i, Lane 2486), *-prur- ‘fuggire (come in volo)’ (1968:294; Arb. fr i, cf. ibid. 302). Similarly, if one of the
languages yields vocalic doublets, ascribing the priority to one of the variants for the only reason that it coincides with the vocalism observed in the other language is hardly warranted. This is the case of *-hruš- 'are' (1969:26; Akk. ırıš, ırus, CAD E 285; Arb. i, u, BK 1 403, cf. 1969:33), *-kbiš- 'seppellire' (1965b:263; Arb. i, u, BK 2 658) and *-nḫur- 'promettere in voto' (1965b:262; Arb. i, u, BK 2 1231).

Some of Fronzaroli’s examples are doubtful for phonological and/or semantic reasons and sometimes these deficiencies are combined with those outlined above: *-htub- ‘bacchiare’ (1969:26; the semantic difference between Arb. ḫbti ‘to bit’ and Akk. ḫabātu ‘to rob’ is considerable whereas the consonantal correspondence is regular; besides, as recognized ibid. 33, the thematic vowel of the Akk. verb is u), *-kšip- ‘tagliare’ (ibid.:265; Akk. kasšāpu ‘fare un sortilegio’ is hard to reconcile semantically with Arb. ksf ‘to break, cut’; v. below for an alternative Akk. congate with -u-); *-nḫuk- ‘morderere’ (1971:631; metathesis and semantic shift in Arb.), *-plšš- ‘scampare’ (1965b:263; based on the equation of Arb. ilt with Akk. balātu, with two phonological irregularities; besides, as recognized on p. 267, the Akk. verb is not attested with the thematic vowel -i-); *-rmš- ‘muoversi strisciando’ (1968:295; Arb. rmš ‘to throw’ vs. Akk. namāšu ‘to move’ is not regular either semantically or phonologically; the Arb. verb is attested with both u and i, BK 1 924); *-sprr- ‘cinguettare’ (1968:295; Arb. sfr vs. Akk. šābāru is phonologically irregular whereas the thematic vowel of the Akk. verb is u, cf. ibid. 302).

Finally, in some cases no cognate is altogether present in one of the two languages: *-bruk- ‘inginocchiarsi’ (1965b:264; only Arb.), *-dūk- ‘piertere’ (ibid.:632; no form of prefix conjugation of Akk. dākāku is attested), *-dḫuk- id. (1971:633; Akk. not attested in G), *-dršš- ‘scorrere liberamente’ (1965a:147; as recognized by the author on p. 150, only Arb., where, moreover, not only i but also u is attested), *-ḫlu- ‘sciogliere’ (1965b:265; only Arb.), *-ḫšur- ‘legare’ (1969:26; only Akk.), *-ṃšuk- ‘scuoiare’ (1964:41; only Arb.), *-pršš- ‘stendere’ (1968:295; only Arb.), *-šrub- ‘sorreggiare’ (1971:630; only Arb. where the thematic vowel is, moreover, a; cf. ibid. 638), *-šurš- ‘ascendere, come appliicare il fuoco’ (1971:635; only Akk.).

The rather high number of fully or partly unreliable examples does not contribute to justify Fronzaroli’s principal claim (‘la coincidenza delle vocali tematiche in un gran numero di casi’, 1964:11), especially since most cases of disagreement are left without explanation. At the same time, one can hardly overestimate the paramount relevance of Fronzaroli’s study which still remains the only substantial collection of explicitly formulated PS reconstructions of consonantal-vocalic verbal roots.

The next contribution to our topic appeared only one year after Fronzaroli’s 1963 article. J. Aro’s monograph (Aro 1964) deals primarily with vocalic only classes of verbs in individual Semitic languages but on pp. 152ff. much attention is spent to the common Semitic picture. The main position under comparison of Aro’s study (the thematic vowel of the short form of prefix conjugation) does not differ from that of Fronzaroli’s but an important innovation of treating separately active-transitive and stative verbs is introduced (as convincingly demonstrated by Aro, the two segments of the verbal system in Semitic are quite different as far as the preservation of the original root-vowel is concerned).

Reliable examples of PS transitive u-verbs are sometimes identical to those adduced by Fronzaroli (*-dḵur-; *-ḏuk-), but many additional examples have been proposed: *-ḫur- ‘to hire’, *-ḫuḏ- ‘to take’.

25. Unless Akk. nažāru ‘to curse’ is to be compared to Arb. nzr ‘presser, talonner qn., regarder et traiter qn. avec dédain’ (BK 2 1235), with u as the thematic vowel according to LA 5 203.

26. Unlike Fronzaroli, Aro does not explicitly propose vocalic reconstructions like *-ḏkur- or *-šrik- but restricts himself to a mere comparison between the pertinent Akk. and Arb. forms. The same applies to the studies by Kuryłowicz, Belova and Frolova discussed below. In the present contribution, Fronzaroli’s way of presenting the evidence will be extrapolated on the examples proposed by these scholars (so, Aro’s “Akk. ʾšku – Arb. ʾadḵunu” will be conventionally described as “PS *-ḏkur-” etc.). This procedure is adopted for the sake of brevity and in view of the essentially reconstructive nature of my presentation. It
As partially recognized by the author, in a few examples from this section the vocalism is vacillating between u and i in Arb. and/or Akk.: Arb. ḫrēš 'to plow' (BK 1 403) and Akk. ʾiriš, īruš (CAD E 285), Arb. ḥfr 'to split, cut; to begin' (BK 2 610), Arb. ṣfr 'to disclose, reveal' (BK 2 593), Arb. šṛṭ 'to incise' (BK 1 1215). As already stated above, the evidence provided by such examples is at best ambiguous, to say nothing of such overtly contradictory cases as Akk. ispūn vs. Arb. ʾasfinu 'to level off'. A few other cases are more or less problematic for phonological and/or semantic reasons. Thus, the meaning of Akk. ṭakāšu is disputed;²⁷ the semantic relationship between Akk. našābu 'to suck' and Arb. nḏb 'dwell' are clearly related but the diathesis is different (v. above).

For transitive i-verbs 10 reliable examples have been adduced: *-ḫṣir- 'to shout in', *-ḥṣir- 'to dig', *-ḫšiš- 'to cut',²⁸ *-kšši- 'to tear', *-pšid- 'to look for', *-pṣid- 'to cut', *-ptil- 'to plait', *-šriš-'to steal', *-ššir-'to break' (if Akk. šarāmu rather than šarrāmu is compared, the latter being an alu verb, CAD Š2 49). A few other examples adduced in this section by Aro are unreliable as Arb. exhibits both i and u (as often recognized by Aro himself): *ḫmš 'to cut, incise', *ḥbr 'to bury', *ṛps 'to tear', *snḥ 'to tie', *šmd id. The same is true about *dṛṣ (Arb. dṛṣ is an u verb according to both BK 1 688 and Lane 870) and a few other examples more or less doubtful for various reasons (thus, Arb. nṯr does not mean 'to give' but 'sentir mauvais, puer', BK 2 1194; Akk. malāku 'to advice' vs. Arb. mlk 'to reign, to possess' is semantically problematic; Arb. ṭmr vs. Akk. temērū is phonologically irregular).

Aro is not unattentive to examples of disagreement between Akkadian and Arabic but truly reliable examples of this type are few in his study and no explanation for the vocalic difference is proposed. Thus, only 4 deviating examples with Arb. i vs. Akk. u adduced by Arb. are convincing: *ḥṣid 'to reap' (with both i and u in Arb.), *ḫbs 'to tread', *ḫṭp 'to pluck', *špk (with both i and u in Arb. according to Lane 1374); the existence of Akk. kāḇālu 'to bind' (compared by Arb. to Arb. kbl) is disputed (v. CAD K 4, 8). Several examples of the reverse picture (Arb. u vs. Akk. i) are also adduced but few of them are reliable (*ḥbr 'to cross', *ḵms 'to collect', *ṅks 'to break', *ṣkr 'to dam', *ḥbr 'to break'). The remaining cases are problematic: Arb. lbn 'to make bricks' does not seem to be attested in the basic stem; Akk. ṭuṭāku 'bilden' vs. Arb. štik 'brechen' is problematic; Akk. Ṿaṣqū is semantically problematic; Arb. ṣaṣqū means 'to erect, pile up' (CAD R 184) rather than 'zusammenfügen' and may be a WS borrowing; for Akk. raḥāšu v. fn. 54.

should by no means be understood as an attempt to ascribe such reconstructions to the respective authors, the more so since at least Aro was apparently rather sceptical about concrete lexical reconstructions (1964:153).

²⁷. Ausbeulken' proposed in AHw. 151 is well comparable to Arb. ḏks 'entasser' (BK 1 719) but if the Akk. verb means 'to pierce' as suggested in CAD D 34 (with discussion; cf. 'to press in' in CDA 53), they are hardly compatible.

²⁸. But note that Arb. kṣr 'pincer qn. (en serrant la chair avec le bout des doigts)' (BK 2 712) is semantically closer to Akk. karāṣu 'to pinch off' (CAD K 209) than Arb. kṣr 'couper' (BK 2 713). The former is an u-verb, however.

LEONID KOGAN

148
As far as intransitive verbs are concerned, reliable examples of coincidences adduced by Aro are sporadic (*-rbiš- 'to lie down' or *-ṣḥul- 'to cough'), in most cases no agreement between Akkadian and Arabic being observable.

In Aro's view, both *-ktul- and *-ktul- classes of fientive-transitive verbs should be reconstructed as PS even if the vocalism of concrete lexical pairs is sometimes divergent (1964:155-7). Conversely, no clear picture can be obtained for stative verbs, where the WS and Akk. systems are too different to be compared (ibid. 159, 161-2).

The existence of non-motivated verbal root vocalism is one of the key positions in J. Kuryłowicz's understanding of the PS verbal system (1972:34, 43, 54ff.). In support of his theory (briefly outlined above in the beginning of this section), Kuryłowicz adduced a few Arabic-Akkadian cognate pairs with identical vocalism.

