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KOMISJA JĘZYKOZNAWCZA
we współpracy
z UNIWERSYTETEM IM. ADAMA MICKIEWICZA W POZNANIU

LINGUA POSNANIENSIS

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On chronology of the First Germanic Sound Shift (Lex Rask – Grimm)

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Abstract: Václav Blažek, *On chronology of the First Germanic Sound Shift (Lex Rask – Grimm)*. The Poznań Society for the Advancement of Arts and Sciences, PL ISSN 0079-4740, pp. 7-25

This contribution analyzes the geographical name Θούλη, first recorded by Pytheas of Massalia in the period 330-325 BCE and mediated especially by Polybius, Strabo, Pliny and Procopius. Björn Collinder (1935/1936) designated this term as the earliest datable document of the Germanic Lautverschiebung. He also offered an appealing etymology, explaining the toponym on the basis of Old Norse *þaularvágur* “winding creek”, i.e. a place especially characteristic of the West Norwegian coast with its winding fjords. In the present study an alternative etymology by Torp is also analyzed, interpreting the toponym as a wooded place with regard to Old Norse *pollr* m. “tree, fir-tree, pine-tree”, and the witness of Procopius of Caesarea on the exceedingly large forests in Thule [‘The Gothic War’ VI.15]. Independently of whether either of the solutions of Collinder or Torp is correct, around 330 BCE the First Germanic Sound Shift should already have been operating.

Keywords: Germanic, Lautverschiebung, Pytheas of Massalia, Thule, etymology.

1. Björn Collinder (1935/1936: 94) proposed the idea that the geographic term Θούλη, first recorded by Pytheas of Massalia in the period 330-325 BCE and mediated especially by Polybius, Strabo, Mela, Pliny, Procopius and others, reflected the oldest known Germanic proper name. It is important to stress that it also represents the first witness of the Germanic *Lautverschiebung*.

2. Nansen (1911: 58-59, fn. 3) summarized all etymologies known to him, including their critical comments.

2.1. Among them appeared the idea discussed by Alf Torp of the Celtic origin of the toponym, based on Old Irish *tulach* f. “hill, hillock, mound” (with variants *ta^o*, *tai^o*, *tau^o*, *te^o*, *ti^o*, *to^o*), but this word reflects a derivative of Old Irish *tul* n. (*u*-stem), with variants *taul*, *tel*, *til* “protuberance, projecting part, swelling; boss of a shield; forehead; at the end” (*DIL* T-374f),

which represents a continuation of Proto-Celtic **talū-¹* “forehead, front”, cf. Welsh, Cornish, Breton *tal* “front”, reflecting Brittonic **talo-* (*LEIA* T- 181-183), and the Gaulish counterpart **talo-/talū-*, appearing in numerous proper names, probably with the meaning “front”: *Cassi-Talos*, *Assu-talos* & *Assu-talus*, *Argio-talus*, *At-talus*, *Axro-talus*, *Dru-talus*, *Ego-talus*, *Mari-talus*, *Orbio-talus*, *Tigo-talus* etc. (Delamarre 2018: 288-89, 438). It was also adapted in Gallo-Latin *talūtium* “end of a slope” > Provençal *talus* “slope, hillside, hill”, French *talus* “slope, hillside” (Meyer-Lübke 1935, n. 8545b). This solution implies the probable meaning “front of a slope” or “highland” of the toponym Θούλη, which would perhaps be applicable to Wales or Scotland (let us mention that we speak about Goidelic!), but the umlaut did not yet operate in the first half of the 1st mill. CE in Goidelic: cf. the name CALUNOVIC[AS] known from the Ogam inscription n. 273 from Waterford (400-450 CE), representing the Proto-Goidelic compound **kaluno-ūiks*, where the first component corresponds to the Old Irish name *Caulann*, later *Culann* (Korolev 1984: 91, 126). In Brittonic the sequence **a-o* was still preserved around the end of the 5th cent. CE, cf. the name TALORI from the inscription n. 361 from Wales written in the Latin script (Sims-Williams 2003: 371), representing the Brittonic compound **talo-rīks* (Korolev 1984: 96, 190). In any case, neither Goidelic **talū-*, nor Brittonic **talo-*, both still preserving their vocalism in the 5th cent. CE, could have been adapted in the form Θούλη known from the 4th cent. BCE with a different vocalism, not to mention the absence of *Lautverschiebung* in Celtic altogether.

2.2. A more convincing solution was also formulated by Torp apud Nansen (1911: 58-59, fn. 3). Torp sought an origin of Θούλη in Old Norse *pollr* m. “tree”, usually “fir-tree”, also “pine-tree”, Swedish *tull* “top of a tree” < Proto-Germanic **pullaz*. De Vries (1962: 615-16) offered two etymologies:

2.2.1. Proto-Germanic **pullaz* < **tulno-* < **teuH₂-* “to be strong, become thick” (Pokorny 1959: 1081; reconstruction by Kümmel, *LIV* 639-40). Although de Vries did not offer any attempt to explain the semantic motivation of this etymology, it is possible to find it in the *l*-derivative² of this root preserved in Old English *ðyl-līc*, glossed as ‘densus’³ (*-līc*⁴ = “-like”), which could indicate the existence of the Germanic derivative of the stem **pulV-*

¹ From Proto-Celtic **talū-* Matasović (2009: 367) derives both the Goidelic and Brittonic forms. Further he connects **talū-* with Sanskrit *tālu-* “palate” (Vājasaneyi-Samhitā, *tāluka-* id. (Pāṇini), assuming the paradigm **teHlu-* vs. **tHleu-*. Probably a more archaic meaning besides “palate” was preserved in Prakrit *tālu-*, *tālua-* “palate; top of head”, continuing e.g. in Bengali *tālu* id., Hindi *tālū* “palate, lower part of skull” etc., further Dardic: Kashmiri *tāl* “palate, crown of head”, Shina Jijelut *tālu* “forehead”, Torwali *tāl* “top of head” vs. *tālū* “palate”, Shumashti *tālug* “top of head, temples” etc., and Nuristani: Waigali *talūk* “forehead” (Turner 1966, n. 5803). On the other hand, de Bernardo Stempel (1987: 146) derived the Celtic forms from **tHlo-* and further from the root **telH-* “to be flat” in agreement with Pokorny (1959: 1060). The starting point **tHlo-* also corresponds with the conclusions of Zair (2012: 169).

² Much (1918-19: 308; 1925: 52) also assumed the Germanic origin of Θούλη, seeking a support in the IE *l*-derivatives of this root like Greek *τόλη* & *τόλη* “bulge, callosity, pad, cushion”; Welsh *twl* “round elevation”; Old Church Slavonic *tylb* “neck”.

³ Cf. Holthausen 1963: 374. Clark Hall (1916: 371) speculated about the assimilation from **dīclīc*, derived from *dicce* “thick, solid” (why *-y-*?), or from **dýllīc*, derived from *dýn* “to press, squeeze, thrust, stab; coerce, restrain, oppress” (why is *-y-* not long?).

⁴ This *-līc* can cause the *i*-umlaut, cf. *dýslīc*, *dýllīc* “such” vs. *das* “thus” (cf. Clark Hall 1916: 316-18; Holthausen 1963: 372-75). That is why, *ðyl-* in *ðyllīc* ‘densus’ is derivable from **pul(V)-*.

with the meaning “dense forest”, similar to Old English *diccet* “place where there is dense growth, thicket” vs. *dicce* “thick, dense, firm” or German *Dickicht* “thicket” vs. *dick* “thick”. With the individualizing *n*-suffix (cf. Pronk 2015) we get **pulna-* > **pulla-* “tree”. The place-name Θούλη could perhaps represent the collective **pulō* “dense forests”.

2.2.2. Proto-Germanic **pullaz* < **t_l(H)no-* < **telH₂-* “to lift” (Pokorny 1959: 1060-61; reconstruction by Schirmer & Kümmel, *LIV* 622). A parallel semantic motivation may be found in Latin *arbor* “tree”, which has been derived from **h₂rd^h-ōs* “uprightness”, cf. Latin *arduus* “high” < **h₂rd^hyo* “upright” (de Vaan 2008: 50). Another example is from the West Slavic languages: Old Czech & Czech *strom*, Lower Lusatian *strom*, Polish dial. *strom* “tree”, all derived from the Proto-Slavic verb **stromiti*, which is the factitive to **strǫmĕti* “to tower, rise” > Serbo-Croatian *strǫmiti*, Slovenian *strǫmĕti*, Slovak *strmiev*, Czech *strmĕt*, Polish arch. *trzimić*, Ukrainian *stremity* id., and Old Church Slavonic *strǫmiti*, Russian *stremít* “to strive, endeavour”, besides the adj. **strǫmъ* > Old Church Slavonic adv. *strǫmъ* “hard, harshly, abruptly, starky”, Church Slavonic *strǫmъ*, Serbo-Croatian *strǫm*, Slovenian *strǫm*, Slovak, Czech *strmý*; **stromъ* > Polish *strómy*, Ukrainian arch. *strómyj*, all “steep, precipitous, abrupt, sheer” (Machek 1968: 582-83; Vykypěl, *ESJS* 15, 895).

This solution should be preferred, since the probable relatives of Old Norse *pollr*, namely Old Norse *þoll* f. “young spruce”, Icelandic *þöll*, Norwegian *toll*, *tall*, Danish, Swedish *tall* id.; German dial. *dale* “pine-tree” < Germanic **ballō* (de Vries 1962: 631), can be projected back to **tol(H)n-eH₂-*, which is derivable from IE **telH₂-*, but not from **teu_hH₂-*.

Note: Both the etymologies connecting Θούλη with Old Norse *pollr* m. “tree, fir-tree, pine-tree” can be supported by the witness of Procopius of Caesarea on the exceedingly large forests in Thule in his description of environment of the Scythiphini, the aboriginals of this territory:

θηρίων τε γὰρ καὶ ἄλλων ζώων μέγα τι χρῆμα αἶ τε ὕλαι αὐτοῖς φέρουσι, μεγάλαι ὑπερφυῶς οὔσαι, καὶ τὰ ὄρη, ἃ ταύτη ἀνέχει

“For the forests, which are exceedingly large, produce for them a great abundance of wild beasts and other animals, as do also the mountains which rise there.”

[*The Gothic War* VI.15; Translated by H.B. Dewing]

3. Collinder (1935/1936) offered a no less promising alternative etymology on the basis of the first component of the Old Norse compound *paularvágr*⁵ “winding creek”, where *vágr* means “sea, bay”, and some Scandinavian place-names as Norwegian *Taul*, *Taule*, or Swedish *Tölö* (cf. de Vries 1962: 606), assuming the primary semantics “the narrow fjords”. He also thought that the Old Norse diphthong *-au-* reflects *ού* from the Greek transcription of this geographic name. Already Noreen (1920: 25-26) connected Θούλη with the Swedish place-name *Tullinge*, first recorded as *Bulunge* in AD 1353. He also proposed the same Germanic origin for the tribal name *Tulingi* (never with expected *Th-*), according to Caesar (*de bello Gallico* 1.5.4, 1.25.13, 1.28.5, 1.29.6) the allies of the Celtic *Helvetii*, although their Germanic origin is doubtful. On the other hand, it is tempting to offer a new, ‘hydronymical’,

⁵ Cf. *Sverris Saga*, §51: *Gongum ut a scip. recum af os tiolldin. oc roum ut or þesom þaular-vagi.*

Let us go on board our ships, pull down the awnings, and row out of this **winding creek**.’

Sverris saga etter Cod. AM 327 4º, ed. Gustav Indrebø. Christiania: Dybwad, 1920.

Sverissaga – The Saga of King Sverri of Norway, translated by J. Stepton. London: Nutt, 1899.

etymology, based on Old Norse *-pul* known from the compound *Fimbulpul* ‘a river rising from the spring Hvergelmir’, which was perhaps related with Old English *geðyll* ‘breeze, draught, draft’ (de Vries 1962: 626). A common denominator of these meanings could be “flow (of water or air)”. It is tempting to speculate about a possibility of identifying under this flow a branch of the Gulf Stream⁶ flowing from the Shetland Islands to South Norway, which could in fact have brought Pytheas from the British Islands to Scandinavia. There are promising cognates outside of Germanic, namely Greek *σάλος* ‘turbulent movement of the sea, flushing of the waves, anchorage, roads (as opposed to a protected harbor)’, if derived from **tul(H)o-* (cf. Beekes 2010: 1303-04, 1517; Pokorný 1959: 1081), and Latin *tullius* ‘stream, torrent, deluge’ (Walde & Hofmann 1954: 714). Especially the Greek cognate supports the hypothesis that *Θούλη* could designate a ‘land flowed around by a sea stream’.

4. Hamp (1989: 84) speculated about a Pre-Hellenic origin of the term *Θούλη*, explaining it from **t̥H₂-eH₂* ‘earth’. It would have been adopted from a hypothetical substrate Indo-European language, where the changes **t > *tʰ* and **j > *ul* operated, corresponding to ‘Pelagic’ by V.I. Georgiev. An anonymous reviewer of this contribution states that the protoform **t̥H₂-eH₂* would have continued as Germanic **pulō* and it looks like a model for the toponym *Θούλη*. This is absolutely right, but in the actually attested Germanic languages there are preserved only the forms with the root vowel **-e-*, including the petrified archaic loans in Balto-Fennic and less archaic loans in Saamic languages (de Vries 1962: 608, 610; *EWAhD* II, cc. 644-47; *LGLO* III, 284-85; Qvigstad 1893: 129, 131):

**bela-* > Old Norse *þel* n. ‘ground; underwool’, Old Swedish *þiæl* n. ‘bottom in cloth’, Norwegian dial. *tel* ‘ground, underlay, piece of soil in plough’; Old English *ðel(l)* n. ‘board, plank, (metal) plate’; Old High German *dil* m. gl. ‘pluteus, planca, scindula’; cf. Finnish *tela* ‘roll, roller, cylinder; spindle’; pl. ‘stocks’, and Saami N *diello* ‘underlay; tablecloth’.

**belan-* > Old Norse *þeli* m. ‘frozen ground’, Old Swedish *þiæli, þiali* m. id., Norwegian *tele* ‘id.; bare rocky country, highland plain’; Old High German *dilo* m. gl. ‘pluteus, planca, scindula’; cf. Finnish *тели* ‘ice floe; frozen piece of earth; frozen layer of earth’ and Saami of Lenvik *dillē, Ibbestad tellē* ‘frozen ground’.

**þelja-* > Old Norse *þil* n. ‘board, plank; wall of boards’, Norwegian *til* ‘floor of free boards’.

**þeli-* > Old Saxon *thili* f. ‘board, plank’, Middle Low German *dēle* f. ‘board, plank’, Old High German *dili* m. gl. ‘pluteus, planca, scindula’.

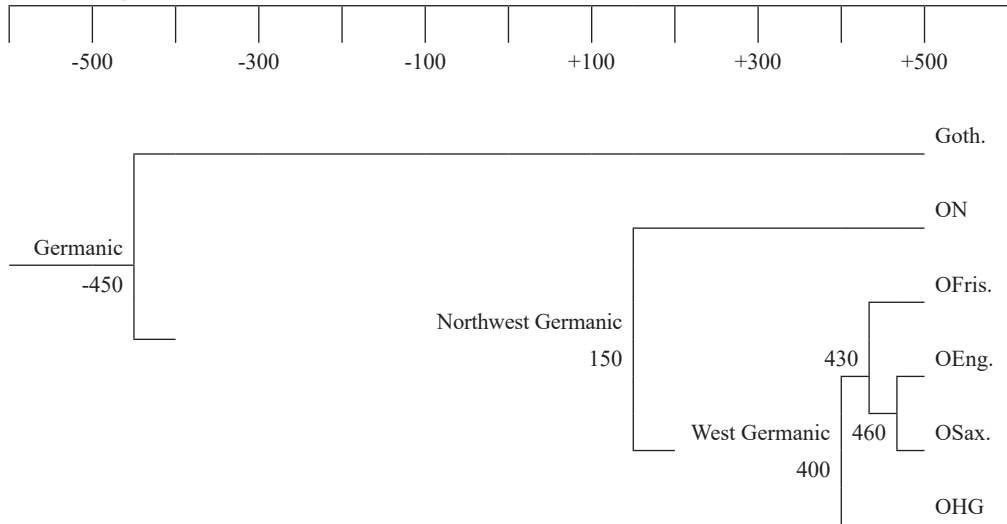
**þeljōn-* > Old Norse *þilja* f. ‘deal, plank, deck’, Swedish *tilja* ‘bottom deck or beam’; Old English f. *ðille* n. (gl.) ‘thin board, plank, flooring’, Old Frisian *tille* (instead of *thille*) ‘plank floor’; Old High German *dilla* f. gl. ‘pluteus, planca, scindula’; cf. Finnish *teljo* ‘thwart, seat’, pl. ‘sheets’, and Saami Lule *tillja, Hatfjelddal taļļā* ‘board on the bottom of a boat’.

In principle, it is possible to speculate about the existence of a hypothetical continuant of Germanic **pulō* in the lost part of the Gothic lexicon, which is really significantly limited in comparison with e.g. Old High German, Old English or Old Norse, but without any material base it is only an intellectual exercise. The etymological attempts discussed above offer real solutions.

⁶ Cf. e.g. <https://scijinks.gov/gulf-stream/>.

5. Independently of a decision between solutions 2.2. or 3, there is the witness that Lex Rask – Grimm was applied already in the 4th cent. BCE. The beginning of this sound rule should correlate with the disintegration of the Proto-Germanic dialect continuum into East and Northwest Germanic, dated only a century earlier, to the 5th cent. BCE:

Tree-diagram



See Malášková & Blažek 2012 [2016]: 10.

Text passages (in chronological order)

Polybius (203-120 BCE)

III. *Contra Priores Scriptores Geographicos Disputat Polybius*

Πολύβιος δὲ τὴν Εὐρώπην χωρογραφῶν τοὺς μὲν ἀρχαίους ἔαν φησι, τοὺς δ' ἐκείνους ἐλέγχοντας ἐξετάζειν Δικαίαιρχόν τε καὶ Ἐρατοσθένη τὸν τελευταῖον πραγματευσάμενον περὶ γεωγραφίας καὶ **Πυθέαν**, [2] ὅφ' οὐ παρακρουσθῆναι πολλούς, ὅλην μὲν τὴν Βρεττανικὴν ἐμβαδὸν ἐπελθεῖν φάσκοντας, τὴν δὲ περίμετρον πλειόνων ἢ τεττάρων μυριάδων ἀποδόντος τῆς νήσου, [3] προσιστορήσαντος δὲ καὶ τὰ περὶ τῆς **Θουόλης** καὶ τῶν τόπων ἐκείνων, ἐν οἷς οὔτε γῆ καθ' αὐτὴν ὑπῆρχεν ἔτι οὔτε θάλαττα οὔτ' ἀήρ, ἀλλὰ σύγκριμά τι ἐκ τούτων πλεύμονι θαλαττίῳ ἐοικὸς, [4] ἐν ᾧ φησι τὴν γῆν καὶ τὴν θάλατταν αἰωρεῖσθαι καὶ τὰ σύμπαντα, καὶ τοῦτον ὡς ἂν δεσμὸν εἶναι τῶν ὄλων, μῆτε πορευτὸν μῆτε πλωτὸν ὑπάρχοντα. [5] τὸ μὲν οὖν τῷ πλεύμονι ἐοικὸς αὐτὸς ἑωρακέναι, τᾶλλα δὲ λέγειν ἐξ ἀκοῆς. ταῦτα μὲν τὰ τοῦ **Πυθέου**, [6] καὶ διότι ἐπανελθὼν ἐνθὲνδε πᾶσαν ἐπέλθοι τὴν παρωκεανίτιν τῆς Εὐρώπης ἀπὸ Γαδεῖρων ἕως Τανάιδος: [7] φησὶ δ' οὖν ὁ Πολύβιος ἄπιστον καὶ αὐτὸ τοῦτο πῶς ἰδιώτη ἀνθρώπῳ καὶ πένητι τὰ τοσαῦτα διαστήματα πλωτὰ καὶ πορευτὰ γένοιτο. [8] τὸν δ' Ἐρατοσθένη διαπορήσαντα εἰ χρή πιστεῦναι τούτοις, ὅμως περὶ τῆς Βρεττανικῆς πεπιστευκέναι καὶ τῶν κατὰ Γάδειρα καὶ τὴν Ἰβηρίαν. [9] πολὺ δὲ φησι βέλτιον τῷ Μεσσηνίῳ πιστεῦναι ἢ τούτῳ: ὁ μέντοι γε εἰς μίαν χώραν τὴν Παγχαίαν λέγει πλεῦσαι: ὁ δὲ καὶ μέχρι τῶν τοῦ κόσμου περάτων κατωπτευκέναι τὴν

προσάρκτιον τῆς Εὐρώπης πᾶσαν, ἦν οὐδ' ἂν τῷ Ἑρμῇ πιστεῦσαι τις λέγοντι. [10] Ἐρατοσθένη δὲ τὸν μὲν Εὐήμερον Βεργαῖον καλεῖν, **Πυθέα** δὲ πιστεῦειν, καὶ ταῦτα μὴδὲ Δικαιάρχου πιστεῦσαντος. [11] τὸ μὲν οὖν “μὴδὲ Δικαιάρχου πιστεῦσαντος” γελοῖον, ὥσπερ ἐκείνῳ κανόνι χρῆσασθαι προσήκον, καθ' οὗ τοσοῦτους ἐλέγχους αὐτὸς προφέρεται: [12] Ἐρατοσθένους δὲ εἴρηται ἢ περὶ τὰ ἐσπέρια καὶ τὰ ἄρκτικά τῆς Εὐρώπης ἄγνοια. [13] ἀλλ' ἐκείνῳ μὲν καὶ Δικαιάρχῳ συγγνώμη τοῖς μὴ κατιδοῦσι τοὺς τόπους ἐκείνους: Πολυβίῳ δὲ καὶ Ποσειδωνίῳ τίς ἂν συγγνοίη; [14] ἀλλὰ μὴν Πολύβιός γε ἐστὶν ὁ λαοδογματικὰς καλῶν ἀποφάσεις, ἃς ποιοῦνται περὶ τῶν ἐν τούτοις τοῖς τόποις διαστημάτων καὶ ἐν ἄλλοις πολλοῖς, ἀλλ' οὐδ' ἐν.