For PS u-verbs, some 17 reliable examples are proposed (1972:54), most of them identical to those suggested by Fronzaroli and Aro (*-gur-, *-ḥud-, *-ḥul-, *-k kur-, *-ksus-, *-ktum-, *-ḥšet-, *-mdud-, *-nšur-, *-ntum-, *-gum-, *-ṣṭur-, *-ṣrud-). Additional cases include *-yreb- 'to enter', *-ršk- 'to tie', *-ṣḥul- 'to draw' and *-ṣkul- 'to weigh'. Problematic examples in Kuryłowicz's presentation are not lacking.

Thus, Akk. barāmu A (alul) means 'to seal' (CAD B 101) and has no obvious connection with Arb. brm 'to twist' whereas the semantically regular cognate of the latter (barāmu B 'to be multicolored') is known only in the stative (CAD B 103); Akk. ḥālālu 'to perforate' is unlikely to be attested (not in AHw. or CAD); the relationship between Akk. magāru 'to agree' (hardly 'to desire') vs. Arb. 'to be thirsty' is not self-evident semantically; Arb. fīs and nsr are attested with both i and u as the thematic vowel (v. references in Frolova 2003:87); Akk. alālu means 'to hang' rather than 'to bind' (CAD A1 329) whereas Arb. yll 'charger qn. de chaînes' (BK 2 487) is almost certainly denominative from yull- < PS *jull- 'collar, yoke'; neither Akk. napāšu nor Arb. ṅīs seem to be attested with the meaning 'to burst open'.

An original ī-vocalism is supposed for 14 verbs (1972:55), 6 of them quite convincing: *-ṣīr- 'to bind', *-qīlib- 'to leave', *-kīl- 'to be small', *-pīkid- 'to look for', *-rbiš- 'to lie down', *-šrīk- 'to steal'. Problematic examples include *-ḥmd- 'to stand', *-ḥk 'to move, proceed' (Arb. ḫk 'être ancien; devancer les autres chevaux à la course' is an u verb according to BK 2 164 and it is only for the meaning 'reprendre son ancien éclat et sa souplesse (se dit de la peau)' that both i and u are reported); *ḥlk 'to go' (Arb. ḥlk 'périr' attested with both i and a as the thematic vowel according to BK 2 1439); *ḥll (Akk. alālu with the meaning 'to shine' does not appear either in AHw. or in CAD); for *mlk, *rḥš (correct Kuryłowicz's rḥš) and *spr v. above.

An important merit of Kuryłowicz's presentation is a rather systematic treatment of examples with divergent vocalism. On p. 59 of his monograph 10 transitive Akk. alul verbs with Arb. parallels in -ī- are listed, most of them concerning (ḥbt 'to destroy', *kbs 'to tread', *kṣp 'to trim', *kṭp 'to pluck', *prs 'to cut', *ṣpk 'to pour', *ṣpr 'to send', *ṣrm 'to split'); only Akk. lapāṭu 'to touch' vs. Arb. lī 'to turn, fold' and Akk. tabāku (rather than tabākāl 'to stack up' ('hin)schütt'en, vergiessen' in AHw. 1295) vs. Arb. ḥbk 'to cover' are somewhat problematic semantically (the latter case, also phonologically). In Kuryłowicz's opinion, the discrepancy is to be explained by the fact that such roots originally belonged to the hypothetical

29. Both ḫmid and ḫnud are known as the preterite forms of Akk. emēdu (CAD C 138). Besides, Arb. ḫnd 's'attacher a qn.' (directly comparable to Akk. emēdu 'to lean against, to reach, to cling to' from the point of view of diathesis) has a as the thematic vowel. As for the meaning 'étayer, appuyer, soutenir à l'aide d'un piliére of ḫnd (i) as described in BK 2 360, its diathesis is certainly different from that of Akk. emēdu in both of its typical meanings ('to lean against, to reach, to cling to' and 'to place, lean').

30. If Kuryłowicz's comparison between Akk. abātu and Arb. ḫbr 'frapper; jeter en bas, précipiter en poussant' (BK 2 1379) is preferred to its widely accepted equation with Hbr. ḫbd 'to perish' and its cognates going back to PS *ḥbd (KB 2).
ali Ablautklass (for which v. also Kienast 1967:72) whose desintegration in Akkadian led them to assimilation with verbs belonging to the more common ali Ablautklass (the i vowel in Arb. is thus supposed to be original). However, since the very existence of the ali Ablautklass in the basic stem of sound roots in Proto-Akkadian (or Proto-Semitic) has never been convincingly demonstrated, Kurylowicz’s explanation does not appear to be well-sustained.

Four examples of the reverse relationship (Akk. ili vs. Arb. -u) are left without explanation by Kurylowicz but only one of them (*tbr ‘to break’) is reliable (*ršp ‘to build’ and *ḥkm are problematic as the respective Akk. cognates are suspect of being WS borrowings whereas Akk. nakābu has u as the thematic vowel of the preterite, CAD N1 328).

For a few examples of intransitive verbs with Akk. ili vs. Arb. u the latter is thought to be primary by Kurylowicz (*fbr ‘to cross’, *btl ‘to stop’, *brk ‘to flash’, *ḥdt ‘to be new’, *škt ‘to fall’; the last example is problematic in view of the unreliable Akk. attestation, cf. CAD Š2 14).

A rich collection of Akkadian-Arabic cognate pairs with identical root vocalism has been collected by A.G. Belova (1993:37-45).

Reliable examples of PS *u-verbs in Belova’s study mostly include those proposed by her predecessors (*-šal-, *-šal-, *-šal-, *-šal-, *-šal-, *-šal-, *-šal-, *-šal-, *-šal-, *-šal-, *-šal-, *-šal-, *-šal-). Additional cases are *-ḥuṭ ‘to make an incision’, *-mrut- ‘to rub, to make smooth’, *-ṃsuṭ- ‘to wipe’, *-nsuṭ- ‘to put in order’.

Belova’s study is characterised by a relatively high number of fully or partly unconvincing examples (due to space limitations, only a selective treatment of such cases is possible in the present context). Thus, in such cases as *-krš ‘to trim’, *nḥt ‘to shine’, *nḫr ‘to snore’, *prṣ ‘to break’, *ptr ‘to cut, dissolve’, *šrt ‘to tear’, *znṛ ‘to sing’ the Arab. cognate is attested with both i and u as the thematic vowel (in *šḥn both u and a are attested in Arb. whereas in *ṣbr ‘to tie, bend’ only i seems to be attested according to BK 1 1305). As for *-krš ‘to pinch off’, *šlt ‘to be powerful’ and *šrt ‘to fast’, vacillation between i and u is observable in Akkadian (CAD K 209, Š1 238 and Š107 respectively). Akk. ḫarāṭu vs. Arb. ḫrṣ ‘to cut, peel’, Akk. šalāpu vs. Arb. slb ‘to pull out’, Akk. šābābu vs. Arb. sff ‘to spread wings’ are phonologically irregular whereas Akk. makāku ‘to spread’ vs. Arb. mkk ‘to reduce’, Akk. parāku ‘to lie across’ vs. Arb. frk ‘écraser qch. entre deux doigts; frotter entre les doigts’ (BK 2 586), Akk. ramāku ‘to bathe’ vs. Arb. rnk ‘s’arrêter dans un lieu’ (BK 1 928), Akk. šarāpu ‘to burn’ vs. Arb. srf ‘to devour (about insects)’ are doubtful semantically (in the latter case, moreover, Hbr. šṛp suggests that the expected sibilant in Arab. is š rather than s). In *-suṭ ‘to be mighty’ the thematic vowel of the preterite in Akk. is unknown; Akk. malāṣu is not attested with the meaning ‘to shout’. A few other unreliable cases (*-ṁmr, *ḥtk ~ *ḥtk, *yll, *ktr, *ṅk ~ *ṅkt, *ṅḥb, *ṅku) have been already discussed above in connection with earlier studies.

Convincing examples of PS *i- in Belova’s study are not numerous and mostly coincide with those adduced previously (*-ntip-, *-ptil-, *-pšid-, *-pšid-, -pšid-, -pšid-, *-rbiṣ); an additional case is *-rkṣk ‘to be thin’.

Not unlike her predecessors, Belova included into this section several examples with vacillating vocalism in Arabic (*ḥsr ‘to cut’, *ḥms ‘to tear, cut’, *kbr ‘to bury’, *nkṣ ‘to be clever’, *nks ‘to cut’, *nṣk ‘to be worried’, *ṛps ‘to tear’, *skr ‘to dam up’, *ṣmd ‘to bind’, *ṭlm ‘to be dark’) and Akkadian (palāku ‘to cut’, AHw. 814; ḥabālu ‘to oppress, make harm’, AHw. 302; ḫarāṭu ‘to graze’, CDA 107). Other problematic cases include *ḥlb ‘to milk’ (Akk. ḥalābu is attested in NA only, AHw. 309, being with all probability an Aramaism); Akk. ḫalāku vs. Arb. ḫlk ‘to disappear’ and Akk. kamāṣu vs. Arb. ḫmš ‘to collect’ (phonologically irregular), *ṭpr (the meaning of Akk. ṭapāru and its very attestation in G is problematic, cf. AHw. 1380); Akk. kapāšu ‘to bend, curl, droop’ (CAD K 181) vs. Arb. ḫps ‘lier aux pieds’ (BK 2 789).
differ from the point of view of diathesis; note also a few cases described above in connection with earlier studies (*mlk, *rsp, *škt).

Two convincing examples of PS a-verbs are adduced by Belova (*-rkab- 'to ride' and *-lbaš- 'to wear'); for *mrš 'to be sick' and *mlšš 'to strike' the Arb. picture is highly controversial (cf. Frolova 2003:98).

Belova points out to several reliable cases of disagreement between the two languages: Arb. i vs. Akk. ʾalu (*ḫliš 'to scrape off', *ḥmīt 'to burn', *kšp 'to split', *npl 'to pay, grant', *klp 'to peel', *ktp 'to pluck', *šrp 'to refine, keep pure', *špk 'to pour', *špr 'to send'); Arb. u vs. Akk. ʾili (*ḥšn 'to embrace', *nkp 'to push, to gore'); Arb. a vs. Akk. ʾalu and u/u (*mšḫ 'to measure', *nbḫ 'to bark', *nḫḫ 'to blow', *nsḫš 'to tear').