Polybius, *Historiae*, ed. by Theodorus Büttner-Wobst after L. Dindorf.
Leipzig: Teubner. 1893f.

“Implausibility of Pytheas’s Geography

In treating of the geography of Europe I shall say nothing of the ancient geographers, but shall confine my attention to their modern critics, Dicæarchus, Eratosthenes, who is the most recent writer on geography, and **Pytheas**, who has misled many readers by professing to have traversed on foot the whole of Britain, the coastline of which island, he says, is more than forty thousand stades. And again by his stories of **Thule** and the countries in its neighbourhood, “in which,” he says, “there is neither unmixed land or sea or air, but a kind of compound of all three (like the jelly-fish or Pulmo Marinus), in which earth and sea and everything else are held in suspense, and which forms a kind of connecting link to the whole, through which one can neither walk nor sail.” This substance, which he says is like the Pulmo Marinus, he saw with his own eyes, the rest he learnt by report.

Such is **Pytheas**’s story, and he adds that, on his return thence, he traversed the whole of the coast of Europe from Gades to the Tanais. But we cannot believe that a private person, who was also a poor man, should have made such immense journeys by land and sea. Even Eratosthenes doubted this part of his story, though he believed what he said about Britain, and Gades, and Iberia. I would much rather believe the Messenian (Euhemerus) than him. The latter is content with saying that he sailed to one country which he calls Panchaia; while the former asserts that he has actually seen the whole northern coast of Europe up to the very verge of the world, which one would hardly believe of Hermes himself if he said it. Eratosthenes calls Euhemerus a Bergæan, yet believes **Pytheas**, though Dicæarchus himself did not. ... Eratosthenes and Dicæarchus give mere popular guesses as to distances.”

Polybius, *Histories*, translated by Evelyn S. Shuckburgh.
London – New York: Macmillan 1889.

Vergilius: *Georgica* (70-19 BCE)

1.30-31

²⁹*an deus immensi venias maris ac tua nautae*

³⁰*numina sola colant, tibi serviat ultima Thule*

³¹*teque sibi generum Tethys emat omnibus undis,*

“Or as the boundless ocean’s God thou come,
Sole dread of seamen, till **far Thule** bow
Before thee, and Tethys win thee to her son
With all her waves for dower”

Vergil, *Bucolics, Aeneid, and Georgics*, ed. by J.B. Greenough.
Boston: Ginn 1900

Strabo (c. 63 BCE – 17/23 CE)

1.4.2. ἑξῆς δὲ τὸ πλάτος τῆς οἰκουμένης ἀφορίζων φησὶν ἀπὸ μὲν Μερῶς ἐπὶ τοῦ δι' αὐτῆς μεσημβρινοῦ μέχρι Ἀλεξανδρείας εἶναι μυρίου, ἐνθένδε εἰς τὸν Ἑλλήσποντον περὶ ὀκτακισχιλίους ἑκατόν, εἴτ' εἰς Βορυσθένη πεντακισχιλίους, εἴτ' ἐπὶ τὸν κύκλον τὸν διὰ **Θούλης** (ἣν φησι Πυθέας ἀπὸ μὲν τῆς Βρεττανικῆς ἕξ ἡμερῶν πλοῦν ἀπέχειν πρὸς ἄρκτον, ἐγγὺς δ' εἶναι τῆς πεπηγυίας θαλάττης) ἄλλους ὡς μυρίου χιλίους πεντακοσίους. ἐὰν οὖν ἔτι προσθῶμεν ὑπὲρ τὴν Μερῶν ἄλλους τρισχιλίους τετρακοσίους, ἵνα τὴν τῶν Αἰγυπτίων νῆσον ἔχωμεν καὶ τὴν Κινναμομοφόρον καὶ τὴν Ταπροβάνην, ἔσσεσθαι σταδίους τρισμυρίους ὀκτακισχιλίους.

“After this he proceeds to determine the breadth of the habitable earth: he tells us, that measuring from the meridian of Meroe to Alexandria, there are 10,000 stadia. From thence to the Hellespont about 8100. Again; from thence to the Dnieper, 5000; and thence to the parallel of **Thule**, which Pytheas says is six days' sail north from Britain, and near the Frozen Sea, other 11,500. To which if we add 3400 stadia above Meroe in order to include the Island of the Egyptians, the Cinnamon country, and Taprobane, there will be in all 38,000 stadia.”

1.4.3. τὰ μὲν οὖν ἄλλα διαστήματα δεδόσθω αὐτῷ: ὁμολόγηται γὰρ ἰκανῶς: τὸ δ' ἀπὸ τοῦ Βορυσθένους ἐπὶ τὸν διὰ **Θούλης** κύκλον τίς ἂν δοίη νοῦν ἔχων; ὃ τε γὰρ ἰστορῶν τὴν **Θούλην** Πυθέας ἀνὴρ ψευδίστατος ἐξήτασται, καὶ οἱ τὴν Βρεττανικὴν καὶ Ἰέρνην ἰδόντες οὐδὲν περὶ τῆς **Θούλης** λέγουσιν, ἄλλας νήσους λέγοντες μικρὰς περὶ τὴν Βρεττανικὴν: αὐτὴ τε ἡ [p. 83] Βρεττανικὴ τὸ μῆκος ἴσως πῶς ἐστὶ τῇ Κελτικῇ παρεκτεταμένη, τῶν πεντακισχιλίων σταδίων οὐ μείζων καὶ τοῖς ἄκροις τοῖς ἀντικειμένους ἀφορίζομένη. ἀντίκειται γὰρ ἀλλήλοις τὰ τε ἑῷα ἄκρα τοῖς ἑῷοις καὶ τὰ ἐσπέρια τοῖς ἐσπερίοις, καὶ τὰ γε ἑῷα ἐγγὺς ἀλλήλων ἐστὶ μέχρις ἐπόψεως, τό τε Κάντιον καὶ αἰ τοῦ Ῥήνου ἐκβολαί. ὁ δὲ πλείονων ἢ δισμυρίων τὸ μῆκος ἀποφαίνει τῆς νήσου, καὶ τὸ Κάντιον ἡμερῶν τινων πλοῦν ἀπέχειν τῆς Κελτικῆς φησι: καὶ τὰ περὶ τοὺς Ὠστιμίους δὲ καὶ τὰ πέραν τοῦ Ῥήνου τὰ μέχρι Σκυθῶν πάντα κατένευσται τῶν τόπων. ὅστις οὖν περὶ τῶν γνωριζομένων τόπων τοσαῦτα ἔνευσται, σχολῆ γ' ἂν περὶ τῶν ἀγνωσμένων παρὰ πᾶσιν ἀληθεύειν δύναιτο.

“We will let pass the rest of his distances, since they are something near, but that the Dnieper is under the same parallel as **Thule**, what man in his senses could ever agree to this? Pytheas, who has given us the history of **Thule**, is known to be a man upon whom no reliance can be placed, and other writers who have seen Britain and Ierne, although they tell us of many small islands round Britain, make no mention whatever of **Thule**. The length of Britain itself is nearly the same as that of Keltica, opposite to which it extends. Altogether it is not more than 5000 stadia in length, its outermost points corresponding to those of the opposite continent. In fact the extreme points of the two countries lie opposite to each other, the eastern extremity to the eastern, and the western to the western: the eastern points are situated so close as to be within sight of each other, both at Kent and at the mouths of the Rhine. But Pytheas tells us that the island [of Britain] is more than 20,000 stadia in length, and that Kent is some days' sail from France. With regard to the locality of the Ostimii, and the countries beyond the Rhine, as far as Scythia, he is altogether mistaken. The veracity of a writer who has been thus false in describing countries with which we are well acquainted, should not be too much trusted in regard to unknown places.”

1.4.4. τὸν δὲ διὰ τοῦ Βορυσθένους παράλληλον τὸν αὐτὸν εἶναι τῷ διὰ τῆς Βρεττανικῆς εἰκάζουσιν Ἰππαρχὸς τε καὶ ἄλλοι ἐκ τοῦ τὸν αὐτὸν εἶναι καὶ τὸν διὰ Βυζαντίου τῷ διὰ Μασσαλίας: ὃν γὰρ λόγον εἶρηκε Πυθέας τοῦ ἐν Μασσαλία γνώμονος πρὸς τὴν σκιάν, τὸν αὐτὸν καὶ Ἰππαρχὸς κατὰ τὸν

όμενον καιρόν εύρειν ἐν τῷ Βυζαντίῳ φησίν. ἐκ Μασσαλίας δὲ εἰς μέσην τὴν Βρεττανικὴν οὐ πλέον τῶν πεντακισχιλίων ἐστὶ σταδίων. ἀλλὰ μὴν ἐκ μέσης τῆς Βρεττανικῆς οὐ πλέον τῶν τετρακισχιλίων προελθὼν εὖροις ἂν οἰκῆσιμον ἄλλως πως (τοῦτο δ' ἂν εἴη τὸ περὶ τὴν Ἰέρνην), ὥστε τὰ ἐπέκεινα, εἰς ἃ ἐκτοπίζει τὴν **Θούλην**, οὐκέτ' οἰκῆσιμα. τίμη δ' ἂν καὶ στοχασμῶ λέγοι τὸ ἀπὸ τοῦ διὰ **Θούλης** ἕως τοῦ διὰ Βορυσθένους μυρίων καὶ χιλίων πεντακοσίων, οὐχ ὀρθῶ.

“Further, Hipparchus and many others are of opinion that the parallel of latitude of the Dnieper does not differ from that of Britain; since that of Byzantium and Marseilles are the same. The degree of shadow from the gnomon which Pytheas states he observed at Marseilles being exactly equal to that which Hipparchus says he found at Byzantium; the periods of observation being in both cases similar. Now from Marseilles to the centre of Britain is not more than 5000 stadia; and if from the centre of Britain we advance north not more than 4000 stadia, we arrive at a temperature in which it is scarcely possible to exist. Such indeed is that of Ierne. Consequently the far region in which Eratosthenes places **Thule** must be totally uninhabitable. By what guesswork he arrived at the conclusion that between the latitude of **Thule** and the Dnieper there was a distance of 11,500 stadia I am unable to divine.”

1.4.5. διαμαρτῶν δὲ τοῦ πλάτους ἠνάγκασαι καὶ τοῦ μήκους ἀστοχεῖν. ὅτι μὲν γὰρ πλέον ἢ διπλάσιον τὸ γινώριμον μήκος ἐστὶ τοῦ γνωρίμου πλάτους, ὁμολογοῦσι καὶ οἱ ὕστερον καὶ τῶν παλαιῶν οἱ χαριέστατοι: λέγω δὲ τὸ ἀπὸ τῶν ἄκρων τῆς Ἰνδικῆς ἐπὶ τὰ ἄκρα τῆς Ἰβηρίας, τοῦ ἀπ' Αἰθιοπίων ἕως τοῦ κατὰ Ἰέρνην κύκλου. ὀρίσας δὲ τὸ λεχθὲν πλάτος, τὸ ἀπὸ τῶν ἐσχάτων Αἰθιοπίων μέχρι τοῦ διὰ **Θούλης** ἐκτείνει πλέον ἢ δεῖ τὸ μήκος, ἵνα ποιῆσῃ πλέον ἢ διπλάσιον τοῦ λεχθέντος πλάτους. φησὶ δ' οὖν τὸ μὲν τῆς Ἰνδικῆς μέχρι τοῦ Ἰνδοῦ ποταμοῦ τὸ στενώτατον σταδίων μυρίων ἑξακισχιλίων (τὸ γὰρ ἐπὶ τὰ ἀκρωτήρια τεῖνον τρισχιλίους εἶναι μερίζον), τὸ δὲ ἔνθεν ἐπὶ Κασπίους πύλας μυρίων τετρακισχιλίων, εἴτ' ἐπὶ τὸν Εὐφράτην μυρίων, ἐπὶ δὲ τὸν Νεῖλον ἀπὸ τοῦ Εὐφράτου πεντακισχιλίων, ἄλλους δὲ χιλίους καὶ τριακοσίους μέχρι Κανωβικοῦ στόματος, εἶτα μέχρι τῆς Καρχηδόνης μυρίους τρισχιλίους πεντακοσίους, εἶτα μέχρι στηλῶν ὀκτακισχιλίους τοῦλάχιστον: ὑπεραίρειν δὴ τῶν ἐπὶ μυριάδων ὀκτακοσίους. δεῖν δὲ ἔτι προσθεῖναι τὸ ἐκτὸς Ἡρακλείων στηλῶν κύρτωμα τῆς Εὐρώπης, ἀντικείμενον μὲν τοῖς Ἰβηρσι προπεπτωκὸς δὲ πρὸς τὴν ἐσπέραν, οὐκ ἔλαττον σταδίων τρισχιλίων, καὶ τὰ ἀκρωτήρια τὰ τε ἄλλα καὶ τὸ τῶν Ὠστιμίων, ὃ καλεῖται Κάβαιον, καὶ τὰς κατὰ τοῦτο νήσους, ὧν τὴν ἐσχάτην Οὐξισάμην φησὶ **Πυθέας** ἀπέχειν ἡμερῶν τριῶν πλοῦν. ταῦτα δ' εἰπὼν τὰ τελευταῖα οὐδὲν πρὸς τὸ μήκος συντείνοντα προσέθηκε τὰ περὶ τῶν ἀκρωτηρίων καὶ τῶν Ὠστιμίων καὶ τῆς Οὐξισάμης καὶ ὧν φησὶ νήσων: ταῦτα γὰρ πάντα προσάρκτια ἐστὶ καὶ Κελτικά, οὐκ Ἰβηρικά, μᾶλλον δὲ **Πυθέου** πλάσματα. προστίθησὶ τε τοῖς εἰρημένοις τοῦ μήκους διαστήμασιν ἄλλους σταδίους δισχιλίους μὲν πρὸς τῇ δύσει, δισχιλίους δὲ πρὸς τῇ ἀνατολῇ, ἵνα σώσῃ τὸ πλέον ἢ διπλάσιον τὸ μήκος τοῦ πλάτους εἶναι.

“Eratosthenes being mistaken as to the breadth [of the habitable earth], is necessarily wrong as to its length. The most accurate observers, both ancient and modern, agree that the known length of the habitable earth is more than twice its breadth. Its length I take to be from the [eastern] extremity of India to the [westernmost] point of Spain; and its breadth from [the south of] Ethiopia to the latitude of Ierne. Eratosthenes, as we have said, reckoning its breadth from the extremity of Ethiopia to **Thule**, was forced to extend its length beyond the true limits, that he might make it more than twice as long as the breadth he had assigned to it. He says that India, measured where it is narrowest, is 16,000 stadia to the river Indus. If measured from its most prominent capes it extends 3000 more. Thence to the Caspian Gates, 14,000. From the Caspian Gates to the

Euphrates, 10,000. From the Euphrates to the Nile, 5000. Thence to the Canopic mouth, 1300. From the Canopic mouth to Carthage, 13,500. From thence to the Pillars at least 8000. Which make in all 70,800 stadia. To these [he says] should be added the curvature of Europe beyond the Pillars of Hercules, fronting the Iberians, and inclining west, not less than 3000 stadia, and the headlands, including that of the Ostimii, named Cabæum, and the adjoining islands, the last of which, named Uxisama, is distant, according to **Pytheas**, a three days' sail. But he added nothing to its length by enumerating these last, viz. the headlands, including that of the Ostimii, the island of Uxisama, and the rest; they are not situated so as affect the length of the earth, for they all lie to the north, and belong to Keltica, not to Iberia; indeed it seems but an invention of **Pytheas**. Lastly, to fall in with the general opinion that the breadth ought not to exceed half the length, he adds to the stated measure of its length 2000 stadia west, and as many east.”

4.5.5. περί δὲ τῆς **Θούλης** ἔτι μᾶλλον ἀσαφῆς ἢ ἱστορία διὰ τὸν ἐκτοπισμόν: ταύτην γὰρ τῶν ὀνομαζομένων ἀρκτικωτάτην τιθέασιν. ἃ δ' εἶρηκε **Πυθέας** περὶ τε ταύτης καὶ τῶν ἄλλων τῶν ταύτη τόπων ὅτι μὲν ἐπέπλασται, φανερόν ἐκ τῶν γνωριζομένων χωρίων: κατέψευσται γὰρ αὐτῶν τὰ πλεῖστα, ὥσπερ καὶ πρότερον εἶρηται, ὥστε δῆλός ἐστιν ἐψευσμένος μᾶλλον περὶ τῶν ἐκτετοπισμένων. πρὸς μέντοι τὰ οὐράνια καὶ τὴν μαθηματικὴν θεωρίαν ἰκανῶς δόξει κεχρηῆσθαι τοῖς πράγμασι ... τοῖς τῆ κατεψυγμένη ζώνῃ πλησιάζουσι τὸ τῶν καρπῶν εἶναι τῶν ἡμέρων καὶ ζῶων τῶν μὲν ἀφορίαν παντελῆ τῶν δὲ σπάνιν, κέγγρω δὲ καὶ ἀγρίοις λαχάνοις καὶ καρποῖς καὶ ρίζαις τρέφεσθαι: παρ' οἷς δὲ σίτος καὶ μέλι γίγνεται, καὶ τὸ πόμα ἐντεῦθεν ἔχειν: τὸν δὲ σίτον, ἐπειδὴ τοὺς ἡλίους οὐκ ἔχουσι καθαρούς, ἐν οἴκοις μεγάλοις κόπτουσι, συγκομισθέντων δεῦρο τῶν σταχῶν: αἱ γὰρ ἄλλως ἄχρηστοι γίνονται διὰ τὸ ἀνήλιον καὶ τοὺς ὄμβρους.

“The account of **Thulé** is still more uncertain, on account of its secluded situation; for they consider it to be the northernmost of all lands of which the names are known. The falsity of what **Pytheas** has related concerning this and neighbouring places, is proved by what he has asserted of well-known countries. For if, as we have shown, his description of these is in the main incorrect, what he says of far distant countries is still more likely to be false. Nevertheless, as far as astronomy and the mathematics are concerned, he appears to have reasoned correctly, that people bordering on the frozen zone would be destitute of cultivated fruits, and almost deprived of the domestic animals; that their food would consist of millet, herbs, fruits, and roots; and that where there was corn and honey they would make drink of these. That having no bright sun, they would thresh their corn, and store it in vast granaries, threshing-floors being useless on account of the rain and want of sun.”

Strabo, *Geographica*, ed. A. Meineke. Leipzig: Teubner 1877.

The *Geography* of Strabo, literally translated, with notes, by H.C. Hamilton, W. Falconer. London: Bell & Sons 1903.

Geminus of Rhodes⁷ (10 BCE – 60 CE)

6.9. (pp. 70-73) Ἐπὶ δὲ τοὺς τόπους τούτους δοκεῖ καὶ **Πυθέας** ὁ Μασσαλιώτης παρεῖναι. φησὶ γοῦν ἐν τοῖς περὶ τοῦ ὠκεανοῦ πεπραγματευμένοις αὐτῷ, ὅτι “ἐδείκνυον ἡμῖν οἱ βάρβαροι, ὅπου ὁ ἥλιος κοιμάται. συνέβαινε γὰρ περὶ τούτους τοὺς τόπους τὴν μὲν νύκτα παντελῶς μικρὰν γίνεσθαι ὥρων οἷς μὲν δύο, οἷς δὲ τριῶν, ὥστε μετὰ τὴν δύσιν μικροῦ διαλείμματος γινομένου ἐπανατέλλειν εὐθέως τὸν ἥλιον.”

⁷ This passage was included for its witness about the arctic summer with very short nights.

“Bis in diese Gegenden scheint auch **Pytheas** von Massilia gekommen zu sein. Er sagt wenigstens in der von ihm verfassten Abhandlungen über das Weltmeer: ‘Es zeigten uns die Eingeborenen den Ort, wo die Sonne zur Rüste geht. Es traf sich nämlich, dass in diesen Gegenden die Nacht ganz kurz war, an manchen Orten zwei, an anderen drei Stunden, sodass die Sonne, nachdem sie untergegangen, nach Verlauf einer kurzen Zwischenzeit gleich wieder aufging.’”

Gemini *Elementa Astronomiae*, ed. by Carolus Manitius. Leipzig: Teubner 1898.

Pomponius Mela: *De chorographia* (15-45 CE)

3.57. *Thyle Belgarum litori adposita est, gravis et nostris celebrata carminibus, in ea, quod ibi sol longe occasurus exsurgit, breves utique noctes sunt, sed per hiemen sicut aliubi obscurae, aestate lucidae, quod per id tempus iam se altius evehens, quamquam ipse non cernatur, vicino tamen splendore proxima inlustrat, per solstitium vero nullae, quod tum iam manifestior non fulgorem modo sed sui quoque partem maximam ostentat.*

Pomponius Mela, *De chorographia*, ed. by Gustavus Parthey. Berlin: Effert & Lindtner 1867.

“**Thule** is located near the coast of the Belgae, who are celebrated in Greek poetry and in our own. On it – because there the sun rises far from where it will set – nights are necessarily brief, but all winter long they are as dark as anywhere, and in summer, bright. All summer the sun moves higher in the sky at this time, and although it is not actually seen at night, the sun nevertheless illuminates adjacent places when its radiance is close by; but during the solstice there is no night, because at that time the sun is now more visible and shows not only its brilliance but most of itself too.”

Pomponius Mela’s *Description of the World*, translated by F.E. Romer. Ann Arbor: The University of Michigan Press 2001.

Pliny: *Historiae Naturalis* (23-79 CE)

2.75/77. *sic fit, ut vario lucis incremento in meroe longissimus dies xii horas aequinoctiales et octo partes unius horae colligat, alexandriae vero xiiii horas, in italia xv, in britannia xvii, ubi aestate lucidae noctes haut dubie se promittunt, id quod cogit ratio credi, solstiti diebus accedente sole propius verticem mundi angusto lucis ambitu subiecta terrae continuos dies habere senis mensibus noctesque e diverso ad brumam remoto. quod fieri in insula **thyle** pytheas massiliensis scribit, sex dierum navigatione in septentrionem a britannia distante, quidam vero et in mona, quae distat a camaloduno britanniae oppido circiter [cc], adfirmant.*

“Hence it follows, that in consequence of the daylight increasing in various degrees, in Meroë the longest day consists of twelve æquinoctial hours and eight parts of an hour¹, at Alexandria of fourteen hours, in Italy of fifteen, in Britain of seventeen; where the degree of light, which exists in the night, very clearly proves, what the reason of the thing also obliges us to believe, that, during the solstitial period, as the sun approaches to the pole of the world, and his orbit is contracted, the parts of the earth that lie below him have a day of six months long, and a night of equal length when he is removed to the south pole. Pytheas, of Marseilles, informs us, that this is the case in the island of **Thule**, which is six days’ sail from the north of Britain. Some persons also affirm that this is the case in Mona, which is about 200 miles from Camelodunum, a town of Britain.”

6.72/39. *sequentium diligentissimi quod superest terrarum supra tribus adsignavere segmentis, a Tanai per Maeotim lacum et Sarmatas usque Borysthenen atque ita per Dacos partemque Germaniae, Gallias oceani litora amplexi, quod esset horarum XVI, alterum per Hyperboreos et Britanniam horarum XVII, postremum Scythicum a Ripaeis iugis in **Thylen**, in quo dies continuarentur, ut diximus, noctesque per vices.*

“The first {parallel} runs from the Tanais through the Mæotis and the country of the Sarmatæ, as far as the Borysthenes, and so through the Daci and part of Germany, and the Gallic provinces, as far as the shores of the ocean, the longest day being sixteen hours.

The second parallel runs through the country of the Hyperborei and the island of Britannia, the longest day being seventeen hours in length.

The last of all is the Scythian parallel, which runs from the Riphæan range to **Thule**, in which, as we have already stated, the year is divided into days and nights alternately, of six months’ duration.”

4.104/41/30. *ex adverso huius situs britannia insula, clara graecis nostrisque monimentis, inter septentrionem et occidentem iacet, germaniae, galliae, hispaniae, multo maximis europae partibus, magno intervallo adversa. albion ipsi nomen fuit, cum britanniae vocarentur omnes de quibus mox paulo dicemus. haec abest a gesoriaco morinorum gentis litore proximo traiectu [1]. circuitu patere [30xxxviii]30 lxxv] pytheas et isidorus tradunt, xxx prope iam annis notitiam eius romanis armis non ultra vicinitatem silvae calidoniae propagantibus. agrippa longitudinem [dccc] esse, latitudinem [ccc] credit, eandem hiberniae, sed longitudinem [cc] minorem. super eam haec sita abest brevissimo transitu a silurum gente [xxx]. reliquarum nulla [cxxxv] amplior circuitu proditur. sunt autem xl orcaes, modicis inter se discretæ spatiis, vii haemodae, xxx hebudes et inter hiberniam ac britanniam mona, monapia, riginia, vectis, silumnus, andros, infra vero samnis et axanthos et ab adversa in germanicum mare sparsae glaesiae, quas electridas graeci recentiores appellavere, quod ibi electrum nasceretur. ultima omnium quae memorantur **tyle**, in qua solstitio nullas esse noctes indicavimus, cancri signum sole transeunte, nullosque contra per brumam dies. hoc quidam senis mensibus continuis fieri arbitrantur. timaeus historicus a britannia introrsus sex dierum navigatione abesse dicit insulam ictim, in qua candidum plumbum proveniat; ad eam britannos vitilibus navigiis corio circumstus navigare. sunt qui et alias prodant, scandias, dumnam, bergos maximamque omnium berricen, ex qua in **tylen** navigetur a **tyle** unius diei navigatione mare concretum a nonnullis cronium appellatur.*

“Opposite to this coast is the island called Britannia, so celebrated in the records of Greece and of our own country. It is situate to the north-west, and, with a large tract of intervening sea, lies opposite to Germany, Gaul, and Spain, by far the greater part of Europe. Its former name was Albion; but at a later period, all the islands, of which we shall just now briefly make mention, were included under the name of “Britanniae.” This island is distant from Gesoriacum, on the coast of the nation of the Morini, at the spot where the passage across is the shortest, fifty miles. Pytheas and Isidorus say that its circumference is 4875 miles. It is barely thirty years since any extensive knowledge of it was gained by the successes of the Roman arms, and even as yet they have not penetrated beyond the vicinity of the Caledonian forest. Agrippa believes its length to be 800 miles, and its breadth 300; he also thinks that the breadth of Hibernia is the same, but that its length is less by 200 miles. This last island is situate beyond Britannia, the passage across being the shortest from the territory of the Silures, a distance of thirty miles. Of the remaining islands none is said to have a greater circumference than 125 miles. Among these there are the Orcaes, forty in number, and situate within a short distance of each other,

the seven islands called Acmodæ, the Hæbudes, thirty in number, and, between Hibernia and Britannia, the islands of Mona, Monapia, Ricina, Vectis, Limnus, and Andros. Below it are the islands called Samnis and Axantos, and opposite, scattered in the German Sea, are those known as the Glæsariæ, but which the Greeks have more recently called the Electrides, from the circumstance of their producing *electrum* or amber. The most remote of all that we find mentioned is **Thule**, in which, as we have previously stated, there is no night at the summer solstice, when the sun is passing through the sign of Cancer, while on the other hand at the winter solstice there is no day. Some writers are of opinion that this state of things lasts for six whole months together. Timæus the historian says that an island called Mictis is within six days' sail of Britannia, in which white lead is found; and that the Britons sail over to it in boats of osier, covered with sewed hides. There are writers also who make mention of some other islands, Scandia namely, Dumna, Bergos, and, greater than all, Nerigos, from which persons embark for **Thule**. At one day's sail from **Thule** is the frozen ocean, which by some is called the Cronian Sea."

Plinius, *Naturalis Historia*, ed. by Karl Friedrich Theodor Mayhoff. Lipsiae: Teubner 1906.

Pliny the Elder, *The Natural History*, translated by John Bostock, H.T. Riley.

London: Taylor & Francis 1855.

Stattius: *Silvae* (45-96 CE)

3.5. *Ad uxorem*

*sed probitas et opaca quies et sordida numquam
gaudia. quas autem comitem te raptō per undas?
quamquam, et si gelidas irem mansurus ad Arctos*
²⁰*vel super Hesperiae vada caligantia **Thyles**,
aut septemgemini caput impenetrabile Nili,
hortarere vias. etenim tua (nempe benigna
quam mihi sorte Venus iunctam florentibus annis
servat et in senium), tua, quae me vulnere primo*
²⁵*intactum thalamis et adhuc iuvenile vagantem,
fixisti, tua frena libens docilisque recepi,
et semel insertas non mutaturus habenas
usque premo. tu me nitidis Albana ferentem
dona comis sanctoque indutum Caesaris auro*
³⁰*visceribus complexa tuis, sertisque dedisti,
oscula anhela meis; tu, cum Capitolia nostrae
infitiata lyrae, saevum ingratumque dolebas
mecum victa Iovem;*

P. Papinius Statius, *Silvae*, Vol I, ed. by John Henry Mozley.

London: William Heinemann – New York: G.P. Putnam's Sons 1928.

"Nay, for that matter even though I were journeying to set up my rest in the frozen North, or beyond the gloomy waters of **Thule** in the West, or the wayless sources of sevenfold Nile, you would have sped me on my path. For you, you, whom Venus of her gracious bounty wedded to me in the heyday of youth and guards for mine into old age, you, who at the first, when I was yet virgin, did with a first love fix my roving fancy, you it is whose guidance I have welcomed with cheerful obedience: even as a steed that will know no change but keep ever true to the master whose control he has once acknowledged. When my brow was bright with the Alban wreath and Caesar's golden chaplet was on

my head, it was you who clasped me to your heart and showered breathless kisses on my laurels: it was you, when the Capitol disdained my lays, you who shared my defeat and fretted with me at the ingratitude and cruelty of Jove.”

The Silvae of Statius, translated by D.A. Slater. Oxford: Clarendon Press 1908.

Tacitus: *Agricola* (56-120 CE)

§10. *Britanniae situm populosque multis scriptoribus memoratos non in comparationem curae ingeniive referam, sed quia tum primum perdomita est. ita quae priores nondum [2] comperta eloquentia percoluere, rerum fide tradentur. Britannia, insularum quas Romana notitia complectitur maxima, spatio ac caelo in orientem Germaniae, in occidentem Hispaniae obtenditur, Gallis in meridiem etiam inspicitur; septentrionalia eius, nullis contra terris, vasto atque aperto [3] mari pulsantur. formam totius Britanniae Livius veterum, Fabius Rusticus recentium eloquentissimi auctores oblongae [4] scutulae vel bipenni adsimulavere. et est ea facies citra Caledoniam, unde et in universum fama: transgressis inmensum et enorme spatium procurrentium extremo iam [5] litore terrarum velut in cuneum tenuatur. hanc oram novissimi maris tunc primum Romana classis circumvecta insulam esse Britanniam adfirmavit, ac simul incognitas ad id tempus [6] insulas, quas Orcadas vocant, invenit domuitque. dispecta est et **Thule**, quia hactenus iussum, et hiems adpetebat. sed mare pigrum et grave remigantibus perhibent ne ventis quidem perinde attolli, credo quod rariores terrae montesque, causa ac materia tempestatum, et profunda moles continui [7] maris tardius impellitur. naturam Oceani atque aestus neque quaerere huius operis est, ac multi rettulere: unum addiderim, nusquam latius dominari mare, multum fluminum huc atque illuc ferre, nec litore tenus ad crescere aut resorberi, sed influere penitus atque ambire, et iugis etiam ac montibus inseri velut in suo.*

§10. “Britain, the largest of the islands which Roman geography includes, is so situated that it faces Germany on the east, Spain on the west; on the south it is even within sight of Gaul; its northern extremities, which have no shores opposite to them, are beaten by the waves of a vast open sea. The form of the entire country has been compared by Livy and Fabius Rusticus, the most graphic among ancient and modern historians, to an oblong shield or battle-axe. And this no doubt is its shape without Caledonia, so that it has become the popular description of the whole island. There is, however, a large and irregular tract of land which juts out from its furthest shores, tapering off in a wedge-like form. Round these coasts of remotest ocean the Roman fleet then for the first time sailed, ascertained that Britain is an island, and simultaneously discovered and conquered what are called the Orcades, islands hitherto unknown. **Thule** too was descried in the distance, which as yet had been hidden by the snows of winter. Those waters, they say, are sluggish, and yield with difficulty to the oar, and are not even raised by the wind as other seas. The reason, I suppose, is that lands and mountains, which are the cause and origin of storms, are here comparatively rare, and also that the vast depths of that unbroken expanse are more slowly set in motion. But to investigate the nature of the ocean and the tides is no part of the present work, and many writers have discussed the subject. I would simply add, that nowhere has the sea a wider dominion, that it has many currents running in every direction, that it does not merely flow and ebb within the limits of the shore, but penetrates and winds far inland, and finds a home among hills and mountains as though in its own domain.”

Cornelius Tacitus, *The Life of Cnaeus Julius Agricola*. In: *Complete Works of Tacitus*, ed. by Alfred John Church, William Jackson Brodribb. New York: Random House 1876.

Juvenal: *Satires* (50/67-127 CE)

Satire 15

¹¹⁰*nunc totus Graias nostrasque habet orbis Athenas,*¹¹¹*Gallia causidicos docuit facunda Britannos,*¹¹²*de conducendo loquitur iam rhetore Thyle.*Juvenal and Persius, *Satires*, with an English translation by G. G. Ramsay.

London – New York: William Heinemann – G. P. Putnam’s Son, 1918.

“Now the whole world has the Grecian and our Athens.

Eloquent Gaul, has taught the Britons to become pleaders;

and even **Thule** talks of hiring a rhetorician.”*The Satires of Juvenal, Persius, Sulpicia and Lucilius*, translated by Lewis Evans.

London: Bohn 1860.

Ptolemy: *Geographia* (c. 150 CE)

2.3.32

Καὶ ἔτι ὑπὲρ αὐτὰς Θούλη, ἧς τὰ μὲν

δυσμικώτατα ἐπέχει μοίρας κθ ξγ

τὰ δὲ ἀνατολικώτατα λα γ’ο ξγ

τὰ δὲ ἀρκτικώτατα λ γ’ ξγ δ’

τὰ δὲ νοτιώτατα λ γ’ ξβ γ’ο

τὰ δὲ μετὰ λ γ’ ξγ.

Edited by Nobbe 1966.

“Far above these is the island **Thule**.

The part of this which extends much toward the west is in 29°00 63°00

that which is farthest eastward is 31°40 63°00

that which is farthest northward is 30°20 63°15

that which is farthest southward is 30°20 62°40

the middle is in 30°20 63°00”

Translated by Stevenson 1932.

Orosius: *Historiae adversum paganos* (375/385-420 CE)

1.2. *Britannia oceani insula per longum in boream extenditur; a meridie Gallias habet. cuius proximum litus transmeantibus ciuitas aperit, quae dicitur Rutupi portus; unde haud procul a Morinis in austro positos Menapos Batauosque prospectat. haec insula habet in longo milia passuum DCCC, in lato milia CC.*

A tergo autem, unde oceano infinito patet, Orcadas insulas habet, quarum XX desertae sunt, XIII coluntur.

Deinde insula Thyle, quae per infinitum a ceteris separata, circum uersus medio sita oceani, uix paucis nota habetur.

Hibernia insula inter Britanniam et Hispaniam sita longiore ab Africo in boream spatio porrigitur. huius partes priores intentae Cantabrico oceano Brigantiam Gallaeciae ciuitatem ab Africo sibi in circum occurrentem spatioso interuallo procul spectant, ab eo praecipue promunturio, ubi Scenae fluminis ostium est et Velabri Lucenique consistunt. haec propior Britanniae, spatio terrarum angustior, sed caeli solique temperie magis utilis, a Scottorum gentibus colitur.

Huic etiam Mevania insula proxima est et ipsa spatio non parua, solo commoda. aequae a Scottorum gentibus habitatur.

Hi sunt fines totius Europae.

Orosius, *Historiarum adversum paganos libri VII*, ed. K. Zangemeister.
Leipzig: Teubner 1889.

“Inasmuch as there are in the Ocean islands called Britain and Ireland, which are situated opposite the Gauls in the direction of Spain, they will be briefly described.

Britain, an island in the Ocean, extends a long distance to the north; to its south are the Gauls. The city called Portus Rutupi affords the nearest landing place for those who cross the water. From this point Britain faces directly the territories of the Menapi and Batavi, which are located not far from the land of the Morini in the south. This island is eight hundred miles long and two hundred miles wide.

In the limitless ocean which stretches behind Britain are the Orcades Islands, of which twenty are deserted and thirteen inhabited.

Next comes the island of **Thule**, which is separated from the others by a great space and is situated in the middle of the Ocean toward the northwest; it is known to only a few.

Ireland, an island situated between Britain and Spain, is of greater length from south to north. Its nearer coasts, which border on the Cantabrian Ocean, look out over the broad expanse in a southwesterly direction toward far-off Brigantia, a city of Gallaecia, which lies opposite to it and which faces to the northwest. This city is most clearly visible from that promontory where the mouth of the Scena River is found and where the Velabri and the Luceni are settled. Ireland is quite close to Britain and is smaller in area. It is, however, richer on account of the favorable character of its climate and soil. It is inhabited by tribes of the Scotti.

The island of Mevania, its next door neighbor, is itself fair sized and possesses a rich soil. It, too, is inhabited by tribes of the Scotti.

These are the boundaries of all the countries of Europe.”

Orosius, *Seven Books of History Against the Pagans*, translated by Irving W. Raymond.
New York: Columbia University Press 1936.

Procopius of Caesarea: “The Gothic War” (c. 500 – c. 565/570 CE)

VI.15. **Θούλη** μεγίστη ἐς ἄγαν. Βρεττανίας γὰρ αὐτὴν πλέον ἢ δεκαπλασίαν ξυμβαίνει εἶναι. κείται δὲ αὐτῆς πολλῶ ἀποθεν πρὸς βορρᾶν ἄνεμον. ἐν ταύτῃ τῇ νήσῳ γῆ μὲν ἔρημος ἐκ τοῦ ἐπὶ πλείστον τυγχάνει οὖσα, ἐν χώρᾳ δὲ τῇ οἰκουμένη τριακαίδεκα ἔθνη πολυανθρωπότατα ἴδρυται· βασιλεῖς τέ εἰσι κατὰ ἔθνος ἕκαστον. ἐνταῦθα γίνεται ἀνὰ πᾶν ἔτος θαυμάσιον. ὁ γὰρ ἥλιος ἀμφὶ θερινὰς μὲν τροπὰς μάλιστα ἐς ἡμέρας τεσσαράκοντα οὐδαμῶς δύει, ἀλλὰ διηνεκῶς ἐς πάντα τοῦτον τὸν χρόνον ὑπὲρ γῆς φαίνεται. μῆσι δὲ οὐχ ἦσσαν ἢ ἕξ ὕστερον ἀμφὶ τὰς χειμερινὰς τροπὰς ἥλιος μὲν ἐς ἡμέρας τεσσαράκοντα τῆς νήσου ταύτης οὐδαμῶς φαίνεται, νύξ δὲ αὐτῆς ἀπέραντος κατακέχυται· κατήφειά τε ἀπ’ αὐτοῦ ἔχει πάντα τοῦτον τὸν χρόνον τοὺς τῆδε ἀνθρώπους, ἐπεὶ ἀλλήλοις ἐπιμίγνυσθαι μεταξύ οὐδαμῶς μηχανῆ ἔχουσιν. ἐπεὶ μὲν οὖν ἐς ταύτην ἰέναι τὴν νῆσον τῶν τε εἰρημένων αὐτόπτη γενέσθαι, καίπερ γλιχομένῳ, τρόπῳ οὐδενὶ ξυνηγέθη. τῶν μέντοι ἐς ἡμᾶς ἐνθόνδε ἀφικομένων ἐπυθανόμην ὅπη ποτὲ οἴοι τε ** ἀνίσχοντος εἴτε δύοντος τοῖς καθήκουσι χρόνοις ἐνταῦθα ἡλίου. οἵπερ ἐμοὶ λόγον ἀληθῆ τε καὶ πιστὸν ἔφρασαν.