Several examples of Akk. intransitive i-verbs with various types of correspondences in Arb. are also adduced in this section (*škr 'to be inebriated', *ṣyr 'to be small', *kbd 'to be heavy', *kbr 'to be thick', *nkr 'to change', *špš 'to be low').

Quite a number of examples from this part of Belova's contribution are unreliable for various reasons. Thus, Akk. ṣadā'u vs. Arb. ṣšk 'to smell' and Akk. ṣadā'u 'to pull' vs. Arb. šdd 'to tie' are semantically problematic; the meaning of Akk. paššamu is uncertain (AHw. 839); Arb. fiḫ 'to open' clearly corresponds to Akk. petā id. rather than paṭāhu 'to pierce, make a hole' (whose preterite is, moreover, unattested, AHw. 846); Akk. naḥalu 'to hand over (property)' (CAD N1 126) is attested in OB Mari only and is obviously borrowed from WS (Streck 2000:106-7); for *ḥkm 'to be wise' v. above.

The latest special study dealing with our subject is Frolova 2003 (mostly based on Frolova 2001). Frolova's article makes full account of the results of its predecessors and is characterised by several important advantages such as completeness of data under comparison, consistently separate treatment of transitive and intransitive verbs (similarly to Aro and, partly, Kuryłowicz but differently from Fronzaroli and Belova), special attention to examples with divergent vocalism, not to mention such technical but on some occasions rather important aspects of presentation as applying strict phonological and semantic criteria to the selection of cognate pairs and exact lexicographic references for each verb under comparison.

Departing from the evidence collected and analysed by Frolova, one can reconstruct the root-vowel *u in the following 41 transitive verbal roots: 32 31 -gur- 'to hire', *-ḫuš- 'to take', *-ḫul- 'to eat', *-ḥur- 'to curse', *-ḫul- 'to mix, dissolve', *-dkur- 'to mention, remember', *-gnum- 'to cover, enclose', *-grum- 'to grind', *-guz- 'to shear', *-yrb- 'to enter', *-ḥsus- 'to feel, think', *-ḫlus- 'to press, squeeze', *-ḫmum- 'to gather', *-ḫnuḫ- 'to strange', *-ḫtuḫ- 'to make an incision', *-khub- 'to burn', *-kmud- 'to make smooth', *-kup- 'to bend, wrap', *-ktum- 'to cover', *-kṣuš- 'to cut', *-lkut- 'to collect', *-mdud- 'to stretch, measure', *-mrut- 'to rub', *-ṁt- (or *-mšš- ) 'to wipe', *-nḫul- 'to sift', *-nḫub- 'to perforate', *-nḫur- 'to pierce, destroy', *-npuš- 'to comb wool', *-npuš- 'to shake', *-nsuḫ- 'to put in order', *-ntur- 'to watch', *-rbuk- 'to

31. Also with u acc. to Lane 591; as a whole probably irrelevant as independent denominative derivation from *hVšn- 'lap' cannot be ruled out.

32. Note that in Kuryłowicz 1972 the studies by Aro and Fronzaroli are not even mentioned whereas Belova 1993 does not use any of the three major contributions dealing with exactly the same topic.

33. The corresponding section of Frolova's study has 27 examples, all of them reproduced presently. 5 examples with initial laryngeal (*-gur-, *-ḫuḏ-, *-ḫul-, *-ḥur-, *-yrb-) were not treated by Frolova as she explicitly excluded Akk. weak verbs from her analysis. Other cases missing in Frolova's list but acceptable from my point of view are: *-lkut-, *-npuš-, *-nsuḫ-, *-ntur-, *-rgum-.
mix, *-rdud- 'to push, drive away', *-rgum- 'to shout', *-rkus- 'to tie', *-šluk- 'to boil', *-šlul- (or *-šlul-) 'to drive away', *-šfur- 'to write', *-škuš- 'to pierce', *-šrud- 'to push, drive away', *-škal- 'to hang'.

For 11 transitive verbs there is unambiguous evidence for an original i-vocalism; 34 *-ššir- 'to shut in', *-ššib- 'to leave', *-šhpis- 'to dig', *-šhrim- 'to cover', *-ššit- 'to cut', *-šnip- 'to tear', *-škid- 'to care about smth.', *-ššid- 'to split', *-štil- 'to plait', *-ššik- 'to steal', *-şrim- 'to split'.

In Frolova's view, the original root vocalism may be obscured by two types of phonetic influence from the neighbouring consonants.

The first one is represented by an unexpected o in Arabic in the vicinity of *h (also *h when it yields h in Akkadian). Since this guttural effect is well known otherwise, there is no serious obstacle for reconstructing the respective roots with *uc: *-šluh- 'to pull, to remove', *-šmuh- 'to tear out', *-špuh- 'to pour, to scatter', *-ššut- 'to pull off'. This possibility becomes even more likely when Arabic preserves both u and a as variants: *-mułu- 'to lift, to take away', *-šnuh- 'to blow', *-šruh- 'to sing, to shout', *-šluh- 'to take away', *-šbułu- 'to cut, slaughter'.

Another, less trivial kind of influence, is the shift of the original i into u in the neighbourhood of labials in Akkadian. This phenomenon is observable in the following 14 cases (which subsume practically all known cases of Akk. alu vs. Arb. i): 35 *-šbit- 'to destroy', *-šhpis- 'to collect', *-šhmiš- 'to burn', *-škiš- 'to trample', *-škpir- 'to smear on, to cover', *-šspip- 'to chip, to split', *-šnpip- 'to give, to pay', *-špris- 'to break', *-štip- 'to peel', *-škip- 'to pluck', *-šspin- 'to peel', *-ššbir- 'to tie, bend', *-ššrip- 'to refine', *-ššpir- 'to drive away, to send'. 36 The labial influence suggested by Frolova for such cases seems to be a highly important innovation as it allows to enlarge considerably the otherwise poorly represented group of PS i-verbs without recurring to the purely theoretical construct of an original alı Abalautklaıss.

As rightly pointed out by Frolova, no unambiguous phonological conditioning is observable in the 7 cases where both u and i are attested in Arb. verbs corresponding to u-verbs in Akk. 37 *-nsVr- 'to take off', *-ššVr- 'to loosen', *-šprVr- id., *-špVk- 'to pour', *-šprVš- 'to cut', *-ššVt- 'to incise', *-šmVr- 'to produce musical sounds'. It is worth noting, however, that here too p or m is present as one as the radicals in the majority of cases (for the possibility of distant influence of labials in primary nouns v. above with reference to Fox 2003:108-9, 134).

Examples of apparently unexplainable Akk. i vs. Arb. u are 38 *-šVbr- 'to cross', *-šdrVš- 'to trample', *-šdvšm- 'to cut off', *-šhrVp- 'to pluck', *-škmVš- 'to collect', *-šnkVp- 'to push, gore', *-šsrVd- 'to bind', *-ššbVr- 'to break, to destroy'. To these examples we can add the following cases of Akk. i as opposed to vacillation between i and u in Arabic: 39 *-ššVr- 'to chip, to trim', *-ššmVš- 'to cut', *-škšbr- 'to bury', *-šnkVš- 'to cut', *-špšVš- 'to beat', *-šškVš- 'to dam', *-ššmVš- 'to cover', *-ššmVd- 'to bind', *-šžbVl- 'to carry'. No explanation for these examples is provided by Frolova who tends to believe that a tendency towards generalization of u as the only thematic vowel in WS may have played its role in the process (the Akk. vocalism is then to be considered as primary). In my opinion, here again a phonetic conditioning cannot be

35. Listed in Frolova 2003:85-6 with the exception of *-šbir-!, *-šhip-!, *-ššm-! and *-ššik-. The only possible example of Akk. u vs. Arb. i where no labial influence can be supposed is *-ššbVš- 'to scrape off' (Belova 1993:44).
36. Cf. also two roots adduced in Frolova 2003:90-1 where only the present in -a- is attested in Akkadian (*kbs- 'to let pass (time)' and *kšl- 'to cut, break'). Since an u-preterite is almost certainly to be reconstructed in both cases, they are likely to belong to the same group as those treated presently.
37. *-ššVr-, *-šprVr- and *-šmVr- do not appear in Frolova 2003:87; for *-ššVt- v. ibid. 92.
38. *-šbVr- and *-šnkVp- not in Frolova 2003:93.
39. *-ššmVš- 'to cut' does not appear in Frolova 2003:94. Conversely, I exclude Frolova's *-ššVn- 'to embrace' and *-ššmVd- 'to cover, sheath' as not fully reliable from my point of view.
excluded since in 12 out of 17 examples under scrutiny we are faced with a labial as the second or the third radical.  

The situation with intransitive verbs is substantially different. For each of the three vowels, reliable examples are extremely few:

*-*klis- 'to shrivel', *-*kil- 'to be small, thin', *-*rbiš- 'to lie down', *-*rkik- 'to be small, thin' (Frolova 2003:95)

*-*ièrement- to be quick', *-*šull- 'to cough', *-*hab- 'to murmur, to make noise' (ibid. 88)

*-*labš- 'to put on clothing', *-*r-aiš- 'to ride', *-*f-šal- 'to stay' (ibid. 98).

This scarcity is no doubt to be explained by the heavy (and probably secondary) predominance of intransitive a-verbs in Arabic and throughout West Semitic vs. their extreme rarity in Akkadian.

3. Conclusion

The evidence presented in the preceding sections demonstrates that the fundamental difference between the vocalic elements of inflectional and derivational affixes vs. those of primary nominal and verbal roots, a priori postulated in the introductory section of this article, can indeed be traced back to PS.

The astonishing regularity of the "grammatical" vocalism in Semitic is to be explained by the high functional load of vowels in the PS morphological system. Quite often, qualitative and quantitative vocalic oppositions are the only way of distinguishing between functionally different derivational and inflectional forms with the same consonantal root. Every kind of spontaneous vocalic change would have damaged and eventually destroyed this network of morphological oppositions, thus greatly endangering the integrity of the original Semitic Sprachtypus.