τὸν γὰρ ἥλιον φασὶ τεσσαράκοντα ἡμέρας ἐκείνας οὐ δύειν μὲν, ὥσπερ εἴρηται, φῶς δὲ τοῖς ταύτῃ ἀνθρώποις φαίνεσθαι πῆ μὲν πρὸς ἕω, πῆ δὲ πρὸς ἐσπέραν. ἐπειδὴν οὖν ἐπανιών αὐθις ἀμφὶ τὸν ὀρίζοντα τε γινόμενος ἐς τὸν αὐτὸν ἀφίκεται χῶρον, οὐπερ αὐτὸν ἀνίσχοντα τὰ πρῶτα ἐώρων, ἡμέραν

οὕτω καὶ νύκτα μίαν παρχωφκέναι διαριθμοῦνται. καὶ ἡνίκα μέντοι ὁ τῶν νυκτῶν χρόνος ἀφίκηται, τῆς γε σελήνης τῷ ὀρᾶσθαι ἀεὶ τοῖς δρόμος τεκμηριούμενοι τὸ τῶν ἡμερῶν λογιζονται μέτρον. ὀπηνίκα δὲ πέντε καὶ τριάκοντα ἡμερῶν χρόνος τῇ μακρᾷ ταύτῃ διαδράμοι νυκτὶ, στέλλονται μετρες ἐς τῶν ὀρῶν τὰς ὑπερβολὰς, εἰθισμένον αὐτοῖς τοῦτό γε, τὸν τε δὴ ἥλιον ἀμηνέπη ἐνθένδε ὀρῶντες ἀπαγγέλουσι τοῖς κάτω ἀνθρώποις, ὅτι δὴ πέντε ἡμερῶν ἥλιος αὐτοὺς καταλάμψοι. οἱ δὲ πανδημεὶ πανηγυρίζουσιν εὐαγγέλια καὶ ταῦτα ἐν σκότῳ. αὕτη τε **Θουλίταις** ἡ μεγίστη τῶν ἑορτῶν ἐστὶ. δοκοῦσι γάρ μοι περιδεεῖς ἀεὶ γίνεσθαι οἱ νησιῶται οὗτοι, καίπερ ταῦτὸ ζυμβαῖνον σφίσιν ἀνὰ πᾶν ἔτος, μὴ ποτε αὐτοὺς ἐπιλείπει τὸ παράπαν ὁ ἥλιος. Τῶν δὲ ἰδρυμένων ἐν **Θουλίᾳ** βαρβάρων ἐν μόνον ἔθνος, οἱ Σκριθίφινοι ἐπικαλονται, θηριώδη τινὰ βιοτήν ἔχουσιν. οὔτε γὰρ ἱμάτια ἐνδιδύσκονται οὔτε ὑποδεδεμένοι βαδίζουσιν οὔτε οἶνον πίνουσιν οὔτε τι ἐδώδιμον ἐκ τῆς γῆς ἔχουσιν. οὔτε γὰρ αὐτοὶ γῆν γεωργοῦσιν οὔτε τι αὐτοῖς αἱ γυναῖκες ἐργάζονται, ἀλλὰ ἄνδρες ἀεὶ ζῆν ταῖς γυναιξὶ τὴν θήραν μόνην ἐπιτηδεύουσι. **θηρίων τε γὰρ καὶ ἄλλων ζῴων μέγα τι χρῆμα αἱ τε ὕλαι αὐτοῖς φέρουσι, μεγάλοι περφυῶς οὔσαι, καὶ τὰ ὄρη, ταύτη ἀνέχει.** καὶ κρέασι μὲν θηρίων ἀεὶ τῶν ἀλισκομένων σιτίζονται, τὰ δέρματα δὲ ἀμφιέννυνται, ἐπεὶ τε αὐτοῖς οὔτε λίνον οὔτε ὄτῳ ῥάπτουσι ἐνεστιν, οἱ δὲ τῶν θηρίων τοῖς νεύροις τὰ δέρματα ἐς ἄλληλα ταῦτα ζυνδέοντες οὕτω δὴ ἐς σῶμα ὅλον ἀμπίσχονται. οὐ μὴν οὐδὲ τὰ βρέφη αὐτοῖς κατὰ ταῦτὰ τιθοῦνται τοῖς ἄλλοις ἀνθρώποις.

“Now **Thule** is exceedingly large; for it is more than ten times greater than Britain. And it lies far distant from it toward the north. On this island the land is for the most part barren, but in the inhabited country thirteen very numerous nations are settled; and there are kings over each nation. In that place a very wonderful thing takes place each year. For the sun at the time of the summer solstice never sets for forty days, but appears constantly during this whole time above the earth. But not less than six months later, at about the time of the winter solstice, the sun is never seen on this island for forty days, but never-ending night envelops it; and as a result of this dejection holds the people there during this whole time, because they are unable by any means to mingle with one another during this interval. And although I was eager to go to this island and become an eye-witness of the things I have told, no opportunity ever presented itself. However, I made enquiry from those who come to us from the island as to how in the world they are able to reckon the length of the days, since the sun never rises nor sets there at the appointed times. And they gave me an account which is true and trustworthy. For they said that the sun during those forty days does not indeed set just as has been stated, but is visible to the people there at one time toward the east, and again toward the west. Whenever, therefore, on its return, it reaches the same place on the horizon where they had previously been accustomed to see it rise, they reckon in this way that one day and night have passed. When, however, the time of the nights arrives, they always take note of the courses of the moon and stars and thus reckon the measure of the days. And when a time amounting to thirty-five days has passed in this long night, certain men are sent to the summits of the mountains – for this is the custom among them – and when they are able from that point barely to see the sun, they bring back word to the people below that within five days the sun will shine upon them. And the whole population celebrates a festival at the good news, and that too in the darkness. And this is the greatest festival which the natives of **Thule** have; for, I imagine, these islanders always become terrified, although they see the same thing happen every year, fearing that the sun may at some time fail them entirely. But among the barbarians who are settled in **Thule**, one nation only, who are called the Scythiphini, live a kind of life akin to that of the beasts. For they neither wear garments of cloth nor do they walk with shoes on their feet, nor do they drink wine nor derive anything edible from the earth. For they neither till the land themselves, nor do their women work it for them, but the women regularly

join the men in hunting, which is their only pursuit. **For the forests, which are exceedingly large, produce for them a great abundance of wild beasts and other animals, as do also the mountains which rise there.** And they feed exclusively upon the flesh of the wild beasts slain by them, and clothe themselves in their skins, and since they have neither flax nor any implement with which to sew, they fasten these skins together by the sinews of the animals, and in this way manage to cover the whole body. And indeed not even their infants are nursed in the same way as among the rest of mankind.”

Procopius, *Historiae*, Vol. II, ed. Guilielmo Dindorfi. Bonn: Weber 1833

Procopius, *History of the Wars*, translated by H.B. Dewing.

London: Heinemann – New York: Putnam’s Sons 1919.



Figure 1. Pytheas's probable routes according to Nansen (1911: 49)

References

- Beekes, R., with assistance of Lucien van Beek. 2010. *Etymological dictionary of Greek*. Vols. I-II. Leiden, Boston: Brill.
- de Bernardo Stempel, P. 1987. *Die Vertretung der indogermanischen liquiden und nasalen Sonanten im Keltischen* (Innsbrucker Beiträge zur Sprachwissenschaft 54). Innsbruck: Universität Innsbruck.
- Clark Hall, J.R. 1916. *A concise Anglo-Saxon dictionary*. New York: The MacMillan Company.
- Collinder, B. 1935. Der älteste überlieferte germanische Name. In *Nomina Germanica: Hyllningskrift till Bengt Ivar Hesselman den 21 december 1935*, 92-97. Lund: Lundequistska bokhandeln (= *Namn och bygd* 24, 1936, 92-97).
- Delamarre, X. 2018. *Dictionnaire de la langue gauloise*.³ Paris: Errance.
- DIL* = *Dictionary of the Irish language*. 1998. Dublin: Royal Irish Academy (Compact Edition).
- ESJS* = Havlová, E. et alii (eds.). 1989f. *Etymologický slovník jazyka staroslověnského*. Praha: Academia – Brno: Tribun EU.
- EWAhD* II = Lloyd, A.L. & Lühr, R. & Springer, O. & Purdy, K.R. 1998. *Etymologisches Wörterbuch des Althochdeutschen*, Bd. II: *bī – ezso*. Göttingen – Zürich: Vandenhoeck & Ruprecht.
- Hamp, E.P. 1989. Prehellenica. 8. Thule, Thyle. *Živa antika* 39. 84.
- Holthausen, F. 1963. *Altenglisches Etymologisches Wörterbuch*.² Heidelberg: Winter.
- Korolev, A.A. 1984. *Drevnejšie pamjatniki irlandskogo jazyka*. Moskva: Nauka.
- LEIA* = Vendryes, J. (par les soins de E. Bachellery et P.-Y. Lambert). 1978. *Lexique étymologique de l'irlandais ancien* (T-U). Dublin: Institute for Advanced Studies – Paris: CNRS Éditions.
- LGLO* III = Hahmo, S.-L. & Hofstra, T. & Nikkilä, O. 2012. *Lexikon der älteren germanischen Lehnwörter in den ostseefinnischen Sprachen*, Bd. II: K-O. Amsterdam & Atlanta: Rodopi.
- LIV* = Rix, H. (ed.) & Kümmel, M. & Zehnder, T. & Lipp, R. & Schirmer, B. 2001. *Lexikon der indogermanischen Verben*.² Wiesbaden: Reichert.
- Machek, V. 1968. *Etymologický slovník jazyka českého*.² Praha: Academia.
- Malášková, Z. & Blažek, V. 2012 [2016]. On the position of Frisian within the West Germanic continuum. *Philologia Fenno-Ugrica et Indoeuropaea (Zeitschrift für finnisch-ugrische Philologie, indoeuropäische und diachrone Linguistik)* 18. 1-23.
- Matasović, R. 2009. *Etymological dictionary of Proto-Celtic*. Leiden – Boston: Brill.
- Meyer-Lübke, W. 1935. *Romanisches etymologisches Wörterbuch*. Heidelberg: Winter.
- Much, R. 1918-1919. Taunus. In Hoops, J. (ed.), *Reallexikon der germanischen Altertumskunde*. 4. Bd. (Rü-Z). Ed. by J. Hoops. Strassburg: Trübner.
- Much, R. 1925. Der Eintritt der Germanen in die Weltgeschichte. In *Germanistische Forschungen. Festschrift anlässlich des 60-semesterigen Stiftungsfestes des Wiener Akademischen Germanistenvereins*, 8-66. Wien: Österreichischer Bundesverlag.
- Nansen, F. 1911. *In northern mists: Arctic exploration in early times*. Vol. I. Transl. A.G. Chater. New York: Frederick A. Stokes.
- Noreen, A. 1920. Nordens älsta folk- och ortnamn. *Fornvännen* 15. 23-50.
- Pedersen, H. 1909. *Vergleichende Grammatik der keltischen Sprachen*. Vol. I. Göttingen: Vandenhoeck & Ruprecht.
- Pokorny, J. 1959. *Indogermanisches etymologisches Wörterbuch*. Bern – München: Francke.
- Procopius. 1919. *History of the wars*. Transl. H.B. Dewing. London: Heinemann – New York: Putnam's Sons.
- Pronk, Tijmen. 2015. Singulative *n*-stems in Indo-European. *Transactions of the Philological Society* 113(3). 327-348.
- {Claudii} Ptolemaei *Geographia*. 1966. Nobbe, C.F.A. (ed.). Hildesheim: Olms.
- Ptolemy, C. 1932 (repr. 1991). *The Geography*. Transl. and ed. E.L. Stevenson. New York: The New York Public Library.
- Qvigstad, J.K. 1893. *Nordische Lehnwörter im Lappischen* (Christiania Videnskabs-Selskabs Forhandling for 1893, No. 1). Christiania: Dybwad.
- Sims-Williams, P. 2003. *The Celtic inscriptions of Britain: Phonology and chronology, c. 400-1200* (Publications of the Philological Society, 37). Oxford – Boston: Blackwell.

- Turner, R.L. 1966, 1969, 1985. *A comparative dictionary of the Indo-Aryan languages, plus Indexes, plus Addenda and corrigenda* (ed. J.C. Wright). London – New York – Toronto: Oxford University Press – London: School of Oriental and African Studies.
- de Vaan, M. 2008. *Etymological dictionary of Latin and the other Italic languages*. Leiden – Boston: Brill.
- de Vries, J. 1962. *Altnordisches etymologisches Wörterbuch*.² Leiden: Brill.
- Walde, A. & Hofmann, J.B. 1954. *Lateinisches etymologisches Wörterbuch*. Vol. II. Heidelberg: Winter.
- Zair, N. 2013. *The reflexes of the Proto-Indo-European laryngeals in Celtic*. Leiden – Boston: Brill.

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Teaching ESP online during the pandemic – a teachers' perspective

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Due to the COVID-19 pandemic, teachers and educators have been forced to introduce digital solutions within a very short time, which influenced the educational perspective significantly, and required adapting to the new conditions, not only in what concerns teaching methods but also in terms of teaching content. Contrary to the commonly held opinion that teaching at tertiary level has not changed considerably, since it concerns adults who are already autonomous, the new teaching challenges have had an impact on tertiary education as well. Moreover, university teachers needed to face this new reality without prior preparation. The aim of this paper is to present the current pandemic-driven situation from the perspective of ESP teachers from various European countries by revealing not only some of the challenges posed by the pandemic, but also certain good practices which may become a guide for other ESP teachers. The methodology applied to inquiring this research question was a qualitative-quantitative online survey distributed among ESP teachers in European countries. The results show that online teaching during the pandemic was challenging for most respondents, at the same time offering them the opportunity to develop professionally by improving their technical skills and learning how to use online platforms, apps and tools.

Keywords: online teaching, ESP, COVID-19 pandemic, teaching at tertiary level, ICT, digital tools.

1. Introduction

As a result of the direct danger caused by the dynamic widespread of COVID-19 in 2020, schools of different types, including universities were closed for almost a year, changing the approach to education and ultimately the teacher-learner relationship. The unexpected SARS-CoV-2 virus outbreak contributed to accelerating the speed of introducing online teaching, which became the form of instruction in almost all universities worldwide, thus enabling the activity in universities to continue (UNESCO 2020). At the same time, recent research suggests that online learning increased retention, and the

quality of information mapping in students has become more complex (Darling-Hammond et al. 2020). This assumption leads to the prediction that remote classes will remain part of the new, post-COVID reality.

An additional aspect increasing the effects of the current transformation is the shortage of teachers, which has grown even larger, after numerous teachers opted for earlier retirement due to the pandemic threat (Randstad 2020). Many teachers decided to retire early rather than face the possibility of infection after schools reopened, which has also affected the continuity of various educational establishments, creating an additional problem of extra hours for the remaining teaching staff.

In view of the current situation, the aim of this paper is to provide the teachers' perspective on online teaching in the COVID-19 era by presenting not only some of the challenges posed by the pandemic, but also good practices which may become a guide for other teachers. The focus of the paper is on ESP teachers, who constitute a very heterogeneous group in terms of age and working experience. At the same time, during the pre-pandemic period they had presumably already faced challenges in the form of a lack of materials and the constant need to update subject-content knowledge and cooperate with subject experts. During the time of COVID-19 restrictions, access to the above mentioned resources decreased considerably.

2. Literature review

Although online teaching has already been the subject of extended research (Wang et al. 2010; Makokha & Mutisya 2016; Queiros & de Villiers 2016; Malik et al. 2018), there are very few papers dealing with the teachers' perspective, not to mention ESP teachers specifically. Due the situation generated by the COVID-19 pandemic, which led to the immediate intensification of the use of online learning, we decided to focus our attention on possible changes in the approach to online teaching.

2.1. Remote learning and teaching

The current pandemic and the rapid shift to online learning have also changed the approach to online learning, which is visible, for example, in the division Hodges et al. (2020) suggested, into adequately planned online learning experiences, and courses taught online as a response to a crisis situation. The researchers went even further in referring to online education during this pandemic as "emergency remote teaching", which emphasises the contrast with quality, or effective online learning. In the light of the new situation, which has led to the transformation of the education system, the same research focuses on the possibility of total replacement of traditional teaching with online teaching, discussing both the positive and negative effects of this shift.

According to Allo's research (2020), students had a positive attitude towards e-learning, considering it helpful and useful during the crisis generated by the pandemic. Similarly, the results of the research carried out by Muthuprasad et al. (2021), involving

undergraduates from different universities of the National Agricultural Research System (NARS) in India, indicated that the majority of the 307 respondents (70%) expressed their positive attitude to online classes for maintaining the curriculum during the pandemic. Moreover, the interviewees appreciated the flexibility and convenience of online classes. On the other hand, most students also reported that online classes could be more challenging than the traditional classroom because of the technological constraints, delayed feedback and inability of the instructor to handle the available technologies effectively.

The study conducted by Elumalai et al. (2020) aimed to explore the quality of e-learning in higher education from the students' perspective. The relevant data was collected from higher educational institutions in India and Saudi Arabia. The findings revealed that there is a need for improvement in certain areas to enhance the quality of e-learning. Interestingly, the results collected by Coman et al. (2020) in a study conducted on 762 students from two of the largest universities in Romania revealed that higher education institutions in Romania were not prepared for the quick shift to online learning. Among the major problems the respondents indicated were the teachers' lack of technical skills, a teaching style improperly adapted to the online environment, causing a lack of interaction and communication between students and teachers, as well as many technical problems. In view of the new challenges teachers have faced, many researchers have devoted their studies to analysing the tools that are currently used in online learning.

2.2. Teachers' readiness

According to Howard et al. (2021), very little research has focused on exploring teachers' readiness to shift their teaching from face-to-face to fully online in response to the COVID-19 pandemic. They argued the short timeframe for the transition to online teaching and learning resulted in limited time for teachers to properly prepare for this shift. Therefore, the institution had an important responsibility to provide support and common guidelines regarding the institution's expectations for online learning and teaching, in order to compensate for teachers' levels of readiness. Ataiants & Podgornova (2021) investigated online learning readiness and competence among students and teachers of the University of Ryazan based on their perceptions on the importance of, and the confidence level in online learning. The results of the study showed that technical and organizational issues related to distance learning were identified, among which were technical difficulties and resources available to both professors and their students, such as reliability of the Internet connection, the available bandwidth, and the availability of noise-free physical environment.

2.3. Teachers' competences in online teaching

Even before the current pandemic, study outcomes generally suggested the need to improve teachers' competencies in online teaching, particularly in the field of teaching methods and learner support methods. Similar results were provided in earlier research by Asunka (2008) and Madani et al. (2019), which stressed the importance of adapting

the curriculum to e-learning as a new trend in education. They underline the connection between e-learning and essential attributes, such as reading, writing, logic, and numerical skills, which are desirable outcomes for students to succeed in a competitive environment. The greatest concerns that teachers expressed referred to the clarity of online instructions, the ability to motivate students properly and to maintain clear interaction with students, and management burdens for teachers.

2.4. Online tools

Almost overnight transition to distant learning triggered discussions on the use of online teaching tools, whose implementation depends on the instructors' awareness and attitudes (Moore 2014). In a study by Chang et al. (2018), educators expressed their preference for Quizlet, ClassMarker, and Educaplay due to their usability in assessing learners' knowledge and in supporting instructors in providing appropriate feedback. Recent findings by Taghizadeh & Ejtehadi (2021) revealed that the use of technology and the application of available tools and resources were the main challenges educators faced when teaching online.

3. Methods

The study was conducted based on a questionnaire. The results were analysed both quantitatively and qualitatively, depending on the type of question asked. The questionnaire was distributed online to teachers of English for Specific Purposes (ESP) at several universities in 10 European countries (Bulgaria, Czech Republic, Croatia, Hungary, Italy, Poland, Republic of Moldova, Romania, Slovenia, and Spain). It was distributed online in January 2021 and was completed by 55 respondents from 18 universities, as shown in the table below.

Table 1: Names of universities and numbers of respondents

No.	Name of university	Country	No. of respondents
1	Adam Mickiewicz University in Poznań (UAM)	Poland	5
2	Alexandru Ioan Cuza University of Iași	Romania	2
3	Babeș-Bolyai University, Cluj-Napoca (UBB)	Romania	10
4	Bergamo University	Italy	2
5	Charles University, Prague	Czech Republic	3
6	Dimitrie Cantemir University, Târgu Mureș	Romania	1
7	George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Târgu Mureș (UMFST)	Romania	4

8	Grigore T. Popa University of Medicine and Pharmacy, Iași, (UMF Iași)	Romania	2
9	Iuliu Hațieganu University of Medicine and Pharmacy Cluj-Napoca (UMF Cluj)	Romania	6
10	Medical University, Plovdiv	Bulgaria	3
11	Nicolae Testemițanu State University of Medicine and Pharmacy (SUMPH), Chișinău	Republic of Moldova	6
12	Szeged University	Hungary	1
13	Technical University of Cluj-Napoca	Romania	2
14	University of Agricultural Sciences and Veterinary Medicine, Cluj-Napoca	Romania	1
15	University of Art and Design, Cluj-Napoca	Romania	1
16	University of Ljubljana	Slovenia	1
17	University of Murcia	Spain	2
18	University of Zagreb	Croatia	2

The questionnaire (see Appendix A) included 13 questions referring to the respondents' experience of teaching online or using online tools in their ESP teaching before and after the outbreak of the COVID-19 pandemic in Europe and the lockdown imposed in March 2020, which forcefully shifted teaching and learning from classes to the online environment. There were ten closed questions (1 and 10), 10 semi-closed questions (2-9, 11-12) – with options to choose from, but also the possibility to add other answers, – and one open question (13). The questions were aimed at obtaining a pool of information, based on the respondents' experience of teaching online during the pandemic, which could benefit other teachers in their online work with students.

The respondents were also asked what ESP subject they taught and the answers varied greatly. They mentioned 15 different ESP subjects: Business English (8 respondents), EMP (English for Medicine and Pharmacy or Medical English – 20), Technical English (4), English for Art (1), for Computers and Engineering (3), for European Studies (1), for Geography (2), for History (1), for Law (3) and Public Administration (1), for Physical Education (2), for Psychology (2), for Social Sciences (2), for Theology (2), and for Tourism (2). Eight respondents mentioned only English as the subject they taught, and 2 only EAP (English for Academic Purposes). Therefore, we consider that having 55 participants in the study from 18 European universities and who teach 15 different ESP subjects increases the relevance of the research outcomes.

In our study, we started from the presumption that the sudden shift to online education in March 2020, due to the COVID-19 pandemic, was highly challenging for ESP teachers and had an impact on the way they taught and assessed their students. We aimed to identify the prevalent challenges they faced, based on the prediction that they consisted mostly in the lack of experience of using video-conferencing platforms and e-learning tools in their teaching, but also in technical difficulties that might have arisen during

online classes. To make responses more relevant and get a clearer view of differences between classroom and online teaching, we also enquired about ESP teachers' experience with video-conferencing platforms and e-learning tools before March 2020, what platforms and tools they used during the pandemic and which they preferred. We also asked about changes in the way student assessment was conducted during the exclusively online classes as compared to classroom assessment before the pandemic, as we expected significant changes in this area as well, which would have probably impacted negatively on the objectivity of assessment. Another aspect we focused on was the possible benefits of e-learning in teaching ESP, and we expected answers to this question to provide new insights into the matter. Lastly, in the open question, we asked respondents to summarise their experience of online teaching in the form of recommendations for their peers, as we considered that their experience might become a source of inspiration for other ESP teachers.

Data analysis was not performed using specific statistical methods, as the Google Form used for data collection generated graphs and charts that presented the responses to the closed and semi-closed questions statistically. We analysed those graphs and charts and extracted the most relevant information to be presented and discussed in this paper. The responses to the open question were analysed individually and compared in order to extract some practical suggestions for good practices in the online class that might benefit other ESP teachers. To maximise the potential benefits of the respondents' recommendations we listed their answers to this question in Appendix B.

4. Results

The results of the study were analysed both quantitatively and qualitatively, as 10 of the 13 questions allowed respondents to add their own answers rather than just choose from the available options, and as the last one was an open question.

4.1. Challenges of online teaching

When asked to what extent teaching online after March 2020 had been challenging for them in comparison with onsite teaching (Question 1), almost half of the respondents (49.1%) chose the answer "moderately". Only 9.1% of the teachers thought they had been "extremely" challenged, while 27.3% of them considered they had been challenged "very much". On the other hand, 12.7% of the teachers opted for "slightly" challenged, and only one responded (1.8%) did not feel challenged at all by the sudden shift to online teaching. Therefore, we can conclude that most respondents (49.1%) considered the online teaching experience during the pandemic to have been moderately challenging, 36% of them found it very challenging, and only 15% felt they had faced little or no challenge at all with regard to online teaching during the COVID-19 pandemic.

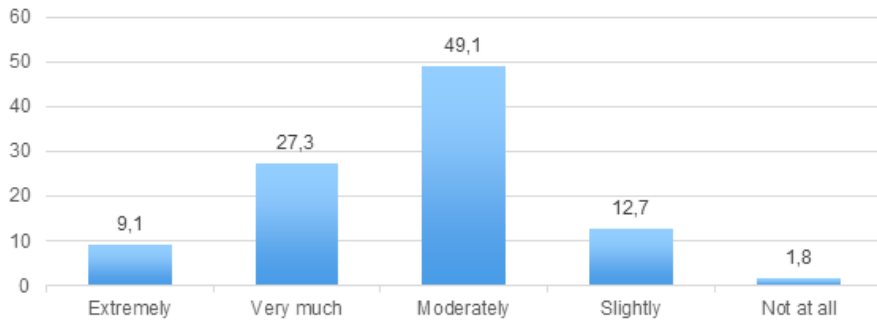


Figure 1. How challenging teaching online since March 2020 was for ESP teachers (n=55)

When justifying their answers to the first question (in response to Question 2), most respondents chose answers c. (Students sometimes encounter technical difficulties.) – 65.5%, f. (I've had to create materials for the online classes, due to the lack of ready-made ESP e-learning materials.) – 61.8%, g. (Sometimes students haven't participated actively in the online classes.) – 60%, and h. (Online teaching is more time-consuming than face-to-face teaching.) – 54.5%. A significant number of teachers (38.2%) chose answer b. (I've had some technical problems during the online classes (e.g. poor Internet connection)), while 36.4% of them selected answers d. (Teaching online was completely new to me.) and i. (I've had to submit additional documents required by the university.). Ten respondents (18.2%) selected answer a. (I haven't had the necessary electronic equipment.), which is quite a significant number, considering the paramount importance of this aspect in teaching online. Less teachers (5 and 4 respectively) chose answers e. (Using online platforms has been quite difficult for me.) – 9.1%, and j. (I've been affected by a COVID-19 related issues (e.g. I/someone close to me was quarantined/infected with SARS-CoV-2).) – 7.3%. Other reasons they listed as challenges were the following:

“Fair online testing may be a problem.” (R7¹)

“The lack of non-verbal student feedback, i.e. being unable to figure out if they understand the topic or not; the lack of physical interaction with my students and colleagues.” (R19)

“We started the second term [i.e. in March 2020] on one platform, and when the new academic year started, it was mandatory to use another platform. It did not help that all students from the faculty worked on a third platform for all other courses except English.” (R20)

“The psychological pressure due to the imposed restrictions.” (R33)

“It took a lot of time and effort to search for new platforms and learn how to use them in class. It took a lot of time and energy to channel my face-to-face classes into online classes.” (R34)

“A foreign language should be learnt and tested in the class, for an objective and qualitative evaluation.” (R39)

One respondent mentioned a positive aspect rather than a challenge. However, we consider it worth citing, as it shows how helpful a certain e-learning platform can be for

¹ R = respondent.

teachers: “Zoom proved to be a very versatile tool, since mid-March, for me, enabling me to work in a very interactive way with students.” (R13)

Another respondent explained what was different about online teaching for them: “It was interesting, I have to plan my classes in a different way. I work a lot for onsite and for online classes, the differences between them is the way of teaching and the resources used.” (R41)

To sum up, technical difficulties (for both students and teachers), creating materials adapted to the online teaching and learning environment, the lack of students’ active participation in the online classes (at times), and the fact that online teaching requires more time on the part of the teacher were considered to have been the most challenging aspects of online teaching for the respondents. Among the particular reasons respondents provided we noted the considerable time and effort required to adapt to the new teaching situation, the psychological pressure due to the highly stressful circumstances, the difficulty in carrying out objective evaluation, changing the teaching platform after one semester, and the impossibility of obtaining immediate, non-verbal feedback from the students.

4.2. Video-conferencing platforms, and e-learning apps and tools

The respondents’ answers to Question 3 revealed that the majority (n=28; 50.9%) had not used any video-conferencing platforms before March 2020, 14 of them (25.5%) had used Zoom, 10 teachers (18.2%) had used Skype, 6 of them (10.9%) were familiar with Google Meet and 4 respondents (7.3%) had utilised Microsoft Teams. Other platforms (or services) that some of the respondents listed (n=1; 1.8% in each case) were Discord, Blackboard collaborate (former Illuminate), Edmodo, Facebook groups, and Webex. Therefore, we can conclude that while more than half of the respondents (50.9%) had not been familiar with any video-conferencing platforms before March 2020, many of them (45.5%; n=25) had some experience mostly with Zoom, but also with Skype, Google Meet and Microsoft Teams. Other platforms were mentioned only once, therefore they seem to have been less used by ESP teachers before March 2020.

As regards e-learning tools or apps that the respondents had used in their teaching before March 2020 (Question 4), the prevalent answer was again negative (n=25; 45.5%); 15 teachers (27.3%) had used Kahoot, 13 of them (23.6%) selected Quizlet, and 8 of them chose Quizziz (14.5%). Only 2 respondents (3.6%) had used OneNote before the pandemic and only one (1.8%) chose Jamboard as answer. Other learning tools or apps that the respondents listed were: Edmodo (n=4; 7.3%), Mentimeter (n=2; 3.6%), Hot Potatoes (and other forms of testing available on Moodle), Wikispace, Google Drive, Hour of Code games, voice and writing tools (e.g. VoiceThread, blogger), Memrise, Duolingo, Linguee, Google Classroom, Google Suite for Education, blogging. Thus, before the pandemic, the most popular e-learning tools among ESP teachers appear to have been Kahoot, followed by Quizlet and Quizziz. OneNote, Jamboard and Mentimeter were much less used at the time, but other tools were listed as well, which are worth noting.

Questions 5 referred to the use of video-conferencing platforms after March 2020. Most respondents (n=37; 67.3%) chose Microsoft Teams, and the second most utilised

platform was Zoom (n=30; 55.5%). Google Meet was used by 13 (23.6%) of the teachers, Blackboard (and Blackboard Collaborate, in one case) by 5 of them (9.1%), and Skype by 2 teachers (3.6%). One respondent mentioned using Edmodo and another one added that, apart from using Zoom, they “participated only in other (MS Teams, Google Meet, and some other)”, but “did not like them” (R13). This is an interesting aspect to note, as it might be the case that, once one gets familiar with using a certain platform, and as long as it suits one’s needs, one could be less inclined to like using other platforms for teaching or training. Also, we can infer that after March 2020 the video-conferencing platform of choice was definitely Microsoft Teams, followed by Zoom and Google Meet. Blackboard, Skype and Edmodo were also mentioned, but not commonly used.

When asked what video-conferencing platform they would chose for their online classes (Question 6), if possible, the answers were consistent with the ones given to the previous question: the large majority (n=25) would choose Microsoft Teams, then Zoom (n=19) and Google Meet (n=7). One teacher opted for Discord and another one for using both Moodle and Zoom. One respondent stated that there was not a single choice in their case and explained: “I wouldn’t. The choice of the platform depends on the kind of class I teach.” (R7) Another teacher would choose “one that we would have a bit of training with, and time to test it.” (R20)

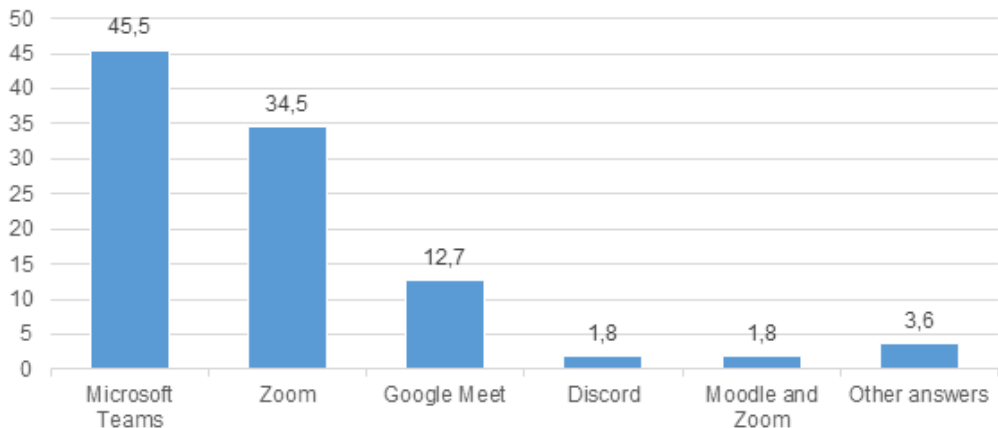


Figure 2. The video-conferencing platforms respondents would choose for teaching online (n=55)

However, comparing the answers to Questions 5 and 6, we can note that less teachers would choose the same platform they used for their online teaching if they were given this choice. This may mean that some of them were either not satisfied with the platform they needed to work on, or they had the experience of using other platforms that perhaps suited their needs better.

In Question 7, respondents chose or added the reason(s) for choosing the preferred platform(s) for online teaching. The prevalent reason (n=42; 76.4%) was that of the platform being user-friendly (answer a.). The other three reasons provided in the question were chosen by a similar number of teachers (close to half of the respondents): 26 of

them (47.3%) selected answer d. (The video and audio calls are of very good quality.), 25 (45.5%) opted for b. (You can see all/more participants in the meeting on the screen.), and 23 (41.8%) chose answer c. (It has breakout rooms.). Other reasons the respondents stated were the following:

“I’m used to it.” [Microsoft Teams] (R1)

“Zoom has also some technical weaknesses, but not too disturbing.” (R13)

“The more you know about the platform, the better you can use all its features.” (R20)

“Moodle for overall structure & organisation, Zoom for audio-video, both equally user-friendly.” (R21)

“It was purchased and adopted as the main platform by the university.” [Microsoft Teams] (R28)

“You can use the vote option for asking questions.” [Zoom] (R41)

“In my opinion, these platforms are similar and they tend to borrow useful features from one another.” (R53)

It is reassuring to observe that the large majority of the respondents consider the platforms they use for online teaching to be user-friendly, with useful features and good quality functions.

Question 8 referred to the e-learning tools or apps that ESP teachers preferred using in their online classes. Kahoot was the most frequent answer (n=18; 32.7%), closely followed by Quizlet (n=17; 30.9%), and Quizziz (n=13; 23.6%). Only 8 teachers (14.5%) opted for OneNote, and 4 (7.3%) chose Google Jamboard. Many other preferred tools were added: Mentimeter, Padlet, Wordwall, screen capture technology (Snagit), Canva, EdPuzzle, Google Forms and Sheets (for collaborative writing), Google Docs, Pear Deck, AnswerGarden, Padlet, BlinkLearning, BookWidgets, LearningApps, Nearpod, iSLCollective, TED Talks, Assignments within Microsoft Teams, the Voting Function in Zoom, Socrative, MS Teams Forms, Moodle, the MS Teams or Zoom chat. Two of the respondents stated that they had no preferences. One on them also explained their answer: “I have no preferences. What I use depends on what is available to students.” (R7) Thus, we can note the variety of e-learning tools that respondents preferred using in their online classes and remark that the prevalent choices were similar to those in Question 4 (e-learning tools respondents had used before March 2020), namely Kahoot, Quizlet and Quizziz.

In Question 9, teachers were asked about the online tools they used in order to check students’ work during ESP classes. Of the five options listed, the “Meeting chat” was the preferred choice (n=26; 47.3%), followed by a “Shared Google Docs file” (n=25; 45.5%). Less teachers, but still a significant number of them (n=17; 30.9%) selected “An online polling tool”, while 13 respondents (23.6%) chose the “Interactive whiteboard available on the platform used in class”, and only 5 teachers (9.1%) opted for OneNote. Other answers that were added are: the Notebook in Teams, shared MS Office docs (work in cloud); Annotation; MS Teams or Blackboard Assignments; (MS or Google) Forms; document sharing; AnswerGarden, Padlet; various submission documents/ assessments; students sharing their screens; Nearpod; Moodle Tests. Other answers, which include explanations, are listed as follows:

“Our own Faculty’s online platform.” (R32)

“None, as my groups are very small (up to 10) and can be done in short, intense interactive communication with all.” (R13)

“I corrected their submitted (via email/university platform) homework in Word or in PDF and sent it back to them.” (R34)

“Screen sharing, you can share an iPad and use it as a whiteboard to support your class.” (R41)

“I ask students to upload various handouts in designated folders in Teams. They can be directly edited on the platform.” (R53)

In conclusion, when checking students’ work in online classes, respondents used prevalently features and tools available on the video-conferencing platform they worked on (meeting chat, interactive whiteboard, OneNote, Notebook, Forms, etc.), but also shared online files (Google Docs) or online polling tools. We note, once more, the variety of e-learning means teachers employed for the purpose stated above.

4.3. Students’ assessment

In this study, we also aimed to find out what means ESP teachers have used for assessing their students. Therefore, Questions 10 and 11 referred to assessment.

The majority of the respondents (54.5%, n=30) considered that teaching online affected moderately the way they assessed their students (Question 10). An important percentage of them (30.9%; n=17) felt the assessment was influenced “very much” by the online teaching environment, while only 3 of the teachers (5.5%) chose the answer “extremely”. A similar percentage of them (7.3%; n=4) thought assessment was slightly affected by this new manner of teaching, and only one respondent (1.8%) believed that online teaching had no influence on students’ assessment. Thus, in most cases (90.9%), ESP teachers considered that students’ assessment was influenced at least moderately by the online teaching environment, and only 9.1% of them felt there was only a slight influence or none at all.

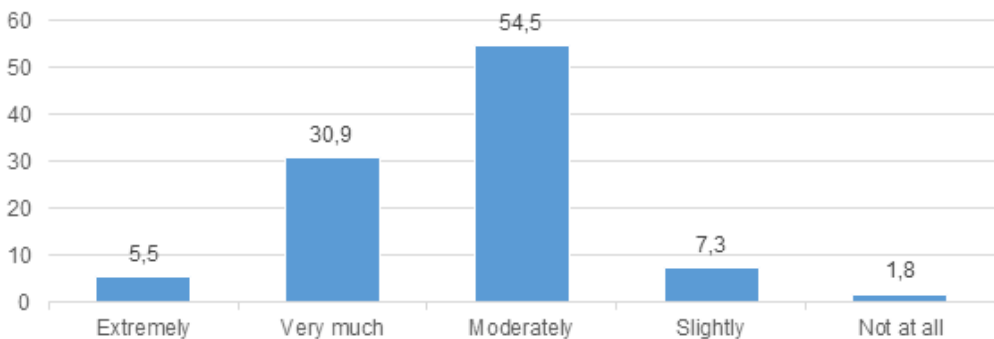


Figure 3. Extent to which online teaching affected the way respondents assessed their students (n=55)

In Question 11 we asked about the differences between the manner of assessing students before and after March 2020 (onsite and online). Most respondents (43.6%; n=24) chose answer a. (The ongoing assessment has been based on online tests, such as quizzes.). A similar percentage of them selected answers c. (The final oral assessment included elements that are specific to regular, in-person written assessment.) – 32.7% (n=18), and b. (The final assessment included only an oral test.) – 30.9% (n=17). Eleven respondents added their own ideas related to what they did differently in assessing their students online. Ongoing assessment and an oral final evaluation seemed to be the preferred methods of online assessment, replacing the traditional summative assessment:

“I gave up written tests in favour of continuous assessment and an oral test.” (R1)

“The final assessment was based on portfolio and oral presentations.” (R16)

“I would typically assess them with a pen-and-paper test. This time they had to prepare an essay and then had an oral exam.” (R20)

“More assessment of students’ month-to-month (applied) work, both individual and in tandems.” (R13)

Other respondents mentioned essays (R41), projects (R44), carrying out “a more complex assessment” (R23), or replacing the final oral test with an online quiz (R21). An interesting answer referred to replacing testing knowledge with problem solving abilities in the written assessment: “The written examination does not test knowledge but rather the ability to solve specific problems.” (R3)

We can conclude that, in the respondents’ experience, online assessment shifted focus from summative to ongoing assessment based on online tests, essays, or projects. Also, the final written examination was mostly replaced by an oral test or sometimes by a quiz. All in all, online students’ assessment, as reflected in the results of this study, seems to have become, in general, “more complex”.