The main reason behind the unstable nature of the root vocalism is symmetrically the opposite: its functional load is minimal. As pointed out in a recent study, "in some nouns, the patterns cannot be said to have any meaning, even in the sense of distinguishing one noun from another. These are the isolated nouns, in which no other word of the root exists ... Here the pattern is a given structure of consonant-slots and vowels, without being a morpheme as such —merely a description of the phonological composition of the noun" (Fox 2003:44). In order to illustrate this peculiar phenomenon, let us briefly analyse some aspects of the linguistic structure of Proto-Semitic where oppositions depending on the root-vowel could potentially exist but are in fact either completely absent or attested to a very limited extent.

A. Lexical oppositions: primary nouns

Primary nouns differentiated exclusively by their vocalic shape ("vocalic minimal pairs") are rare throughout Semitic. If attested, they often emerge from specific phonological processes typical of particular languages and, therefore, have no bearing on the PS picture. Thus, the opposition of Hbr. rabb 'father' vs. rabb 'bud' vs. rabb 'bag' adduced in Lipiński 1997:152 in order to prove that "the vowels are not second to the consonants with regard to their phonemic importance" becomes less relevant already in Proto-Hebrew (rabb < *rabb-, rabb < *rabb-) and meaningless in PS as no convincing Sem. etymology for

40. As Ms. Frolova informs me in personal communication, she is reluctant to accept this solution because it implies that the labial influence was operative with one group of original i-verbs in Akkadian and another one in Arabic without any distributional factor.

41. Thus, it is rather hard to imagine a Semitic language which would sporadically labialize *i in the kātāl-participle or *a in the *katāl-infinitive after or before a labial radical. Needless to say, vocalic elements of affixes are not immune to the influence of the neighbouring consonants but such an influence tends to be fully systematic and predictable.
The type of sacrifice and the platter for it: MB, NB (CAD K 190), Syr. Arb., Akk.

43. No etymology for the latter two terms is known to me. For the first four terms some parallels are attested: Akk. or LGz.) have been considered sufficient.

Vocalic minimal pairs to be seriously considered as inherited from PS are rather exceptional:

42. For the sake of brevity, here and elsewhere below concrete etymological parallels supporting the reconstructions will be adduced sporadically rather than systematically. For more or less trivial cases references to the basic lexicographic tools (like KB or LGz.) have been considered sufficient.

43. No etymology for the latter two terms is known to me. For the first four terms some parallels are attested: Akk. kapru ‘a type of sacrifice and the platter for it’ MB, NB (CAD K 190), Syr. kăparā ‘vas e libro palmae textum et picatum’ (Brock. 340), Arb. kāfrat- ‘jarre de vin’ (BK 2 914), Gez. kafar ‘basket, container for measuring’ (LGz. 276), Tgr. kāfār ‘big basket’ (LH 426); Akk. kapru ‘village’ OA, OB on (CAD K 189, AHw. 444), Ugr. kpr ‘village’ (DUL 452), Syr. kprā ‘vicus, pagus’ (Brock. 341), Arb. kaf-r- ‘village’ (BK 2 914); Ugr. kpr ‘henna’ (DUL 452), Syr. kprā ‘lawsonia alba’ (Brock. 340); Akk. kpru ‘bitumen’ OB on (CAD K 553, AHw. 509), Jud. kpru ‘pitch’ (Ja. 624), Syr. kprā ‘pix’ (Brock. 340), Arb. kaf-r- ‘goudron avec lequel on calcifie les navires’ (BK 2 914). In each case, however, the possibility of cultural diffusion of the respective terms is rather high.

44. For the former v. SED II No. 89, for the latter v. Jud. šārāb ‘willow’ (Jud. 1111), Syr. šarbātā ‘populus salix’ (Brock. 546), Mnd. šarba ‘willow’ (DM 346), Arb. šarb- ‘sorte d’arbre énorme à épines que croît dans le Hedjaz’, šarab- ‘saule de Babylone’ (BK 1 450), Tgr. šarēb ‘a plant with tendrils’, šarēb ‘a tree’ (LH 460), Soq. šarēb ‘nom d’un arbre’ (LS 325), perhaps Akk. arbatu ‘Schilf’ (AHw. 1428). No reliable cognate is known for šārāb ‘desert, steppe’ (cf. perhaps Tgr. šarib ‘uneven ground’, LH 460). As for šārōb ‘vermin’, the available parallels do not allow to establish the original nature of the guttural (v. SED II No. 36).
OBSERVATIONS ON PROTO-SEMITIC VOCALISM

But even such examples can rarely be considered as fully satisfactory, mostly because at least one of the members in each pair is less widely reflected in other Semitic languages which undermines the chances of the respective proto-form to be treated as a full-range unit of the PS lexicon. Thus, */batn/ is represented by Hbr., Arb. and some Arm. dialects only (SED I No. 42); */dVbr/ 'back' is reliably attested only in Mnd. and Arb. (SED I No. 46); cognates of Hbr. dâbâr 'plague' are sparse and almost all problematic in some respect (SED I No. 45); nôhöšât has no cognate outside Central Semitic.45 A few other problems affecting the above examples are also in evidence. Thus, */bu[tm]/ 'pistachio' is well attested (Fronzaroli 1968:290) but an alternative reconstruction with */m/ is possible and inter-Semitic borrowings cannot be ruled out; */dVbVr/ 'bee' has a very complicated phonological history with doublet protoforms in */d/- and */z/- (SED II No. 66).

It turns that only three cases deserve special attention. The opposition fôrêb 'crow' (*/̄rib-/) vs. ūrâbâ 'willow' (*/yurâb-/ ) appears relatively unproblematic. In the pair zâra 'seed' (< */daʃr/, Fronzaroli 1969:26) vs. zôraa 'forearm' (< */dirâ/, SED I No. 65) both members are rather well attested and, unless */daʃr/ is considered an old derivate from */dr/ 'to sow',46 the vocalic minimal pair is reliable. As for sē ār, sâ ârât 'hair' vs. sô râr 'barley', both of these nouns have reliable cognates more or less throughout Semitic but the latter term is often regarded as derived from the former ('barley' as a "hairy" cereal, v., e.g., Fronzaroli 1969:12).47

In sum, the rather extensive (and, mostly, genuinely Semitic) vocabulary of Biblical Hebrew yields only two vocalic minimal pairs to be more or less safely projected to PS. Since no exhaustive list of PS primary nouns is available, a comprehensive inquiry operating directly with PS reconstructions is not possible at present but a fairly representative collection obtained from Fronzaroli's Studi, Fox 2003, SED I and SED II supports the conclusions obtained from the Biblical Hebrew evidence. Beside the examples mentioned above, some six additional cases only could be taken into consideration:48

* */ʔanp/ 'nose' (SED I No. 8) vs. */ʔanap-at- 'kind of bird' (ibid. II No. 7)
* */ʔarh/ 'cow, heifer' (SED II No. 12) vs. */ʔarh/ 'road' (Fox 2003:81)
* */ʔupr/ 'young deer' (SED II No. 88) vs. */ʔapar/ 'hair' (ibid. I No. 105)
* */muhr/ 'foal' (SED II No. 149) vs. */mahr/ 'bridal gift' (Fox 2003:76)49
* */nâb(−at)− 'bee' (SED II No. 156) vs. */nâb−, */nib(−)− 'louse, nit' (ibid. 157)
* */Vr(−at)− 'kind of insect' (SED II No. 223) vs. */Vr− 'teat, nipple, udder' (ibid. I 274).

45. Hbr. nâbâš 'snake' (together with Ugr. nhš) also looks isolated but can probably be connected with Akk. nēšu 'lion' as suggested by the present author in SED II No. 159.
46. So, e.g., Fronzaroli 1969:10. This is certainly not impossible but the reverse development (the verb */dr/ is denominative) is not unlikely in the wider distribution of the nominal form.
47. Both nouns are opposed to šâ Ăr 'storm' (KB 1344), to be further compared to Akk. šâru 'wind' (CAD Š2 133) and, perhaps, Arb. šâr 'tonnerre' (BK 1 1238).
48. Most of them suffering from the same deficiencies (thus, */ʔanap-at−, */ʔarh−, */ʔupr− and */ʔVr(−at)− are not widely attested etc.). It is noteworthy that such well represented terms as */ʔamn-at− 'elbow, cubit' and */ʔamn− 'mother' are primarily differentiated by the constant presence of the feminine marker in the former vs. its absence in the latter rather than by the quality of the root-vowel. The same applies to */kall− 'all' vs. */kall−at− 'daughter-in-law, bride'.
49. For the latter v. Fox 2003:76 where the term is reconstructed with */-a/ in spite of Hbr. môhar whose */-ã- (alongside with that of */bâl- 'tent' and sôhar 'roof of the ark') is explained, with reference to a personal communication by J. Huehnergard, as going back to */ã/ lengthened before h.
The general conclusion is thus unescapable: PS primary nouns were not differentiated by their vocalic shapes. With very few exceptions, one consonantal sequence was normally reserved for one single nominal concept.\textsuperscript{50}

B. Lexical oppositions: verbs

The same conclusion can be obtained for verbal roots but even with more certainty: thanks to the efforts of several generations of Semitists, an almost exhaustive collection of roots relevant for this problem is available so that a direct inquiry into the PS picture finds no obstacle. Now, among some 100 examples listed above in 2.2 not a single case of lexical opposition expressed by the thematic vowel can be detected. To realize this fact was an important merit of A.G. Belova according to whom "for most verbal roots no semantic opposition expressed exclusively by the thematic vowel can be observed" (1993:30; cf. further ibid. 50-1).\textsuperscript{51} Its functional load is, therefore, clearly inferior to that of the root consonants (in Belova's view, the only role of the root-vowel is to break the triconsonantal clusters forbidden by the rules of syllabic structure).