4.4. Benefits of e-learning

In Question 12, teachers were asked about the benefits of e-learning when teaching ESP online, according to their experience. Out of the five options provided as possible answers, the large majority of the respondents selected answers d. (Acquisition of new technical skills) – 81.8% (n=45), and e. (Comfort. It enables teaching without leaving house.) – 70.9% (n=39). Also, most respondents chose the first answer (a. Multimodality (i.e. application of multiple literacies within one medium)) – 58.2% (n=32). Less ESP teachers selected as benefits answers c. (Individual monitoring of students’ progress) – 29.1% (n=16), and b. (Better classroom management) – 16.4% (n=9).

Six respondents provided their own answer to this question. One of them highlighted the advantage of an individual approach to teaching, which leads to better instruction: “Almost effortless additional individual contacts with students, if needed, and thereafter their stronger improvements.” (R13) Two teachers appreciated the opportunity to build a stronger relationship with their students:

“A more personal relationship between teacher and students.” (R21)

“Better connection with the students through the platform messaging board.” (R27)

Other two of them referred to the benefit of learning and practising new things:

“I have learnt that I am very flexible and I am not afraid of learning and discovering new methods. Some students really liked this type of learning.” (R34)

“The opportunity for learning new things and practicing them every day.” (R51)

However, not all the respondents found benefits in teaching online: “Unfortunately I have not noticed any productive benefits through online teaching.” (R39)

In conclusion, most respondents considered that they benefited from online teaching mostly in terms of gaining news skills. On the other hand, the majority of them appreciated the comfort teaching from home entails. Other benefits were listed, among which the individual approach to teaching and the opportunity to build stronger relationships with students and to learn new things.

4.5. Recommendations for ESP teachers

The last question (13) in the survey was designed as an open-question so that ESP teachers could share their experience of teaching online with the aim of helping other teachers who might learn from the respondents' experience. We included all the relevant answers in Appendix B, as we considered it important for readers to have access to all the suggestions the respondents offered them.

The recommendations were very diverse, and referred (among other things) to preparation (which requires more time than for onsite classes), experimenting with different platforms and tools, but using constantly a few selected and tested tools and apps, using tutorials to become familiar with online tools, being open and patient, empathic and flexible, enjoying the experience of online teaching, discussing (technical) problems with the students, experimenting and using multiple sources from the Internet, being aware that more preparation is needed than for onsite classes (planning the lessons carefully), constantly updating teaching techniques and materials, giving clear instructions, alternating skills and types of activities, using a lot of group work and games to engage and motivate students.

Some recommendations were surprisingly thorough, as the ones offered by respondent 8 (see Appendix B), who provided useful tips on how to use the Chat Box, Breakout Rooms, EdPuzzle, video and audio materials, etc., but without overwhelming the students, and suggested doing “regular review activities and quizzes”.

Other suggestions for ESP teachers included sharing good practices, being creative, changing the approach to assessment (for example by using project-based assessment), doing “more with less”, offering choices to students and asking for feedback, establishing rules of communication, always having a plan B, making classes interactive and diverse, being enthusiastic, considering individual student needs, using computer-aided assessment tools.

Some respondents highlighted the importance of the human element in online teaching:

“Mindful teaching - pedagogy rather than exploitation of tools.” (R27)

“... keep the human element at the core of the teaching process.” (R35)

“Create a friendly and supportive atmosphere, interact with your students, and, simply, try to convey your enthusiasm :)” (R49)

Nine of the respondents offered no recommendations, and one of them also gave a reason for this choice: “I have no specific recommendations. The MS TEAMS online tools are sufficient.” (R6)

We can conclude that the respondents’ recommendations are varied and complex and can hardly be summarised in this section. Therefore, we listed them in Appendix B, for readers to be able to select from them the suggestions that suit them the most.

5. Discussion

The present research looked into the new reality of online ESP teaching. Before the COVID-19 pandemic, online teaching was applied mainly as a supplementary solution to the face-to-face teaching, introduced by aware and trained teachers (Protopsaltis & Baum 2019), whereas due to the COVID-19 pandemic it has become the only option for many unexperienced and unprepared teachers. The new situation forced both teachers and students to participate in the new and for many unknown format of teaching and learning, and also required a certain flexibility and teachers’ willingness to use new tools. On the other hand, the pandemic has contributed to a breakthrough in distant learning, creating a new environment for those who had never experienced it, while the encountered challenges have stimulated the introduction of new innovative solutions.

The findings of this study revealed that, while most ESP teachers who participated in the survey found online teaching starting with March 2020 challenging, they also acknowledged the benefits of this form of education and offered insightful recommendations to their peers.

One of the expected challenges confirmed in the study was that the majority of the respondents had not used video-conferencing platforms and e-learning tools or apps before March 2020. Also, technical difficulties encountered when working online, which presumably affected the efficiency of the interaction in the virtual classroom, were listed as the most significant challenges ESP teachers faced, which is in line with the results of the research conducted by Ataiants & Podgornova (2021).

Interestingly, the study results show that the video-conferencing platforms the respondents would choose for their online classes, if given the opportunity, are broadly the same platforms they had already used before March 2020. This might indicate that not only had the teachers become familiar with those platforms, but the latter most probably also satisfied their teaching needs. Similarly, the study revealed that the e-learning tools respondents preferred using, both before and after the outbreak of the COVID-19 pandemic, were Kahoot, Quizlet and Quizziz, which suggests they might be the most

popular e-learning tools among ESP teachers. Quizlet was also mentioned in the study conducted by Chang et al. (2018), as the surveyed educators' preferred online teaching tool. Therefore, we can infer that our study confirms the effectiveness and usability of this tool in the online language class.

Another finding that drew our attention was that most respondents mentioned using the meeting chat or a shared Google Doc file to check their students' work in the online class. As this task is perhaps one of the most challenging for teachers to do online, all the other means that respondents listed are worth considering.

Regarding the students' online assessment, the ESP teachers surveyed favoured quizzes, essays, projects and various oral activities for the ongoing assessment, and mainly oral tests for the final evaluation. Also, a very large majority of them (almost 91%) considered that the online teaching environment influenced at least moderately the way they assessed their students, which is in accordance with the conclusions shared in the survey conducted by Muthuprasad et al. (2021).

As benefits of e-learning when teaching ESP online, most of the respondents appreciated the acquisition of new technical skills and the comfort of teaching from their home, but also multimodality. The opportunity to learn and practice new things and the possibility of establishing better connections with the students and of having an individual approach to teaching were also mentioned.

The recommendations for other ESP teachers provided in the last part of the survey, though very diverse, contain a few common elements such as careful preparation and planning, daring to experiment with new platforms, tools and apps, communicating clearly, engaging students with alternating activities, including short videos, games and quizzes, without neglecting the human element in teaching online. We consider this part particularly valuable, as readers can learn from the respondents' experience of online instruction during the COVID-19 pandemic, and might apply some of the suggestions in their own teaching, given that, as one of the respondents stated, "online teaching is here to stay" (R38).

6. Conclusions

We believe that the results of the present study reveal, at least partly, some of the challenges that ESP teachers have faced after the abrupt transition to online teaching in March 2020. Also, they offer valuable insights into preferred platforms and tools the respondents used for online teaching during the COVID-19 pandemic, and into the way they assessed their students in the online environment.

Moreover, some of the answers that respondents provided could serve as sources of inspiration for other teachers, such as the preferred online tools and apps which were mentioned in the answers to Question 8 and which could be worth exploring, as well as all the answers to the last question, in which the respondents kindly offered various thought-provoking recommendations to their peers.

Also, the fact that the respondents were all ESP teachers from 10 European countries and 18 universities increases the relevance of the study. Another strong point is the fact

that most of the questions in the survey (10 out of 13) were semi-closed, and there was one open question as well, which offered the respondents the opportunity to share their experience of online teaching during the COVID-19 pandemic and offer suggestions to their fellow teachers through the present paper.

The limitations of the study consist in the rather low number of completed questionnaires (n=55), and the (self-imposed) constraint of not including too many questions, or a larger number of open questions in the survey, in order to keep it user-friendly. Though the results of this study are both informative and encouraging, further research in the area of ESP teaching online would be necessary in order to learn more about specific challenges and possible solutions to make online teaching less stressful and demanding and more natural and satisfying.

Appendix A

Online ESP teaching Questionnaire

Name of the university where you work; City; Country:

ESP subject you teach:

1. To what extent has teaching online since March 2020 been challenging for you in comparison with onsite teaching?
a. Extremely b. Very much c. Moderately d. Slightly e. Not at all
2. Please choose one or more reasons for justifying your answer to Question 1 (if you answer was other than “Not at all”).
 - a. I haven’t had the necessary electronic equipment.
 - b. I’ve had some technical problems during the online classes (e.g. poor Internet connection).
 - c. Students have sometimes encountered technical difficulties.
 - d. Teaching online was completely new to me.
 - e. Using online platforms has been quite difficult for me.
 - f. I’ve had to create materials for the online classes (due to the lack of ready-made ESP e-learning materials).
 - g. Sometimes students haven’t participated actively in the online classes.
 - h. Online teaching is more time-consuming than face-to-face teaching.
 - i. I’ve had to submit additional documents required by the university.
 - j. I’ve been affected by a COVID-19 related issues (e.g. I/someone close to me was quarantined/infected with SARS-CoV-2).
 - k. Other reasons (please specify):
3. Did you use any video-conferencing platforms before March 2020?
 - a. Yes. I used:
 - a) Microsoft Teams b) Zoom c) Google Meet d) others (please specify):
 - b. No
4. Did you use any e-learning tools/apps before March 2020?
 - a. Yes. I used:

- a) Quizizz b) Quizlet c) Kahoot d) OneNote e) Google Jamboard d) others (please specify):
- b. No
5. What video-conferencing platform(s) have you used in your online teaching since March 2020?
- a. Microsoft Teams b. Zoom c. Google Meet d. other (please specify):
6. If you could choose one video-conferencing platform for your online classes, which one would you choose?
- a. Microsoft Teams b. Zoom c. Google Meet d. other (please specify):
7. Why do you prefer the platform you chose in Question 6? (multiple answers are possible)
- a. It is user-friendly.
b. You can see all/more participants in the meeting on the screen.
c. It has breakout rooms.
d. The video and audio calls are of very good quality.
e. Other reasons (please specify):
8. What e-learning tools/apps do you prefer using in your online classes?
- a. Quizizz
b. Quizlet
c. Kahoot
d. OneNote
e. Google Jamboard
f. Others (please specify):
9. What online tools do you use to check students' work during ESP classes?
- a. An online polling tool (e.g., Socrative, Mentimeter, Kahoot)
b. Interactive whiteboard (available on the distance learning platform I use in class)
c. OneNote
d. Meeting chat
e. Shared Google Docs file
f. Others (please specify):
10. To what extent has online teaching affected the way you assess your students?
- a. Extremely b. Very much c. Moderately d. Slightly e. Not at all
11. What has been different in the way you assessed your students after March 2020 as compared with onsite assessment?
- a. The ongoing assessment has been based on online tests (e.g. quizzes).
b. The final assessment included only an oral test.
c. The final oral assessment included elements that are specific to regular, in-person written assessment.
d. Others (please specify):
12. What benefits of e-learning have you noticed when teaching ESP online?
- a. Multimodality (i.e. application of multiple literacies within one medium)
b. Better classroom management
c. Individual monitoring of students' progress
d. Acquisition of new technical skills
e. Comfort. It enables teaching without leaving house.
f. Others (please specify):
13. What recommendations do you have for teaching ESP online that you could share with other teachers?

Appendix B

Respondents' answers to question 13

"I assign a lot of homework, so it's a good idea to find the format for homework that will be easy to check." (R1)

"Be open to new possibilities, try out different tools/techniques and find the most suitable one(s) to your students and yourself; be patient, it takes practice; openly discuss problems with students because they're usually better informed in terms of using modern technology and are glad to contribute with advice or some practical ideas." (R2)

"Do not try to transfer traditional classes to the Internet. These are two different ways of teaching and assessment." (R3)

"To use multiple sources that the Internet gives us, to enrich lessons (of course in balanced quantity)." (R4)

"More preparation than in traditional classes since there are no prepared ESP online materials." (R5)

"I have no specific recommendations. The MS TEAMS online tools are sufficient." (R6)

"Teaching ESP online is good for developing business skills like telephoning, teleconferencing or writing emails as it all looks natural." (R7)

"Do not be afraid to use the Chat Box – it works well for students who are reluctant to speak in front of the others – and be sure to give students chance/time to write, do not rush on after a few seconds as they may still be contributing.

Then for small group work, engage the students through the use of Breakout Rooms – but with very clear instructions about any activities first and ensuring the students have all the materials they will need, and timing, before they go in. Breakout Rooms work well for small group discussions but also for collaborative working on tasks such as a controlled grammar or vocabulary gap-fill ones. Students discuss answers together and negotiate and come to a decision about the correct answers.

Use video, audio, online quizzes etc. to vary the pace of the lesson but do not overwhelm the students with different media. And think about using apps such as EdPuzzle to integrate quizzes into video content to ensure a more structured video experience, along with scaffolded activities based around the video (rather than just saying "And now watch this video").

Reduce the amount of new information in each lesson and, when using PPT, do not overload slides with text or visuals.

Do regular review activities and quizzes to identify areas which still need work. After lessons, retrospectively assess the success of materials and be prepared to adapt and make changes for their next use. Remember that not everything that works in the classroom will be suitable online even if it is a preferred activity of a teacher.

Finally, be sure to be comfortable with the technology so that the lesson runs smoothly." (R8)

"Try different platforms as it is a very subjective preference (unless your institution requires a specific one)." (R9)

"Teachers should be fully familiar with the online tools before using them; there are loads of tutorials and they should not be afraid to experiment!" (R10)

"I would advise them to take their time to prepare and be braver in experiments in the online platforms." (R11)

"One of the advantages of teaching ESP online is the availability and easy access to various online resources, so every teacher should constantly update his or her repertoire of teaching tools and techniques and create interesting digital content and language integrated learning materials." (R12)

“I will not reject it, I will continue to use (also) zoom, so sort of blended principles, regardless the circumstances, if permitted by my university/department in the future.” (R13)

“Clarity when giving tasks; alternate skills and types of activities; take into account the different learning styles of the students.” (R14)

“Adopt an incremental approach to technology integration & use so as to avoid work overload; build up a multi-annual plan so as to be able to recycle and repurpose learning/ teaching materials; integrate teaching and research so as to be able to monitor efficiency and recalibrate/ fine tune teaching approach. Be patient and enjoy!” (R16)

“Discussing more topics during one class with our students to keep them more focused; using group work as much as possible because it also allows the students to get to know one another.” (R19)

“Share your good practices...” (R20)

“Use games in class, the students are motivated to be more active.” (R23)

“Use better technical equipment, explore all the options /features of the application used, make good use of the online medium, find more effective ways to get students involved in the online activities.” (R24)

“Balance activities / skills (attention span tends to be shorter online and class work is more difficult to control); step out of comfort zones and try new apps available online, be creative (don't stick to old materials / techniques). Completely change assessment, if you still use traditional testing – I only use project-based assessment.” (R25)

“Mindful teaching – pedagogy rather than exploitation of tools, offering choices (in learning and assessment) and doing more with less.” (R27)

“Get your students' feedback on which aspects of your teaching work better than others. Ensure participation of all students by keeping track of their contribution to classes. Encourage your students to keep their cameras on during classes.” (R28)

“Sharing info from the world wide web.”(R29)

“95% of knowhow is already there so don't be afraid to try new tools, ask colleagues for help and have fun teaching :)” (R30)

“Don't be afraid of online teaching! It takes a bit of planning so it can be time-consuming, but it also offers a lot of opportunities to communicate and interact. Explore various options and online tools and try to adapt them to your teaching situation. Redesign teaching materials to fit the online environment. Store and organize materials so that students can easily access them. Constantly ask your students for feedback and take it into account when planning future classes. Try to organize various activities and see what works best. Give students clear instructions and encourage them to ask for clarification. Establish some rules of communication, for instance students can use the “raise your hand” button in MS Teams to indicate not only that they want to say something but that they finished a task or are ready to move on, etc. Always have a plan B in case technical issues occur. Don't expect all classes to turn out great or to be enjoyed by all students. Try to make your classes as interactive and diverse as possible in order to maintain the students' interest and motivation.” (R31)

“Become familiar with the platform/tools you are using and adapt both teaching and assessment to the online medium.” (R32)

“Just hang in there (sorry, no recommendations).” (R33)

“Do not be afraid of trying out new methods.” (R34)

“Stick to just a few-2 or 3-platforms and tools and keep the human element at the core of the teaching process.” (R35)

“Using video and short films makes teaching/learning English a nice and funny experience.” (R36)

“Share your knowledge and experience with other colleagues to help each other and achieve good results while teaching online.” (R37)

“Online teaching has helped me grow professionally speaking and, above all, as a human being in the sense that my lessons were also opportunities to get to know my students a bit better (i.e. their fears, etc.) and to explore the human side of teaching, a side beyond marks, planning, etc. Online teaching is here to stay, let’s embrace this opportunity!” (R38)

“Teachers have to keep up with the time and do their best to make the teaching-learning process evolve smoothly and flawlessly. No matter the situation and different challenges, teachers have to be ready to adapt themselves fast to the new conditions and to help students get knowledge in the best way possible.” (R40)

“We should adapt the assessment process to the online classes.” (R41)

“Always be open to new technologies, tools, modes, etc. Always check if your students cooperate.” (R42)

“The assessment should focus on projects that need to be presented orally and not on one final written test.” (R44)

“Try to collaborate with other English teachers so you can share experience and useful information!” (R45)

“Experience.” (R46)

“I would recommend a focus on a number of carefully selected tools and apps, used constantly, tested before implementing them in (synchronous) classes. Additionally, keeping an open mind with regard to the opportunities and affordances brought about by the use of technology!” (R47)

“Sharing PP presentations, using Moodle platform for quizzes and self-study.” (R48)

“Create a friendly and supportive atmosphere, interact with your students, and, simply, try to convey your enthusiasm :)” (R49)

“Don’t overload the students :-)” (R50)

“Good and detailed planning from the onset of course and clear communication with students; empathy and flexibility in tackling challenges.” (R51)

“Trying to adapt online methods of teaching and evaluation to individual students’ needs.” (R52)

“I find the apps that allow for frequent and brief revision very practical.” (R53)

“I have noticed they enjoy quizzes and interactive games, as well as being challenged to answer, some more than others, certainly.” (R54)

“Familiarize yourself with computer-aided assessment tools. Praise even small improvements regularly.” (R55)

References

- Allo, M.D.G. 2020. Is the online learning good in the midst of Covid-19 Pandemic? The case of EFL learners. *Sinestesia* 10. 1-10.
- Asunka, S. 2008. Online learning in higher education in Sub-Saharan Africa: Ghanaian University students’ experiences and perceptions. *The International Review of Research in Open and Distance Learning* 9(3). (<http://www.irrodl.org/index.php/irrodl/article/view/586/1130>) (Accessed 2021-04-07.)
- Ataiaants G.B. & Podgornova N.A. 2021. The future of distance education: Challenges and opportunities. *Development of education* 4(2). 45-49.
- Chang, V. & Gütl, C. & Ebner, M. 2018. Trends and opportunities in online learning, MOOCs, and cloud-based tools. In Voogt, J. & G. Knezek & R. Christensen & Lai, K.W. (eds.), *Second handbook of information technology in primary and secondary education*, 1-19. miejsce: Springer.
- Coman, C. & Țiru L.G. & Meseșan-Schmitz, L. & Stanciu, C. & Bularca, M.C. 2020. Online teaching and learning in higher education during the coronavirus pandemic: Students’ perspective. *Sustainability* 12(24). 10367.
- Darling-Hammond, L. & Flook, L. & Cook-Harvey, C. & Barron, B. & Osher, D. 2020. Implications for educational practice of the science of learning and development. *Applied Developmental Science* 24(2). 97-140.

- Elumalai, K.V. & Sankar, J.P. & Kalaichelvi, R. & John, J.A. & Menon, N. & Alqahtani, M.S.N. & Abum-elha, M.A. 2020. Factors affecting the quality of e-learning during the COVID-19 pandemic from the perspective of higher education students. *Journal of Information Technology Education: Research* 19. 731-753.
- Hodges, C. & Moore, S. & Lockee, B. & Trust, T. & Bond, A. 2020. *The difference between emergency remote teaching and online learning*. EDUCAUSE (<https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning>.) (Accessed 2021-06-17.)
- Howard, S. & Tondeur, J. & Siddiq, F. & Scherer, R. 2021. Ready, set, go! Profiling teachers' readiness for online teaching in secondary education. *Technology, Pedagogy and Education* 30(1). 141-158.
- Madani, Y. & Erritali, M. & Bengourram, J. & Sailhan, F. 2019. Social collaborative filtering approach for recommending courses in an e-learning platform: International Workshop on Web Search and Data Mining, Leuven, Belgium. *Procedia Computer Science* 151. 1164-1169. (<https://hal.archives-ouvertes.fr/hal-0246-8569/document>) (Accessed 2021-06-18)
- Makokha, G.L. & Mutisya, D.N. 2016. Status of e-learning in public universities in Kenya. *International Review of Research in Open and Distance Learning* 17(3). 341-359.
- Malik, H.A.M. & Abid, F. & Kalaichelvi, R. & Bhatti, Z. 2018. Challenges of computer science and IT in teaching-learning in Saudi Arabia. *Sukkur IBA Journal of Computing and Mathematical Sciences* 2(1). 29-35.
- Moore, J. 2014. Effects of online interaction and instructor presence on students' satisfaction and success with online undergraduate public relations courses. *Journalism & Mass Communication Educator* 69(3). 271-288.
- Muthuprasad, T. & Aiswarya, S. & Aditya, K.S. & Girish K.J. 2021. Students' perception and preference for online education in India during COVID-19 pandemic. *Social Sciences & Humanities Open* 3(1). (<https://www.sciencedirect.com/science/article/pii/S2590291120300905>) (Accessed 2021-06-15.)
- Protopsaltis, S. & Baum, S. 2019. Does online education live up to its promise? A look at the evidence and implications for federal policy [PDF file]. (<http://mason.gmu.edu/~sprotops/OnlineEd.pdf>) (Accessed 2021-04-07.)
- Queiros, D.R. & de Villiers, M.R. 2016. Online learning in a South African higher education institution: Determining the right connections for the student. *International Review of Research in Open and Distance Learning* 17(5). 165-185.
- Randstad. 2020. *Monitor rynku pracy*. (<http://info.randstad.pl/monitor-ryнку-pracy-42-i>) (Accessed 2021-06-15.)
- Taghizadeh M. & Ejtehadi A. 2021. Investigating pre-service EFL teachers' and teacher educators' experience and attitudes towards online interaction tools. *Computer Assisted Language Learning*.
- UNESCO. 2020. COVID-19 educational disruption and response. (<https://en.unesco.org/news/covid-19-educational-disruption-and-response>) (Accessed 2021-04-22.)
- Wang, M. & Ran, W. & Liao, J. et al. 2010. A performance-oriented approach to e-learning in the workplace. *Journal of Educational Technology & Society* 13(4). 167-179.

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A Multi-Layer Transcription Model – concept outline

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Abstract: Daniel Śledziński, *A Multi-Layer Transcription Model – concept outline*. The Poznań Society for the Advancement of Arts and Sciences, PL ISSN 0079-4740, pp. 49-71

This paper discusses the assumptions of a Multi-Layer Transcription Model (hereinafter: MLTM). The solution presented is an advanced grapheme-to-phoneme (G2P) conversion method that can be implemented in technical applications, such as automatic speech recognition and synthesis systems. The features of MLTM also facilitate the application of text-to-transcription conversion in linguistic research. The model presented here is the basis for multi-step processing of the orthographic representation of words with those being transcribed gradually. The consecutive stages of the procedure include, among other things, identification of multi-character phonemes, voicing status change, and consonant clusters simplification. The multi-layer model described in this paper makes it possible to assign individual phonetic processes (for example assimilation), as well as other types of transformation, to particular layers. As a result, the set of rules becomes more transparent. Moreover, the rules related to any process can be modified independently of the rules connected with other forms of transformation, provided that the latter have been assigned to a different layer. These properties of the multi-layer transcription model in question provide crucial advantages for the solutions based on it, such as their flexibility and transparency. There are no assumptions in the model about the applicable number of layers, their functions, or the number of rules defined in each layer. A special mechanism used for the implementation of the MLTM concept enables projection of individual characters onto either a phonemic or a phonetic transcript (obtained after processing in the final layer of the MLTM-based system has been completed). The solution presented in this text has been implemented for the Polish language, however, it is not impossible to use the same model for other languages.

Keywords: G2P, grapheme-to-phoneme conversion, Polish language, text processing.

1. Introduction

The author's main inspiration for the creation and development of the concept of Multi-Layer Transcription Model was the book by Maria Steffen-Batogowa: *The Automatization of the Phonemic Transcription of Polish Orthographic Texts* (hereinafter: *Automatization...*) (Steffen-Batogowa 1975). The model discussed here can be considered a far-reaching modification of the concepts presented in that monograph. The solutions presented in *Automatization...* can be considered as a single-layer system. This means

that a given orthographic word is processed only once with the application of a specific set of rules. After this step, the final phonological transcription is obtained.

Work on the automatic conversion of an orthographic Polish text into a transcription record has been in progress since the early 1970s. In 1973 M.S.-B. published a paper: *The problem of automatic phonemic transcription of written Polish* (Steffen-Batogowa 1973). However, *Automatization...* was the first comprehensive study of the problem in question. It referred to all results of phonetic research available at that time. The methods presented, the way the rules were worded, as well as the rules themselves were used repeatedly in later works. In the article: *Implementation of the Phonematic Transcription Algorithm* (Wypych 1999), the author described his own implementation of the M.S.-B. transcription rules and included a review of works by other authors which date from the 1970s, 1980s and 1990s. The list begins with a publication entitled: *Program for the Odra-1204 machine for automatic phonematic transcription of Polish texts* (Warmus 1972). It concerned the first working computer program based on the then still incomplete rules proposed by M.S.-B. The system itself was so slow that it was impossible to use it in real time. This was mainly due to hardware limitations. Subsequent publications in this compilation introduce mainly technical improvements (Maksymienko & Bolc 1992; Chomyszyn 1986; Nowak 1995; Jassem 1996). In the solution described by Krzysztof Jassem in the paper: *A phonemic transcription – syllable division rule engine*, a rule module stored in a text file and a rule interpreter module were extracted. The accomplishments of *Automatization...* were also developed later by the author herself. In the paper: *Rules for the mutual conversion of the phonemic and phonetic transcriptions of the Polish texts* (Steffen-Batóg 1989-1990) the principles enabling the conversion of a phonological transcription into a phonetic transcription were discussed. Meanwhile, the paper: *An algorithm for phonetic transcription of orthographic texts in Polish* (Steffen-Batóg & Nowakowski 1992) discussed the principles for converting a text into a phonetic transcription. These papers (including the 1975 monograph) formed the basis for subsequent practical implementations. In 2003 an article was published entitled: *Implementation of grapheme-to-phoneme rules and extended SAMPA alphabet in Polish text-to-speech synthesis* (Demenko et al. 2003). It contains a description of selected linguistic problems connected with automatic transcription for the purposes of speech synthesis. The important issue of the transcription alphabet was addressed (a modification of the SAMPA standard was used). Another example of work based on M.S.-B. is presented in the article: *Ortfon2 - tool for orthographic to phonetic transcription* (Skurzok et al. 2015). The authors presented their own solutions, including a method for binary representation of segment strings. In the paper: *Algorithm and implementation of automatic phonemic transcription for Polish* (Kłosowski 2016) the author discussed the operation of *TransFon* software. This program was written in Python and its operation consists in sequential processing of single letters of a word using a set of rules in which context is taken into account. Another solution was implemented within the CLARIN platform (Common Language Resources & Technology Infrastructure) (Koržinek et al. 2016a; 2016b). The discussed items concern systems for converting orthographic notation into transcription, which are based on designed rules. However, algorithms, which aim at automatic creation of transcription rules, have also been developed for Polish. In the monograph:

Reconstruction of Phonematic Transcription Rules Based on a Learning Sample (Pluciński 2002), the author described an original concept of a learning system that, based on empirical data, can build certain statistics. They facilitate adaptive selection and reconstruction of transcription rules. Another publication which discusses the process of automatic generation of transcription rules for Polish is: *The generation of letter-to-sound rules for grapheme-to-phoneme conversion* (Przybyś & Kasprzak 2013).

2. Linguistic nomenclature and transcription

2.1. Nomenclature of linguistic units

An important issue related to the multi-layer transcription model concerns the naming of linguistic units. It results from the unconventional essence of this solution. The first layer the MLTM-based project receives orthographic words understood as sequences of alphabet letters delimited on both sides by spaces or punctuation marks. A full-fledged transcription is achieved only after processing in the last layer. There is no assumption about how words should be transcribed during layer-by-layer processing. This means that any (conventional) way of transcription can be adopted. In this process, words gradually lose their orthographic features and take on transcriptional features. Thus, during processing, the notation of each word is indirect, and the units of which this notation consists are neither orthographic signs nor phonemes consistent with linguistic definitions. The solution to the problem at hand is to adopt a conventional nomenclature, but no specific nomenclature can be included in the model definition because the model does not make assumptions about the functions of each layer or the permissible units of word construction within those layers. These functions are determined at the time of designing a specific transcription system based on the multi-layer model. In the example design discussed in Section six, the units passed to the n-th layer (as word components) are conventionally called n-th degree segments.

2.2. Phonological inventory

“Polish phonological inventories are varied in terms of the phonemes distinguished due to differences concerning the criteria adopted, the methodology and the way of interpreting the phonemic status of certain sounds” (Lorenc & Ptaszkowska 2015: 230; Szpyra-Kozłowska 2007). Numerous proposals of such inventories can be found in the literature. Their comparative analysis was performed by E. Wolańska (Wolańska 2019). The phonological inventory proposed by Maria Steffen-Batogowa in *Automatyzaton....* is used in this publication. It was previously used in a study enabling the design of an example MLTM-based transcription system (see Section 6).

An important issue is the transcription alphabet used. This is a modified version of the SAMPA standard (Wells 1997). Table 1 shows the adopted phoneme inventory, which

was transcribed using the modified SAMPA alphabet (Demenko et al. 2003). The adopted inventory also includes the separate notation /rz/ (next to the notation /Z/), which actually denotes the same phoneme. This unconventional approach is due to the fact that the phone corresponding to the digraph *rz* is subject to lag assimilation, which is important for transformations related to modification of the voicing status. The notation /rz/ was distinguished for technical reasons and has to do with the functioning of an example transcription system based on the multi-layer model (see Section 6).

Table 1: Phoneme inventory adopted for this publication

No.	Phoneme SAMPA	Example SAMPA	Example word	No.	Phoneme SAMPA	Example SAMPA	Example word
1	/a/	/m.a.k/	<i>mak</i>	20	/rz/	/rz.e.k.a/	<i>rzeka</i>
2	/e/	/z.e.r.o/	<i>zero</i>	21	/Z/	/Z.a.b.a/	<i>żaba</i>
3	/i/	/n'.i.g.dz'.e/	<i>nigdzie</i>	22	/s'/	/s'.m.j.e.x/	<i>śmiech</i>
4	/o/	/s.o.v.a/	<i>sowa</i>	23	/z'/	/z'.a.r.n.o/	<i>ziarno</i>
5	/y/	/b.y.k/	<i>byk</i>	24	/x/	/k.u.x.n'.a/	<i>kuchnia</i>
6	/u/	/j.u.t.r.o/	<i>jutro</i>	25	/p/	/p.a.l.e.ts/	<i>palec</i>
7	/w/	/p.u.w.k.a/	<i>półka</i>	26	/b/	/b.u.d.a/	<i>buda</i>
8	/j/	/j.e.d.e.n/	<i>jeden</i>	27	/t/	/t.a.m.a/	<i>tama</i>
9	/w~/	/j.e.w~.z.y.k/	<i>język</i>	28	/d/	/d.o.m/	<i>dom</i>
10	/l/	/v.j.e.l.e/	<i>wiele</i>	29	/k/	/p.o.k.u.j/	<i>pokój</i>
11	/r/	/r.y.b.a/	<i>ryba</i>	30	/g/	/g.o.s'.ts'/	<i>gość</i>
12	/m/	/m.o.Z.e/	<i>morze</i>	31	/c/	/c.i.n.o/	<i>kino</i>
13	/n/	/m.o.n.e.t.a/	<i>moneta</i>	32	/J/	/J.i.t.a.r.a/	<i>gitara</i>
14	/n'/	/k.o.n'/	<i>koński</i>	33	/ts/	/ts.y.r.k/	<i>cyrk</i>
15	/f/	/f.u.t.r.o/	<i>futro</i>	34	/dz/	/dz.v.o.n.e.k/	<i>dzwonek</i>
16	/v/	/v.j.a.t.r/	<i>wiatr</i>	35	/tS/	/tS.a.s/	<i>czas</i>
17	/s/	/v.y.s.o.k.i/	<i>wysoki</i>	36	/dZ/	/dZ.u.m.a/	<i>dżuma</i>
18	/z/	/k.o.z.a/	<i>koza</i>	37	/ts'/	/k.o.ts'.o.w/	<i>kocioł</i>
19	/S/	/m.a.S.t/	<i>maszt</i>	38	/dz'/	/dz'.a.w.k.a/	<i>działka</i>

2.3. Primary transcription

Primary transcription (hereafter in this Section: PT) is a concept that was introduced for the purpose of the solutions discussed in this paper. It covers the elementary relationships between letters and phonemes. It can be said to be the original set of transcription rules. PT facilitates the use of the multi-layer model discussed, but is not a part of it (there is no obligation to use the primary transcription when creating MLTM-based designs).

The PT is conventional in nature and can be modified due to, among other things, the differences that exist between particular phonological inventories. An example is the biphonemic or monophonemic approach to so-called nasal vowels. Thus, the PT for the

letter *ą* and the letter *ę* may be diverse. Differences may also be related to the distributional properties of individual elements. Some orthographic dyads are digraphs only in specific contexts, so their inclusion or exclusion from PT may be due to conventional arrangements (see below).

The basic assumption associated with PT is the assignment of specific phonemes to individual characters or strings of orthographic characters, which may be specific graphemes. It is possible that a particular orthographic element in a particular context should be transcribed differently than assumed in PT. However, often the correct transcription coincides with it.

The second important assumption concerns the relationship between single letters and orthographic dyads. According to it, PT rules set for longer segments (in terms of the number of characters) have higher priority. For example, a rule for the dyad *sz* has a higher priority than a rule set for the letter *s* or for the letter *z*.

Table 2 and Table 3 present the conventional PT adopted for the purposes of this publication (information on single letters and orthographic dyads is presented separately). No PT was established for the letters *ę* and *q* (due to contemporary numerous and varied phonological interpretations of these letters, which take into account various contexts).

Table 2: PT adopted for single letters

No.	Letter	PT	Voicing status	No.	Letter	PT	Voicing status
1	<i>a</i>	/a/	voiced	17	<i>m</i>	/m/	voiced
2	<i>ą</i>	–	voiced	18	<i>n</i>	/n/	voiced
3	<i>b</i>	/b/	voiced	19	<i>ń</i>	/n'/	voiced
4	<i>c</i>	/ts/	voiceless	20	<i>o</i>	/o/	voiced
5	<i>ć</i>	/ts'/	voiceless	21	<i>ó</i>	/u/	voiced
6	<i>d</i>	/d/	voiced	22	<i>p</i>	/p/	voiceless
7	<i>e</i>	/e/	voiced	23	<i>r</i>	/r/	voiced
8	<i>ę</i>	–	voiced	24	<i>s</i>	/s/	voiceless
9	<i>f</i>	/f/	voiceless	25	<i>ś</i>	/s'/	voiceless
10	<i>g</i>	/g/	voiced	26	<i>t</i>	/t/	voiceless
11	<i>h</i>	/x/	voiceless	27	<i>u</i>	/u/	voiced
12	<i>i</i>	/i/	voiced	28	<i>w</i>	/v/	voiced
13	<i>j</i>	/j/	voiced	29	<i>y</i>	/y/	voiced
14	<i>k</i>	/k/	voiceless	30	<i>z</i>	/z/	voiced
15	<i>l</i>	/l/	voiced	31	<i>ż</i>	/Z/	voiced
16	<i>ł</i>	/w/	voiced	32	<i>ź</i>	/z'/	voiced

Table 3: PT adopted for orthographic dyads

No.	Orthographic dyad	PT	Voicing status
1	<i>ch</i>	/x/	voiceless
2	<i>cz</i>	/tʃ/	voiceless
3	<i>dz</i>	/dʒ/	voiced
4	<i>dź</i>	/dʒ'/	voiced
5	<i>dż</i>	/dʒ'/	voiced
6	<i>rz</i>	/rʒ/	voiced
7	<i>sz</i>	/ʃ/	voiceless

In addition to the dyads listed in Table 3, which are included in PT, the orthographic system in Polish includes several dyads and one triad, which mark a single phoneme only before a letter denoting a vowel (other than the letter *i*). These structures include the letter *i*, which is only a palatalization marker – in the context given, it is treated as a grapheme component. Because of this strong contextual consideration, they were not included in the PT. They are listed in Table 4.

Table 4: Structures excluded from the adopted PT

No.	Orthographic notation	Transcription in vowel context	Transcription in consonant context	Voicing status
1	<i>ci</i>	/tʃ'/	/tʃ'.i/	voiceless
2	<i>dzi</i>	/dʒ'/	/dʒ'.i/	voiced
3	<i>ni</i>	/n'/	/n'.i/	voiced
4	<i>si</i>	/s'/	/s'.i/	voiceless
5	<i>zi</i>	/ʒ'/	/ʒ'.i/	voiced

The voicing is a phonetic (physical) feature of speech sounds. It has to do with the vibration of the vocal folds during the articulation process. Thus voicing is one of the basic characteristics of linguistic units associated with speech sounds, i.e. with phonemes and phones. In this study, the concept of voicing of characters is used in a conventional way. It denotes the voicing status of the phonemes that correspond to these units in the adopted PT. This information is included in the *Voicing status* column in Tables: 2, 3 and 4.

3. Basic terms connected with MLTM

There are several basic terms that are central to describing the construction and operation of MLTM. These include the term layer already mentioned. A layer in MLTM is a self-contained mechanism that has its own set of rules and is used to process strings of segments. A single layer is a transducer to which text data are passed and whose

output contains the processed text data. The processing is specified by the rules defined in the layer. It is important to note that different layers function independently of each other in the MLTM-based transcription system. It should be noted, however, that the rules belonging to a particular layer must be constructed in such a way that it is possible to process the transcription of words received from the previous layer. In other words: the rules associated with the particular layer must “understand” the way of writing words processed in the previous layer.

The next important elementary terms are segment and index. A segment is a section of the word being processed. The division of a given word into segments functions at any stage of its processing (within any layer). There are two types of segments in MLTM: single segments and multiple segments. Single segments can include basic units associated with a given notation system. In orthographic notation, these are letters, while in phonological transcription, the term refers to phonemes. Here are examples of single segments used in the project discussed in Section six:

- *a* (a segment including one letter);
- */a/* (a segment including one phoneme);
- */ts/* (a segment including one phoneme).

The notation of several units which, for specific reasons, constitute a distinct whole can be realized in multiple segments. The individual components of a multiple segment (e.g. phonemes) are combined using the character: *&* (in this way two or more segments can be written if necessary). Here are two examples of multiple segments:

- */e/&n/* (a multiple segment including a sequence of phonemes);
- */o/&w~/* (a multiple segment including a sequence of phonemes).

The index represents the segment number in the word. It should be noted that when a word is passed to the first layer, the number of indices is the same as the number of characters in that word increased by 2 due to the start and end markers. Table 5 illustrates this correlation on an exemplary word *wszędzie*.

Table 5: Initial state of assigning indices to segments in the word: *wszędzie*

Segment	#	w	s	z	ę	d	z	i	e	#
Index	0	1	2	3	4	5	6	7	8	9

The assignment of indices to each segment may change as the word is processed in subsequent layers. The important point is that the initial set of indices is identical to the set of indices in the word after it has been processed in the final layer of a given MLTM-based solution (in the example given, it is a set of ten elements).

4. The structure of MLTM rules

Each rule consists of two parts – the first module of the rule indicates the fragment of the word for which it will be applied (the processed word must contain this fragment

for the rule to be applied). The second module of the rule defines all modifications that apply to the segment of the word specified in the first part. In addition, the rule can be accompanied by an exclusions list or an inclusions list (see Section 5.5). It includes word initial, medial, or final orthographic strings to identify specific inflectional forms.

Both parts of the rule are divided into the same number of smaller analogous elements, which correspond to particular segments that constitute a fragment of the processed word. The MLTM rule construction scheme is presented in Table 6.

Table 6: WMT rule construction scheme

First module of the rule			Second module of the rule		
element 1	element 2	element n	element 1*	element 2*	element n*

In the first module of a rule belonging to the first layer of a particular solution based on MLTM, each element corresponds to exactly one letter. The meaning of the rule elements in subsequent layers results from the previously applied rules and the adopted way of transcribing the segments – it is not predefined. Individual elements are separated by dots. One element of the first module of the rule may refer to a particular word segment or it may be a notation defining a set of segments, for example:

- [A]–*a*–*e* (set A without letters: *a* and *e*);
- [A]+*l*+*j* (set A increased by letters: *l* and *j*);
- *p+d+t+d+k+g* (six-element letter set).