Here again the Common Semitic picture correlates with the synchronic situation in particular Semitic languages. With its rich verbal morphology and an extensive textual corpus, Akkadian is a good candidate for comparison. As a systematic perusal of von Soden's lists of Akkadian verbal roots in AHw. reveals, two strong verbal roots well attested within one dialect/period and differentiated exclusively by the vocalic class to which they belong are very hard to detect. The following few cases deserve attention in this respect:

\[\text{ḥālālu (ulu)} \ 'to pipe, wheeze' (SB) vs. \text{ḥālālu (alu)} \ 'to detain, keep waiting' (OA, OB) vs. \text{ḥālālu (alu)} \ 'to creep, steal' (OB on); AHw. 309, CAD Ḥ 34
\]

\[\text{ḥāmātu (ulu)} \ 'to hasten, to be quick' (OB on) vs. \text{ḥāmātu (alu)} \ 'to be inflamed; to make glow, to heat' (OB on); AHw. 316, CAD Ḥ 62, 64
\]

\[\text{ḥārāpu (ulu)} \ 'to be early' (OB on) vs. \text{ḥārāpu (ili)} \ 'to cut' (SB); AHw. 323, CAD Ḥ 90
\]

\[\text{kasāpu (ili)} \ 'to present a funerary offering' (OB Mari on) vs. \text{kasāpu (alu)} \ 'to chip, break off' (OB on); AHw. 453, CAD K 241
\]

\textsuperscript{50} A special case is that of \text{*ʔalp-} 'head or cattle' and \text{*ʔalp-} 'thousand'. Both should probably be reconstructed as \text{*katl-} (so in spite of Gez. \text{ʔalp} 'thousand?'), thus yielding two full homonyms rather than vocalic minimal pairs. This is unusual but I do not see any compelling reason to treat the two meanings as ultimately derived from one source (so Fox 2003:74, without comments).

\textsuperscript{51} Lack of "primary verbs with identical root but different root vowels, e.g. \text{yaqtul} : \text{yaqtul} within the same Sem. language, showing the alleged semantic difference" was obvious already for Kuryłowicz (1972:43). The context of his observation looks somewhat confused, however. On the one hand, Kuryłowicz explicitly states that his argument is directed against ascribing to the root-vowel a \textbf{morphological} function (fientive vs. stative). On the other hand, he emphasizes that only "primary verbs" are meant by him rather than such secondarily produced apophonic pairs as Arb. \text{yankbu} : \text{yankbu} or Hbr. \text{yāṣār} : \text{yēṣār} (for which v. ibid. 68). Then, however, the difference in morphological function can only be concomitant with a \textbf{lexical} difference. Interestingly enough, this indeed seems to be the case of some of the vocalic minimal pairs observable in Akkadian: \text{ṣahātu (ulu)} \ 'to fear' and \text{ṣahātu (alu)} \ 'to smear' are opposed by \textbf{both} lexical semantics and diathesis. Incidentally, lack of vocalic minimal pairs among PS verbal roots deprives of any serious importance the putative correlation between the meaning of a verb and its thematic vowel (i-verbs are said to express 'Vorstellungen wie 'schneiden', 'schlagen', 'brechen', 'zertreten' ..., also momentane, oft gewaltsame Handlungen' in Aro 1964:157, Kienast 1967:68 and elsewhere in Semitological literature): were this true, verbs with identical consonantal sets but different thematic vowels would be quite expected.

156
marāru (ili) ‘to be bitter’ (OB on) vs. marāru (alu) ‘to break a field for cultivation’ (OB on); AHw. 609, CAD M1 267-8

mašātu (alu) ‘to flare up’ (SB) vs. mašātu (alu) ‘to measure’ (MB on); AHw. 623, CAD M1 352-4

napāšu (alu) ‘to breathe freely’ (OB on) vs. napāšu (alu) ‘to comb wool’ (OB on); AHw. 736-7, CAD N1 288-91

patānu (ili) ‘stark werden’ (OB on) vs. patānu (alu) ‘essen’ (OB on); AHw. 847

šāḥātu (alu) ‘to fear’ (OA, OB on) vs. šāḥātu (alu) ‘to smear’ (OA, OB on); AHw. 1129-30, CAD Š1 84-6

šāḥātu (ili) ‘to jump’ (OAkk. on) vs. šāḥātu (alu) ‘to take off’ (OA, OB on); AHw. 1130-1, CAD Š1 88-92

zanānu (alu) ‘to rain’ (OB on) vs. zanānu (alu) ‘to provide food’; AHw. 1511, CAD Z.41-43.

Moreover, few of these pairs are entirely satisfactory for our purpose. First of all, in six cases the difference between the two verbs consists in the presence vs. absence of a-apophony in the present rather than in the thematic vowel of the preterite. As far as the preterite is concerned (which alone is relevant for the present discussion), such roots are to be treated as fully homonymous. Secondly, some of the verbs in question are clearly denominative (marāru < marra, kasāpu < kispu) and, therefore, irrelevant for the PS reconstruction. Thirdly, in some cases the original consonantal difference has been obscured by phonological mergers in Akkadian (napāšu ‘to breathe’ < *nāpš < napāšu ‘to comb wool’ < *npš; haрапu ‘to be early’ < *hrp < ḫārapu ‘to cut’ < *hrp;22 zanānu ‘to rain’ < *dnn vs. zanānu ‘to provide food’ < *znn23). Some of the pertinent examples exhibit special difficulties.24 As for the relatively small residual, practically in no case can we trace both members of a pair to reliable PS prototypes. Thus, from the four šṭT verbs only šāḥātu ‘to take off, to pull off the skin, to strip off, to detach’ has relatively reliable cognates;25 from the three ḥll verbs only ‘to pipe, wheeze’ has some etymological support in Hbr. ḥll pi. ‘to

52. Cf. Hbr. pB. ḥrp ‘to scrape, sharpen, grind’ (Ja. 505), Jud. ḫārap id. (ibid.), Syr. headache ‘acutus fuit’ (Brock. 258), Mnd. ḥrp ‘to be sharp’ (DM 153), Arb. ḫrpf ‘unlever une partie, rogner’, Il ‘couper la pointe d’un roseau à écrire’ (BK 1 410), Gez. ḫrāfa ‘to crush, grind, tear off a leaf from the top’ (LGz. 241), Amh. ḥiṟiṯṯ ‘to cut or trim a piece of cloth with scissors’ (K 1162), Soq. ḫarf ‘le côté effilé d’un couteau’ (LS 191); note also, on the one hand, Hbr. ḥrp ‘to annoy, taunt’ (KB 355) and, on the other hand, Mnd. ḫrōṯ ‘to move, remove’ (JM 185). Hrs. ḫnāḏ id. (JH 61), Jib. ḫrdṯ id. (JJ 114). The verbal root *hrp ‘to be early’ is attested, outside Akkadian, only in Jud. (Ja. 505) and Mnd. (DM 153) but presumably related nouns with the meaning ‘autumn, year’ are widely known.

53. For the former v. LGz. 641 (under zanma ‘to rain’), for the latter v. Ugr. znt ‘sustenance’ (DUL 1000; uncertain), Hbr. māḏm ‘food, provisions’ (KB 565), perhaps Arb. zn ‘omer, embellir’ (BK 1 1034), Mhr. azyn ‘to dress a woman in her finery’ (JM 471), Jib. ḥn ‘to become beautiful’ (JJ 322), Soq. ḥn ‘omer’ (LS 152).

54. Thus, raḥāṣu (ili) ‘to destroy, devastate’ (OAakk. on) and raḥāṣu (alu) ‘to wash, to bathe’ (SB, NA) are opposed as two different lexemes in CAD R 69-72 but treated together (albeit in separate subheadings) in AHw. 942-3, no doubt because Adad is the normal subject of the ili verb (the more general meaning ‘niederwalzen’ is thus derived from the basic ‘überschwemmen’). If von Soden’s approach is correct, we are faced with a peculiar split of PS *rḫḥ (Arb. rḥḥ) in Akkadian. It would be tempting to ascribe an active meaning to the former variant and a reflexive one to the latter but it should be kept in mind that raḥāṣu (alu) means not only ‘baden’ but also ‘spülen’, whereas the alu vocalization would be atypical for an Akk. verb with non-active meaning. I leave raḥāṣu NA, NB (alu) ‘to trust, to rely’ and raḥāṣu ‘to gather’’ OB Mari (ili) out of consideration in view of their limited attestation.

55. Since the OB orthography suggests t as the oldest reading (aš-hu-ta-am-ma) in AbB 1 134:30), Sem. parallels pointing to PS *šṭḥ ‘to kill, slaughter’ should be treated as the most pertinent ones even if the semantic difference is not insignificant (cf. LGz. 494); Hbr. šṭḥ ‘to slaughter’ (KB 1458), Jud. šṭḥ ‘to cut the throat’ (Ja. 1546), Syr. šṭḥ (pa.) ‘consumpsit, dissipavit; tentavit’ (Brock. 768), Arb. šṭḥ ‘égorger, tu er promptement’ (BK 1 1060), Gez. ṣaḥaṭa ‘to wound, injure; to touch, pinch, scratch’ (LGz. 494), Mhr.

157
play the flute' (KB 320). In some cases, finally, none of the verbs is traceable to PS (e.g., *patānu). It cannot of course be excluded that Akk. *patānu (alū) 'to eat' and *patānu (iši) 'to be strong' may go back to PS *-ptum- and *-ptin- with the same meanings, and it is only because the hypothetic Arb. cognates are not attested that such reconstructions cannot be sustained. The number of such cases would be, at any rate, extremely small.56

C. Lexical oppositions: primary nouns vs. deverbal nouns with homonymous consonantal roots

As I have tried to demonstrate above, primary nouns differentiated exclusively by their vocalic shapes can rarely be postulated for PS. However, within the nominal system of PS primary nouns were opposed not only to each other but also to nouns derived from verbal roots. Now, if a primary noun and a verbal root display an identical set of consonants, nominal forms produced from this verbal root on the one hand and the primary noun in question on the other hand are opposed precisely by their vocalic elements. The vocalic shapes of primary nouns would thus acquire some functional load. Are we able to detect such "consonantal homonyms across the parts of speech boundaries" in PS?

As far as the lists of primary nouns appearing in Fronzaroli's Studi, Fox 2003, SED I and SED II are concerned, pertinent examples are very rare. Typically, a given sequence of three consonants has only one basic meaning, either nominal (*?r-?š 'earth') or verbal (*n-t-k 'to bite'). In other words, if there is a PS noun *?aruš- 'earth', we are unlikely to discover a PS verbal root **-?aruš- with whatever homonymous

56. Curiously enough, full homonyms (i.e., verbs with both consonantal root and vocalic class identical) are almost the same in number as the hypothetical vocalic minimal pairs. For the *iši class, consider kadāru 'to be overbearing' (OB on) vs. kadāru 'to establish a border' (MB, MA on), AHw. 419, CAD K 30; kamāsu 'to squat, to kneel' (OB on) vs. kamāsu 'to gather' (OB on), AHw. 431, CAD K 114, 117; labānū 'to beg humbly' (OB on) vs. labānū 'to make bricks' (OA, OB on), AHw. 522, CAD L 8, 10; sakālu 'to break, to get stuck' (SB) vs. sakālu 'to appropriate fraudulently' (OB on), AHw. 1010, CAD S 68-9. For the *aššu class, v. napālu 'to dig out' (OAkk. on) vs. napālu 'to make a supplementary payment' (OA, OB on), AHw. 733-4, CAD N1 272, 275. It is rare that both members of such pairs have good Semitic cognates (which would allow to trace the homonymy back to PS). Thus, for Akk. napālu A note Mhr. našīl 'to break a splinter off a bone, piece of wood, stone', našīfīl 'to throw stones down' (JY 284), Jib. nfuṣ 'to cut off a sliver of wood', break off a chip, splinter', enfīl 'to cut down, destroy' (JY 182) and, with a shift in diathesis, Hbr. npl 'to fall' (KB 709, with related Arm. forms), Sab. nīl 'fall in battle' (SD 92), possibly also Amh. našīfīlā 'to be in flood; to fall; to be in distress, anxious' (K 1080) whereas Akk. napālu B is obviously related to Arb. nīl 'to grant' (v. above); for kamāsu A cf. Ugr. kmos 'to buckle, bend' (DUL 446), for kamāsu B cf. Hbr. kms 'to store up' (KB 481) and Arb. kmš 'prendre, enlever avec la main autant qu'on peut' (BK 2 929; the sibilant correspondence is irregular but not without precedent). More typically, only one of the verbs is relatively well attested outside Akkadian. For hanātu 'to be inflamed' cf. Arb. hmt 'to burn' (above) and Tgr. hamātu 'to burn' (LH 64), for kadāru 'to be overbearing' cf. Arb. kadīr- 'nombreux, abondant', kadūr-, kadūr- 'gros, épais', kandūr- 'gros, épais (âne, onagre, jeune homme)' (BK 2 874), Mnd. kdr 'to be heavy, weighty, hard' (DM 204).
meaning. And conversely, the existence of a PS verbal root 
*-ntuk- 'to bite' makes unlikely the appearance of 
PS **natk- for whatever basic nominal concept.57

A deeper inquiry taking the synchronic evidence of one particular Semitic language as its point of
departure reveals a somewhat different picture. Thus, in Biblical Hebrew consonantal homonyms pertinent
to the discussion amount to more than 40 cases. Many of them have no relevance for the PS picture being
due to consonantal mergers specific of Hebrew: ëez < *ílnz- 'goat' vs. ëez 'to be strong' (KB 804, 808);
Hbr. ħäläsāyim 'loins' vs. ḫls 'to draw off, to pull out, to withdraw' (KB 322; the meaning 'to be ready for
fighting' is, contra KB, not to be united with this root but rather to be separated into a different
denominative verb derived from ħäläsāyim, cf. BDB 323 and SED I No. 118);58 šābūt < *ṣabūt- 'hyena'
vs. źbersistence < *ṣiby'- 'to dye' (KB 997-8); šēlāt < *šila- 'rib' vs. šlēt < *šīl- 'to limp' (KB 1030); šā‘ār 'gate'
< *ṭa‘ār- vs. ṣār 'to calculate' < *ṣār (KB 1613-4). In other cases attestation in other Semitic languages is
insufficient for at least one of the terms under comparison: ðābrā 'pinion, wing' vs. ḫbr 'to be strong' (KB
9; for the former term cf. SED I No. 3); ḫādām 'mankind' vs. ḫlm 'to be red' (KB 14); ḫēdār 'herd' vs. ḫdr
'to hoe', ḫdr 'to be missing' (KB 793; no reliable cognate for any of the three terms; for the latter v. perhaps
Arb. ydr 'rest in arrière de qn.', BK 2 438 and Tgr. ṭāddārā 'to fall sick', LH 483); bšēr 'cattle' (KB
142) vs. b yr 'to burn', b yr 'to devastate', b yr 'to be stupid' (KB 146),59 Hbr. ḫəbōrā 'bee' (and several other
consonantal homonyms discussed above) vs. dbr 'to speak' (KB 210);60 gāmāl 'camel' vs. gml 'to complete'
(KB 197);61 ḫālād 'mole' vs. ḫld 'to be eternal', ḫālād 'lifespan, world' (KB 316);62 ḫāzā 'breast' vs. ḫy 'to
see, behold' (KB 301);63 kīlāy 'kidney' vs. kly 'to come to an end, to be completed' (KB 476, 479);64 kāsāp

57. One wonders whether this may be at least partly due to the well-known fact that primary nouns do not strictly follow the
rules of consonantal incompatibility which are obligatory for verbal roots. This makes the consonantal inventories of verbal and
nominal roots inherently different.
58. For the verbal root cf. Akk. ḫalāṣu 'to squeeze' (CAD H 40), Ugr. ḫls 'to squeeze' (DUL 394), perhaps Arb. ḫls 'être pur,
sans mélange' (BK 1 613), cf. BDB 323 and SED I No. 118.
59. For the nominal root v. SED II No. 53. For the verbal roots v. only Ugr. b yr 'to ignite' (DUL 212), Jud. bšēr 'to burn'
and Mnd. bar 'to burn' (DM 49). All the three meanings are reported for Gez. bañara (LGz. 84) but it is not unlikely that
the respective forms are not genuine but transcribe the Hebrew original.
60. The only parallels to the verbal root are Ugr. dbr 'to speak' (DUL 263), Pho. dbr id. (T 69), Off. dbr 'word' (HI 239);
note Arb. dbr 'raconter, rapporter, en absence de qn. une parole qu'on lui avait entendu dire; composer, écrie', II 'mèdérer, se
proposer qch.' (BK 1 664). The nominal roots are, as pointed out above, mostly problematic too.
61. For the verbal root v. Akk. gānāluu 'to be obliging, to perform a kind act' (CAD G 21), gīmāluu 'equal; noble, perfect'
(ibid. 110), Arb. jml réunir, rassembler; être beau (de corps), Ill 'agir bien envers qn.' (BK 1 329), Qat. gml-n 'joined, united'
(Ricks 39), Tgr. gāmāl 'in thick foliage, well thiven; having dense hair' (LH 567), Tna. gāmālā 'to honor, esteem; to help' (K
Tna 2236), Amb. gāmālā 'to grow up, reach adulthood' (K 1907), Mrh. gūmil 'to buy the whole of', gtmōl 'to do a favour to'
(JM 121), Hrs. egtēmōl 'to be generous' (JH 40), Lib. gūl 'to include, bring everything into st.', gımālu 'to do a favour' (IJ
76). The nominal root is, as all Sem. terms for camel, rather sparsely attested (cf. SED II No. 79).
62. Neither the nominal nor the verbal root is well attested, v. SED II No. 108 for the former and Min. k-hld 'pour toujours'
(LM 43), Arb. hld 'durer sans fin' (BK 1 612), Gez. hällā 'to last long' (LGz. 260). Note also Gez. hällū 'to accomplish', Tgr.
hallādā 'to determine' (LH 57), Har. ḫēlā 'finish, accomplish, bring to an end' (LHar. 82), all from an original meaning 'to fix,
appoint (time)?'
63. The verbal root is well attested but its phonological history is, as well known, complicated. Forms pointing to an original
*ṭ are Ebl. ñ-sa-um = IGLBAR.DA (VE 0126) and Ugr. ḥdy 'to see, look, observe' (DUL 356) whereas Bib. ḥāzā 'to see' (KB
1872, with references to other Arm. forms) and Arb. ḥzū 'faire partir les oiseaux ... pour augurer de leur vol' (BK 1 422) suggest
*z in the proto-form. The Eth. forms may go back to either of the two variants: Tgr. ḥaza 'to seek' (LH 92), Amh. ayā 'to see'
(K 1282), Arg. ḫan ḫu 'to see' (LArg. 205), Har. ḫēṣu 'to look, watch' (LHar. 81), Cha. aţī, Eżā Muh. Msq. Gog. Sod. aţţā, Cha. Enm.
‘silver’ vs. ksp ‘to long for’ (KB 490), kīrah ‘frost, ice’ vs. kṛh ‘to have one’s head shaved’ (KB 1140), lāhām ‘bread’ vs. lhm ‘to fight’ (KB 526); Hbr. na fār ‘lad, adolescent’ vs. n ṣār ‘to growl’, n ṣār ‘to shake off’ (KB 706-7); nēḇāl ‘skin-bottle; a musical instrument’ vs. nbl ‘to sink, drop down; to be foolish’ (KB 663-4); nēṣ ‘hawk’ vs. nṣṣ ‘to shine; to bloom’ (KB 717; v. SED II No. 168 for the nominal root; no cognate for the verbal root); pa ḫam ‘foot; step’ vs. p ṣām ‘to stir, trouble’ (KB 952; for the former v. SED I No. 207); Hbr. pārūd ‘mule’ vs. prd ‘to divide, separate’ (KB 962-3); ḥbr. ṣaḥār ‘dawn’ vs. ṣḥr ‘to be black’, ṣḥr ‘to search’ (KB 1465-6).

In a number of cases, however, both members of a pair have relatively reliable cognates in other Semitic languages and can, therefore, be projected to PS:

ānōṣ ‘man’, ānāṣ̱īm ‘men’ vs. ḥṣ ‘to be weak’ (KB 70, 73)

ṣgāl ‘calif’ vs. *ṣgāl ‘to be round’ > ṣgāl ‘round’, ṣgālā ‘waggon, cart’ (KB 784-5)

ṣoll ‘yoke’ vs. ṣll ‘to insert’ (KB 828; v. Kogan 2001:281-2 for the former, Kogan 2005 for the latter)

64. The nominal root is very well attested (SED I No. 156) but no cognate for the verbal root is known beyond Ugr. ḱōy ‘to finish’ (DUL 441), Pho. ḱo ‘to complete, finish’ (HJ 510-110), Jud. ḱolē ‘to be finished, gone’ (Ja. 641) and Mnd. ḱla ‘to be complete, accomplish, end’ (DM 216).

65. For the verbal root cf. perhaps Hbr. pB. ksp ‘to peel, whiten’, hip. ‘to fade, wither; deteriorate, fall in value; to put to shame’ (Ja. 655), Jud. ḱoṣēp ‘to feel ashamed, frightened’ (ibid.), Arb. ḱṣ ‘être dans l’éclopée; être troubé, voilé; prendre un air sévère; être dans de mauvaises affaires’ (BK 2 898), Tna. kāṣātā ‘to be displeased; to humiliate, be little’ (K Tna 1620), Jih. ḱoṣ ‘to humiliate’ (JJ 135). The nominal root is, as well known, not attested beyond the Syro-Palestinian and Mesopotamian areas.

66. For the verbal root v. SED I No. 38. The nominal root does not seem to be attested beyond Jud. ḱahrā, ḱahrā ‘ice, frost’ (Ja. 1415), Syr. ḱahrā ‘procella’ (Brock. 694) but cf. perhaps Amh. ḱərrə (< *ṛH) ‘to be cold; to fall (frost)’ (K 717), Zwy. ḱorrə ‘frost of the morning’ (LGur. 495).

67. For the verbal root v. only Ugr. ḱlm ‘to fight’ (DUL 496) and Arb. ḱlm ‘tuer qn.’, V ‘être, devenir acharné (se dit d’un combat); s’entreter, se donner réciproquement la mort’, ṭaḥμat- ‘combat, bataille’ (BK 2 977-8); cf. also Arb. ḱlm ‘frapper qn. sur le visage’ (BK 2 981), Sab. ḱlm ‘exchange of blows’ (SD 82). The nominal root is somewhat better attested: Ugr. ḱlm ‘grain, bread; food, meat’ (DUL 496), Syr. lāhmā ‘panis, cubus’ (Brock. 364), Arb. lāhm- ‘vianche, chair’ (BK 2 978); presumably denominative from a non-attested *lāhm- is Akk. lēmu ‘to take food or drink’ (CAD L 126).

68. For each of the two verbal roots some parallels are known: Akk. na ḱrū ’to roar’ SB (CAD N 1 7), AHw. 694, Jud. na ṭārūtā ‘camel’s cry’ (Ja. 922), na ṭār ‘clamavit (asinus)’ (Brocc. 435), Arb. n ṣār ‘rendre un son nasillard ou raquée’ (BK 2 1293), Amh. na rā ‘to cause to resound’, (K 1018); Jud. na ṭār ‘to shake, stīt’ (Ja. 921), Arb. n ṣār ‘le se lever et se mettre à quelque chose’ (BK 2 1293), Tgr. na ṭār ‘mischief, quarrel, revolt’ (LH 335), Tna. tūnāḥrā ‘to be pudeif’ (K Tna 1351), Amh. nār ‘to bounce upward, rise up’ (K 1018). The nominal root, however, has virtually no cognate outside Hbr. and Ugr.


70. The verbal root is well attested (Arb. frd ‘être seul, unique et isolé’, BK 2 564; Gez. farada ‘to separate’, LGz. 165; perhaps also Syr., MSA and Akk. verbs meaning ‘to flee in panic’ compared in LS 340 and Eth. verbs meaning ‘to judge’ compared in LGz. 165) but the noun is poorly known (v. SED II No. 177).

71. For the nominal root v. Akk. ūṣītu ‘morning’ (CAD Ū 322), Ugr. ḥṣr ‘dawn’ (DUL 812), Jud. ūṣr ‘morning dawn’ (Ja. 1551), Arb. ḥṣār- ‘point de jour’ (BK 1 1059), Tgr. ḥṣārā ‘to eat at night’ (LH 207), Jib. ḥṣor ‘today’ (JJ 261). None of the verbal roots is widely attested outside Hebrew (tentative parallels for ṭhr ‘to be black’ are discussed in Bulakh 2003:13; comparison of Hbr. ḥṣr ‘to search’ with Akk. ḥṣārū suggested in KB is unlikely for phonological reasons).

72. For the nominal root v. SED II No. 28; for the verbal root v. Jud. ṭōgāl ‘to be round’ (Ja. 1041), Syr. ṭōgalā ‘currus, plaustrum’ (Brock. 510), Arb. ṭōgalat- ‘carriot, voiture; roue’ (BK 2 182), Gez. ȝalā ‘to make an enclosure, surround with a wall’ (LGz. 59), Tgr. ṭōγūl ‘round’, (tū) ṭōγgalā ‘to be surrounded by a wall’ (LH 487).
OBSERVATIONS ON PROTO-SEMITIC VOCALISM

73. For the verbal root v. Gez. taššalma 'to be hidden, to disappear from sight' (LGz. 61), Tna. ḫlōm hālā to disappear, to go under (water), to dive' (K Tna 1825). Amh. allōmm alā to disappear suddenly, vanish; to go under (in water), to disappear from sight' (K 1105) and, probably. Ugr. ṣlōt 'concealment, darkness' (DUL 320).

74. For the verbal root v. Akk. bāri D 'to establish the true legal situation' (CAD B 125, AHw. 108) and, perhaps, Arb. bwr 'éprouver, essayer, soumettre à l'épreuve' (BK 1 177).

75. For the verbal root v. Ugr. bkr 'to examine, scrutinise' (DUL 235), Syr. bokar 'perquisitiv; perforavit' (Brock. 87), Arb. bkr 'fendre, ouvrir en fendant; examiner en faisant des questions; connaître les affaires de qn.' (BK 1 148), Sab. bkr 'to dig up, to dig out, excavate' (SD 30), Qat. bkr 'to plow' (Ricks 32), Amh. bokkārā 'to make guide furrows on the ground for plowing' (K 907), perhaps Akk. bākārū 'Anspruch geltend machen, vindizieren' (AHw. 104). For the nominal root v. SED II No. 59.

76. For the verbal root cf. Arb. kis 'être paresseux, négilgent' (BK 2 899), Wol. kāsālā, Sel. kāsālā, Msq. kāsālā, Cha. Enm. Gyt. kāsārā, ḫā kāsārā, End. akāsārā, Muh. kāseller 'to endeavour, become tired because of making an effort' (LGur. 353), Mhr. kāssāl 'to be too tired' (JM 215), Hrsl. kāsell id. (JH 70), kṣēl id. (JI 136).

77. For the verbal root v. Ugr. ū 'to call, shout, invite' (DUL 708), Bib. ū 'to shout, to read' (KB 1971, with references to other Arm. forms), Arb. ū 'order, command' (SD 106), Min. ū 'ordonner, commander' (LM 72), Tgr. kūr 'to read, recite' (LH 243), Mhr. kūrī 'to read' (JM 237), Soq. kūrē 'lire' (LS 385). Akk. kūrā 'to invite' (CAD Q 242, AHw. 918) can be alternatively compared to Arb. kūrī 'recevoir qn. comme hôte, l'héberger' (BK 1 730). For the nominal root v. SED II No. 134.

78. For the verbal root v. Syr. mārak 'polivit, purgavit' (Brock. 405), Arb. mārī 'arracher la laine de la peau macérée d'un animal égorgé' (BK 2 1094).

79. For the nominal root v. SED II No. 181, for the verbal root v. Ugr. ārī 'to break' (DUL 681), Jud. ārā 'to break' (Ja. 1241), Arb. ārī 'to fendre, couper en deux' (BK 2 559), perhaps Akk. parāru 'sich ablösen' (AHw. 829).

80. For the verbal root v. Akk. parāṣa 'abtrennen, entscheiden' (AHw. 830), Pho. prā 'portion, half a measure' (HJ 940-1), Jud. prā 'to split, divide' (Ja. 1232), Syr. prās 'divisit' (Brock. 599), Hrs. ferōs 'to eat carrion (wolf, hyena)' (JH 34), Jib. ḍārēs 'to mash (potatoes etc.)' (JI 61). The following Arb. and Eth. forms may go back to this root or to a (likely related) variant *prās: Arb. ārs 'brisier les os du cou d'un animal vivant avant de l'égorger; déchirer sa proie' (BK 2 568), Gez. fārasa 'be demolished, be destroyed' (LGz. 167), Tgr. fārasā 'to be ruined, perish' (LH 656), Tna. fārasā 'to collapse, to fall, to break down' (K Tna 2660), Amh. fārasā 'to fall apart, to be destroyed' (K 2277), Gog. fārasā 'be demolished', Enn. End. Gyt. Sel. Zwy. afārasā, Gog. Msq. afārasā 'to demolish, destroy, break clods of earth and soften them; annule (contract), violate (agreement)' (LGur. 244). For the nominal root v. SED I No. 220.

81. The nominal roots have been treated above. For the verbal root v. Arb. ū 'savoir' (BK 1 1237), Sab. ū 'to be aware' (SD 131), Min. ū 'se rendre compte de' (LM 85).
A few illustrative word-pairs can be adduced from languages other than Hebrew, e.g. Akk. ṛīmu 'aurochs' vs. ṛāmu 'to love' or nādu 'waterskin' vs. nādu 'to praise' (AHw. 951, 986 and 704, in each case with basic etymological information).

Examples discussed in this section cannot be said to be typical of the linguistic structure of Semitic but they are certainly more numerous than those treated in the two preceding sections. Therefore, oppositions of this kind did exist in PS, providing the vocalic elements of primary nouns with some functional load.  

D. Morphological oppositions: primary nouns vs. denominal derivates

Denominal derivation operating with extracted consonantal roots is attested throughout Semitic but its relevance for particular languages is uneven. As is well known, the maximum spread of this morphological procedure is attested in Arabic and other languages of the South Semitic area whereas in Akkadian it is relatively uncommon. Both extremes are unlikely to be automatically projected to PS for which an intermediate picture similar to that observed in Biblical Hebrew should probably be postulated. It means that vocalic oppositions like bāḵär 'large cattle' vs. bāḵēr 'herdsman', sēlūr 'hair' vs. šālūr 'hairy', šorlā 'foreskin' vs. šārēl 'uncircumcised' or hāmōr 'ass' vs. ūhōmār 'a measure' were not totally alien to PS but by far less common than, for example, in Classical Arabic where several derived verbal and nominal forms are produced from almost every primary noun inherited from PS.

As established by G. Buccellati (1996:62-6), there is one segment of Semitic nominal lexicon where denominal derivation is not only well attested but practically obligatory in all major languages: the numerals. Fractions and ordinal numerals are usually derived from the consonantal roots of the respective cardinal forms and this was no doubt the case of PS too. In this connection, I wonder whether the extraordinary stability of the vocalism of most cardinal numerals (*tīn- 'two', *ṣalāt-'three', *ʔarba-'four', *ṣidt-'six', *šab-'seven', *tamāniy-'eight', *tiš-'nine') may be due to the constant need to oppose them to their denominal derivates.

E. Morphological oppositions: nominal inflection

Internal nominal inflection is unlikely to play any substantial role in PS. The only pertinent case is the plural marker *-a- brilliantly described in Greenberg 1955 but its actual participation in vocalic oppositions is very restricted. Differently from other Afroasiatic branches, Semitic mostly operates with

82. For the former v. Akk. bābbāla (< *wābbāla?) 'flood' (CAD B 298), Arb. wābīl- 'plie forte et abondante' (BK 2 1478), Qat. mābīl-m 'crops watered by heavy rain' (Ricks 48), Amh. wābālī 'a fierce rainstorm which overturns houses and uproots trees' (K 1536; an Arabism?), for the latter v. SED II No. 245.

83. It was the relative rarity of such cases that often induced Semitists to explain them in terms of derivation (deverbal, more rarely denominal) rather than true homonymy. Some of such explanations are discussed in Fronzaroli's studies in connection with *ṭakar- 'male' vs. *ṭakar- 'to call, to mention, to remember' (Fronzaroli 1964:19-20), *mašk- 'skin' vs. *mūak- 'to pull' (ibid. 27), *dārā- 'elbow' vs. *ṭara- 'to sow' (ibid. 34; cf. 1969:9), *bāṣār- 'meat' vs. *bāṣ- 'to bear tidings' (ibid. 52), *ṭalāp- 'cattle' vs. ḫāp 'to be friendly, accustomed' (id. 1969:15). A proper evaluation of such hypotheses is an important task of comparative Semitics but their relevance for the present discussion is rather limited: since both *ṭakar- and *ṭakar- are attested more or less throughout Semitic, both of them must be traced back to that level of PS reconstruction which is the primary object of the present contribution. Now, if *ṭakar- coexisted with *ṭakar- already in PS, it must have also been opposed to the derived nouns produced by the latter such as *ṭikr-.
"a-itercalation" which means that -a- is normally opposed to zero rather than to another vowel (*raʔš- ~ *raʔuš- ~ *raʔuhn- ~ *raʔudan- etc.). Vocalic oppositions in the strict sense (i : a) are present in the very few cases of "a-replacement" like Hbr. bēn : bān-im or šēt : šāt-āt.

F. Morphological oppositions: verbal inflection

Semitic languages are well known for the great importance of vocalic elements in the verbal inflection. However, most of the vocalic alternations do not immediately affect the prefix conjugation base -CCVC-. The only truly vocalic (i.e., not implying gemination, changes in syllabic structure etc.) minimal pair involving this base is the apophony u, i : a expressing the opposition active : passive, either in the "internal passive" (Arb. yakṭulu : yuḳṭalu) or in pairs like Hbr. yāṣūr : yēṣar studied in Kuryłowicz 1972:68 and Joosten 1998:209ff. It should be kept in mind, moreover, that both phenomena are absent from Akkadian and in both cases a concomitant apophony in the prefixes (a : u and a : i respectively) is likely to have been obligatory in proto-WS. I am aware that the same apophony may have played a more substantial role on earlier stages of the development of PS for which the opposition "preterite i, u" : "present a" could be postulated (similar to Old Assyrian i/ddīn : i/ddan and agreeing with the Proto-Cushitic and Proto-Afroasian reconstruction outlined in Zaborski 1975:164). But here too it is only a that is opposed to the remaining two vowels. The opposition i vs. u (which alone is important for the above discussion of the non-motivated verbal vocalism) most probably never existed in the base of prefix conjugation G.

* * *

The results of the six excurses (from A to F) can be summarized in the following way:

Primary nominal lexemes were not opposed by their vocalic shapes: with rare exceptions, a given combination of consonants is reserved for one nominal concept only.

Verbal roots were not opposed by their thematic vowels: a given combination of radicals is reserved for one verbal concept only.

Inflectional forms of primary nominal lexemes were not opposed by their vocalism.

The only two areas where some functional load can be postulated for the root-vocalism are the oppositions of primary nouns vs. their denominal derivatives on the one hand and primary nouns vs. derived nouns produced from verbal roots with an identical set of root consonants on the other (synchronically illustrated by such examples as Arb. ṭalāt- ‘three’ vs. ṣuḷt- ‘one third’ and Arb. ḍakar- ‘male’ vs. ḍikr- ‘mention’ respectively). Both phenomena are, however, not very common and hardly made any serious impact on the PS system of lexical and morphological oppositions.

In short, the functional load of root vocalism in PS was rather insignificant. Then a fundamental question arises: can and should one altogether try to reconstruct vocalized proto-forms for primary nouns and verbs of Proto-Semitic? The answer of most modern Semitists seems to be negative even if concrete arguments in favor of this approach are rarely formulated explicitly. A remarkable exception is represented by a series of studies by A.M. Gazov-Ginzberg (1965a, 1965b, 1974; for an interesting

84. As documented, on the one hand, by the common use of such formulations as “Proto-Semitic *klb ‘dog’” and, on the other hand, by an almost total lack of scholarly attention towards vocalic reconstruction as a whole.
presentation of these little-known contributions v. recently del Olmo Lete 2003:44-6). Gazov-Ginzberg fully exploited both the non-functional nature of the nominal root vocalism and its variability: “The vowel in Semitic primary nouns has no morphological function and, in most cases, alternates indiscriminately within a given noun ... Conversely, we do not know a single case of two primary nouns distinguished only by the vowel” (1974:75-6). In Gazov-Ginzberg’s view, the formation of root vowels is a relatively late phenomenon conditioned by a complex interplay of influences from neighbouring consonants (ibid. 76-7). Accordingly, the vocalic element is not to be considered as part of the root in PS (1965a:201) for which the author postulates a monovocalic system where “undetermined vocalic elements were used to facilitate the pronunciation” (1965b:95).

Even if some of Gazov-Ginzberg’s observations are correct, it is hard to share the agnosticism of his general approach to the problem. As we have seen above, for many dozens of PS primary nouns a full agreement in vocalism between all major Semitic languages can be observed. The same holds true for Akkadian-Arabic comparisons in the domain of verbal roots. In my opinion, such a high number of coincidences can by no means be accidental and unambiguously suggests that the respective vocalic elements should be reconstructed as Proto-Semitic.86 Now, it does not seem realistic to suppose that some 150 PS primary nouns did have fixed vocalic shapes whereas some other 150 were completely chaotic in this respect. It looks more promising to believe that originally all PS primary nouns and verbs possessed a given vocalic element which can be, admittedly, very hard to retrieve on some occasions.

My answer to the first part of our question is thus positive: the original root-vocalism of PS primary nouns and verbs can be —at least in principal— reconstructed. In this sense, I tend to agree with Diakonoff’s critical evaluation of Gazov-Ginzberg’s theory (1972:455): "The solution of obscure points in the vocalism of identical roots when differently reflected in the individual Semitic languages should be sought, first, in a correct reconstruction of the Proto-Semitic and Proto-Semito-Hamitic phonological system, secondly, in a more exact reconstruction of the Proto-Semitic root patterns, and also by taking the history of the individual language groups more rigorously into account. It is only after this that generalizations on the subject of the language at its primaeval stage should be attempted”.

85. As pointed out by Gazov-Ginzberg, this fact has been recognized also by I.M. Diakonoff (1970:454): “it must be conceded that no fully satisfactory minimal pair contrasting only in vocalism can apparently be found among the primary Semitic roots”.

86. In this sense, Gazov-Ginzberg’s presentation is very uncritical. Firstly, the whole of his theory is based on some 20 examples of roots denoting body parts (most extensively in 1965b:92-4). This list is suggestive but certainly not representative. Secondly, the author does not take into account the rather obvious fact that the degree of conservatism in the vocalic system varies from one Semitic language to another (thus, as pointed out in fn. 5, Fox is no doubt correct in ascribing to the Aram. data less importance than to those of Hebrew, Arabic and Akkadian). Accordingly, one should not treat in the same way PS *网约 ‘testicle’ (which does display extremely variable reflexes throughout Semitic) and, for example, PS *网约 ‘nose’ which can be reliably reconstructed with *-a- on the evidence of all major Sem. languages (the forms网约, نف observed in non-classical Arabic are certainly secondary). Thirdly, some examples contradicting the author’s theory are simply omitted from the discussion (thus, PS *purl-at- ‘foreskin’, with a “non-motivated” -a- is said not to be worth discussing because of “an unclear etymology, the possibility of borrowing and the unusual combination -rl-”; each of the three objections is either baseless, or irrelevant for the problem of vocalic reconstruction). But above all, Gazov-Ginzberg’s contributions suffer from his incapacity to distinguish between the PS reconstruction resulting from the immediate comparison between the attested Semitic languages and the internal reconstruction of the (once reconstructed) PS language. Thus, it is theoretically possible (though, in my opinion, very unlikely) that the choice of -i- as the thematic vowel of PS *simn- ‘tooth’ is due to the combination of a sibilant and a nasal as the radicals (1974:77). However, since *simn- is reflected regularly in all Semitic languages, the alleged phonetic conditioning must be postulated for a very remote "Pre-Proto-Semitic" stage.
The second part of our question is more difficult to answer: the language as a whole and its lexicon in particular being a system of oppositions, it is legitimate to doubt that so much effort should be spent on reconstructing elements with such a low oppositional value.

Abbreviations of Languages and Dialects


Abbreviations of Lexicographic and Grammatical Tools

CAD The Assyrian Dictionary of the Oriental Institute, the University of Chicago. Chicago, 1956-.
References

OBSERVATIONS ON PROTO-SEMITIC VOCALISM