All set designations used must first be defined, for example the definition of set A could look like this: [A]={*a,a,e,e,o,o,u,i,y*}. The following list contains examples of constructions of the first module of the rule:

- *p.i*.*[A]*–*i* (notation specific to the words: *pianino*, *opieszaly*, *pieniądze*);
- *r.l.b* (notation specific to the words: *dotarłby*, *nażarłby*, *wsparłbys*);
- *a.i* (notation specific to the words: *zaistnieć*, *zaiskrzyć*).

These three examples are suitable for the first layer of the MLTM-based solution (orthographic words are passed to it). The third element in the first example includes a set of acceptable segments (here: a set of letters). The set symbols are used to specify the acceptable context for an element located in the first module of the rule, which is accompanied by a modification definition written at an analogous position in the second module of the same rule. For an element in the first module of a rule that includes a certain set of segments, no modification should be defined in the second module of that rule. An exception to this rule concerns the functioning of mapping lists. This mechanism makes it possible to define a set of transformations for different segment variants, while it is not known in advance which segment will be part of a particular word being processed.

The information presented below concerns the construction of the second module in MTML rules. The number of elements in both modules is identical, so that the individual elements in the second module of a rule relate to the analogous elements in the first module of that rule, which in turn relate to segments in the words being processed.

However, the nature and functions of the elements in the second module are different. Each such element may contain a notation associated with one of three possibilities:

- transcribing in unmodified form the word segment indicated by the analogous element located in the first module of the rule;
- transcribing in a modified form the word segment indicated by the analogous element located in the first module of the rule;
- using a special command concerning the operation to be performed on the word segment indicated by the analogous element located in the first module of the rule.

Detailed explanations of the listed options are provided in the next Section of this paper. The last option listed above requires additional explanation. The following commands can be used in the second rule module:

- !NC (no change) – this command can be used in any case, and especially for elements that were used in the first rule module only to specify context;
- !ML (move left) – as a result of this command a given segment in the processed word is removed, and the index that was assigned to this segment is appended to the index of the segment preceding the given segment (thus a single segment may be associated with several indices);
- !RM (remove) – this command removes the segment, but leaves the index in place – after applying this command a given index is assigned to a special segment: EMP (empty).

Operations on words processed in a given layer can be performed using, among other things, the mentioned commands. It should be noted that the rule is applied to the processed word provided that it contains a sequence of segments compliant with the structure defined in the first module of the rule. The discussed structure of the first module of the rule: p.i.[A]–i occurs, among others, in the words: *piasek* and *dopiekać*. In the word *piasek* the three elements of the first module of the rule coincide with the segments (letters) to which the indices: 1, 2, 3 are assigned (assuming that index 0 is assigned to the segment containing the character #). In the word *dopiekać* the mentioned structure of the first module of the rule coincides with the segments (letters), to which the indices: 3, 4, 5 are assigned. Thus, in the first case a sequence of segments (letters): *pia* (together with the assigned indices: 1, 2, 3) would be processed, while in the second case it would be a sequence: *pie* (together with the indices: 3, 4, 5).

The next Section of this paper discusses the operations (actions) that can be defined in the second module of the MLTM rule.

5. Operations carried out with the application of MLTM rules

5.1 Preserving the segment and index (no change)

The simplest operation is to preserve the segment unchanged and to leave the index that is assigned to that segment in the same position. If the element within the first module of the rule is a particular segment, then !NC command can be used to achieve the intended purpose. The other way is to rewrite the identical segment content in the

analogous element of the second rule module. Here are rule examples illustrating these two possibilities:

$/b/.s/.t/.v/ > /p/.!NC.!NC./f/;$
 $/b/.s/.t/.v/ > /p/.s/.t./f/;$

Both rules are suitable for processing the word *hrabstwo* written using the primary transcription ($/x/.r/.a/.b/.s/.t/.v/.o/$). Such a transcript would also be obtained after processing the orthographic word in the first layer of the example MLTM-based transcription system (see Section 6). The following rules would have to be used:

$h > /x/;$
 $r > /r/;$
 $a > /a/;$
 $b > /b/;$
 $s > /s/;$
 $t > /t/;$
 $w > /v/;$
 $o > /o/;$

Thus, the two rules discussed are not appropriate for the first ('input') layer, to which only orthographic words are transferred. In the primary transcription, the voicing status assigned to orthographic characters is preserved (see Section 2.3). Table 7 and Table 8 illustrate the operation of the rules in question using word $/x/.r/.a/.b/.s/.t/.v/.o/$ processing as an example.

Table 7: Rule operating scheme: $/b/.s/.t/.v/ > /p/.!NC.!NC./f/;$

Initial indexation	0	1	2	3	4	5	6	7	8	9
Word before the rule is applied	#	/x/	/r/	/a/	/b/	/s/	/t/	/v/	/o/	#
I module of the rule					/b/	/s/	/t/	/v/		
II module of the rule					/p/	!NC	!NC	/f/		
Word after the rule is applied	#	/x/	/r/	/a/	/p/	/s/	/t/	/f/	/o/	#
Final indexation	0	1	2	3	4	5	6	7	8	9

Table 8: Rule operating scheme: $/b/.s/.t/.v/ > /p/.s/.t./f/;$

Initial indexation	0	1	2	3	4	5	6	7	8	9
Word before the rule is applied	#	/x/	/r/	/a/	/b/	/s/	/t/	/v/	/o/	#
I module of the rule					/b/	/s/	/t/	/v/		
II module of the rule					/p/	/s/	/t/	/f/		
Word after the rule is applied	#	/x/	/r/	/a/	/p/	/s/	/t/	/f/	/o/	#
Final indexation	0	1	2	3	4	5	6	7	8	9

The difference between the two possibilities is significant. If a given segment is rewritten in the corresponding element of the second module of the rule in an unchanged form (as in the case of segments: /s/ and /t/ in the example given in Table 8), the possibility of its further modification will be blocked in the processed word. This means that when using other rules defined in this layer, this segment cannot be modified (this applies to rules used later). Using the !NC command also causes the segment to remain unchanged, but it will still be possible to replace that segment using other rules defined in the same layer.

The mechanism works in the following way: first, all rules defined in a given layer are checked for their possible use in the currently processed word (the checking starts from the longest rules). Rules appropriate for the word are continuously registered (during the checking) and at the same time, based on the structure of these rules, appropriate segments are blocked. Blocking particular segments means that they cannot be modified based on rules checked later. After checking all rules the registered changes are executed, then the segments are unlocked and the word is passed to the next layer for processing.

If the element of the first module of the rule is a set of segments, then in order to avoid changes, in the corresponding element of the second module only the !NC command can be used (because it is not known in advance which segment from this set will be part of the processed word). Here is an example of a rule containing this structure:

```
[WB2].v/>!NC./f/;
```

In the example MLTM-based project discussed in Section 6, the WB2 set includes all second layer segments that are voiceless consonants proper. Table 9 illustrates how the rule works for the word /g/.w/.u/.p/.s/.t/.v/.o/. Such a notation would be obtained after processing the word *glupstwo* in the first layer. The following rules would be used for this purpose:

```
g>/g/;
t>/w/;
u>/u/;
p>/p/;
s>/s/;
t>/t/;
w>/v/;
o>/o/;
```

By using the !NC command on any segment from the WB2 set (here it is: /t/), the possibility of modifying this element using other rules defined in the same layer is preserved.

Table 9: Rule operating scheme: [WB2]./v/>!NC./f/;

Initial indexation	0	1	2	3	4	5	6	7	8	9
Word before the rule is applied	#	/g/	/w/	/u/	/p/	/s/	/t/	/v/	/o/	#
I module of the rule							[WB2]	/v/		
II module of the rule							!NC	/f/		
Word after the rule is applied	#	/g/	/w/	/u/	/p/	/s/	/t/	/f/	/o/	#
Final indexation	0	1	2	3	4	5	6	7	8	9

5.2. Modification of a segment while maintaining its current index

The following operations can be distinguished to modify a segment in the word being processed that do not change the index assigned to that segment:

- replacing a single segment with another single segment;
- replacing a single segment with a multiple segment;
- replacing a multiple segment with another multiple segment;
- replacing a multiple segment with a single segment.

The operation of changing a single segment to another single segment involves replacing the string assigned to the index with another string. This type of operation was already covered in the description in Section 5.1. The /v/ (second level) segment was replaced with its voiceless counterpart, the /f/ segment.

An example rule for replacing a single segment with a multiple segment is as follows:

$\xi.t > /e/\&/n/.!NC;$

It causes the index originally assigned to segment ξ be assigned to multiple segments including /e/ and /n/. The operation of this rule is illustrated by the example in Table 10.

Table 10: Rule operating scheme: $\xi.t > /e/\&/n/.!NC;$

Initial indexation	0	1	2	3	4	5	6
Word before the rule is applied	#	p	ξ	t	l	a	#
I module of the rule			ξ	t			
II module of the rule			/e/&/n/	!NC			
Word after the rule is applied	#	p	/e/&/n/	t	l	a	#
Final indexation	0	1	2	3	4	5	6

Another type of operation listed is the replacement of a multiple segment with another multiple segment. The operation could be performed when the phonological transcription of a multiple segment needs to be converted into a phonetic transcription. Such a situation

could occur in the case of designing an additional layer in a particular MLTM-based project, the purpose of which would be to convert the resulting phonological transcription into a phonetic transcription. It is difficult to find an analogy in Polish for the last listed operation mode, i.e. for replacing a multiple segment with a single segment.

5.3. Removing a segment (!RM command)

Using the !RM (remove) command removes the segment and leaves the index associated with that segment at the same position in the word being processed. After applying this command the index is assigned to a special EMP (empty) segment. If there is more than one index associated with the deleted segment, then all of those indices are assigned to the EMP segment. Using the !RM command modifies word indexation in the sense that it irrevocably removes the specified index (or indices) from further processing. The !RM command can be used for processing chunks of the word that are not realized.

Table 11 shows a processing scheme for the word /p/.o/.r/.ts/.j/.i/. Such a transcript would be obtained after processing the word *porcji* in the first layer of the example transcription system discussed in Section 6. The following rules would be used:

p>/p/;
o>/o/;
r>/r/;
c>/ts/;
j>/j/;
i>/i/;

No changes would be made to the second layer in this solution. In the third layer, a rule containing the command !RM would be used:

/ts/.j/.i/.#>!NC.!RM.!NC.!NC;

According to this rule, index number 5, which was assigned to the /j/ segment, is associated with the EMP segment.

Table 11: Rule operating scheme: /ts/.j/.i/.#>!NC.!RM.!NC.!NC;

Initial indexation	0	1	2	3	4	5	6	7
Word before the rule is applied	#	/p/	/o/	/r/	/ts/	/j/	/i/	#
I module of the rule					/ts/	/j/	/i/	#
II module of the rule					!NC	!RM	!NC	!NC
Word after the rule is applied	#	/p/	/o/	/r/	/ts/	EMP	/i/	#
Final indexation	0	1	2	3	4	5	6	7

5.4. Removing a segment while moving the index to the left (!ML command)

Using the !ML (move left) command results in a segment being deleted and the index associated with that segment being appended to the index of the segment preceding it. This command is primarily used to separate digraphs and trigraphs in orthographic words. The use of the !ML command can be demonstrated on the example of processing the word *szafa*. In this word, index 1 is initially assigned to the letter *s*, and index 2 is assigned to the letter *z* (taking into account the indexation of the # tag). The orthographic dyad of *sz* must eventually be transcribed as a single segment /S/. The two indices that were originally assigned to the segments *s* and *z* are assigned to it. This can be achieved using the following rule:

`s.z>/S/!ML;`

In addition to using the !ML command, it is also necessary to ensure that the segment to which the two indices will be assigned is modified accordingly. If phonological notation was to be obtained as a result of processing orthographic words, the orthographic segment *s* should be replaced with the phoneme /S/. Table 12 presents the scheme of the above rule in relation to the word *szafa*. After such an operation indices 1 and 2 would be assigned to the phoneme /S/.

Table 12: Rule operating scheme: `s.z>/S/!ML;`

Initial indexation	0	1	2	3	4	5	6
Word before the rule is applied	#	s	z	a	f	a	#
I module of the rule		s	z				
II module of the rule		/S/	!ML				
Word after the rule is applied	#	/S/	–	a	f	a	#
Final indexation	0	1,2	–	3	4	5	6

It is important to mention a few important limitations associated with the use of the !ML command. It cannot be used immediately after an element placed in the second module of a rule that contains the !RM command. It also cannot be used with respect to a segment to which index 1 is assigned, or with respect to a segment containing an EMP label or # character.

However, the !ML command can be used on several consecutive elements of the second rule module (located in its immediate vicinity). This can be used to separate trigraphs. An example rule containing a sequence of two !ML commands looks like this:

`d.z.i.a>/dz/!ML!ML!NC;`

Table 13 shows a diagram of how this rule works for the orthographic word *wydział*.

Table 13: Rule operating scheme: d.z.i.a>/dz/!.ML!.ML!.NC;

Initial indexation	0	1	2	3	4	5	6	7	8
Word before the rule is applied	#	w	y	d	z	i	a	ł	#
I module of the rule				d	z	i	a		
II module of the rule				/dz/	!ML	!ML	!NC		
Word after the rule is applied	#	w	y	/dz/	–	–	a	ł	#
Final indexation	0	1	2	3,4,5	–	–	6	7	8

5.5. Exclusions lists and inclusions lists

The final topic discussed in this chapter involves exclusions lists and inclusion lists. These lists can be attached to rules. One list may be attached to a rule that contains strings of orthographic characters to identify specific inflectional forms. No full stops are used in the notation of these structures, but # character may be used to identify specific orthographic forms based on the fragments contained in the onset or rhyme of the word. The rule containing the exclusions list is structured as follows:

first_module_of a rule>second_module_of a rule>!EXC:exclusion_1,exclusion_2,...,exclusion_n;

Here is an example of the rule following the given scheme:

d.ż>/dZ/!.ML>!EXC:#nadź,#ponadź,#śródź,#odź,#współodź,#przedź,#podź,#ponadź,#nienadź,#nieponadź,#nieśródź,#nieodź,#niewspółodź,#nieprzedź,#niepodź,#nieponadź;

Individual items on the list are separated only by a comma (no space). The above rule contains a list of exclusions (or in other words, a list of exceptions). This means that any inflectional form that can be identified on the basis of any orthographic sequence included in the given list (in this example, these are onset sequences) is not covered by the rule – that is, the given rule cannot be used for it.

Inclusions lists make it possible to identify the set of inflectional forms for which a rule is to be used. It cannot be used for processing words outside the set that matches the specified inclusion list. The difference between writing an inclusions list and writing an exclusions list only concerns using the command: !INC instead of !EXC.

6. Example project based on MLTM

In this Section, an example project of an MLTM-based transcription system is briefly discussed. In this solution, the following conventional terminology is used: the words to be processed in the n -th layer (before processing) are composed of n -th degree segments, at the same time these segments belong to the n -th degree inventory. Thus, the words to

be processed in the second layer of this example solution are composed of second level segments that belong to the second level inventory. The first level segments (processed in the first layer of any MLTM-based project) are orthographic characters. The solution discussed here has three layers and their names are also conventional – they were determined by the project discussed here and are not defined in the MLTM.

6.1 Primary transcription layer

First layer in the presented model is supposed to separate characters, dyads, and triads in the orthographic notation that relate to phonological segments, i.e. that constitute graphemes. This initial transformation is done mainly on the basis of the primary transcription. The separation of character strings corresponding to individual phonemes requires taking into account the fact of the multi-functionality of the letter *i*. If it is only a sign of palatalization, it is treated as a component of a digraph or trigraph (see Section 2.3).

The transcript obtained after the word processing in the first layer does not contain modifications related to the assimilation of segmental voicing within consonant groups heterogeneous in terms of the status of so-called orthographic voicing status (see Section 2.3). It also does not contain simplifications within consonant groups and several other important modifications – rules related to the mentioned issues have been placed in higher layers.

Below are definitions of sets that are used only in rules belonging to the primary transcription layer (hence the number 1 in the names of these sets). The definition of the X1 set, which includes all letters, takes the following form:

[X1]={a, e, i, o, y, u, ó, ę, ą, ł, j, l, r, m, n, ń, f, w, s, z, ź, ś, ź, h, p, b, t, d, k, g, c, ć};

Set SA1 contains letters that represent vowels:

[SA1]={a, e, i, o, y, u, ó, ę, ą};

The set SP1 constitutes the difference between the sets: X1 and SA1, it contains letters that represent consonants and semivowels:

[SP1]={ł, j, l, r, m, n, ń, f, w, s, z, ź, ś, ź, h, p, b, t, d, k, g, c, ć};

The examples of rules incorporated into the primary transcription layer are discussed further. Here are single-element rules consistent with the adopted primary transcription:

a>/a/;
 b>/b/;
 c>/ts/;
 h>/x/;
 z>/z/;

d>/d/;
ż>/Z/;

The following rules apply to selected dyads included in the primary transcription. These are two-element rules, so they have higher priority than the one-element rules given. The last rule contains a list of exclusions. The listed orthographic sequences make it possible to identify inflectional forms in which the orthographic dyad *dż* denotes two phonemes /d/ and /Z/ due to the morphological structure:

c.h>/x/.!ML;
c.z>/tS/.!ML;
d.ż>/dZ/.!ML>!EXC:#nadż,#ponadż,#śródż,#odż,#współodż,#przedż,#podż,#ponadż,#nienadż,#nieponadż,#nieśródż,#nieodż,#niewspółodż,#nieprzedż,#niepodż,#nieponadż;

The orthographic dyad *si* before a consonant indicates a sequence of phonemes /s'i/ (e.g.: *sidła, siwy*). The following primary two-element rule can illustrate it:

s.i.[SP1]+#>/s'/i/.!NC;

In the case of some words, the dyad *si* before a consonant indicates a phoneme sequence /s.i/ (e.g.: *silikat, sinus, pleksiglas*). These can be treated as exceptions. The rule created for the word *silikat* takes the following shape:

#.s.i.l.i.k>!NC./s'/i/.!NC.!NC.!NC;

It is a six-element rule, so it has a higher priority than the primary rule. This is the second method to accommodate exceptions and to exclude certain word forms from the operation of certain rules.

Table 14 covers the processing of the following example words in the primary transcription layer: *jeden, roztwór, marzlem, rżęsy, szczwacz, działo, jabłko*. Column two contains the transcript of the words before processing, while column three contains the processed words. Column four lists all the rules that are applied to each word. The longer rules have higher priority, so they are listed first. All rules used for the words: *jeden, roztwór* and *jabłko* are one-element ones. The dyad *rz* in the word *marzlem* indicates two phonemes. Six-element rule: #.m.a.r.z.ł>!NC.!NC.!NC./r/.z/.!NC; supersedes the two-element rule: r.z>/rz/.!ML; In turn, this two-element rule is appropriate for the word *rżęsy* and it has a higher priority than the two one-element rules: r>/r/; and z>/z/. Similarly, the two-element rules: s.z>/S/.!ML; and c.z>/tS/.!ML; have higher priority than the one-element rules for processing the letters *s, c, z*. They are appropriate for the word *szczwacz*. The word *działo* contains the triad *dzi*, which stands for the phoneme /dz/. The corresponding rule: d.z.i.[SA1]-i>/dz/.!ML.!ML.!NC; has higher priority than the rules: d>/d/; z>/z/; and i>/i/;

Table 14: Processing of sample words in the primary transcription layer

No.	Word notation before applying rules	Word notation after applying rules	The applied rules
1	#.j.e.d.e.n.#	#./j/./e/./d/./e/./n/./#	j>/j/; e>/e/; d>/d/; e>/e/; n>/n/;
2	#.r.o.z.t.w.ó.r.#	#./r/./o/./z/./t/./v/./u/./r/./#	r>/r/; o>/o/; z>/z/; t>/t/; w>/v/; ó>/u/; r>/r/;
3	#.m.a.r.z.ł.e.m.#	#./m/./a/./r/./z/./w/./ł/./e/./m/./#	#.m.a.r.z.ł>!NC.!NC.!NC./r/./z/./!NC; m>/m/; a>/a/; ł>/w/; e>/e/; m>/m/;
4	#.r.z.ę.s.y.#	#./rz/./ę/./s/./y/./#	r.z>/rz/.!ML; ę>/ę/; s>/s/; y>/y/;
5	#.s.z.c.z.w.a.c.z.#	#./S/./tS/./v/./a/./tS/./#	s.z>/S/.!ML; c.z>/tS/.!ML; w>/v/; a>/a/;
6	#.d.z.i.a.ł.o.#	#./dz/./a/./w/./o/./#	d.z.i.[SA1]-i>/dz/.!ML.!ML.!NC; a>/a/; ł>/w/; o>/o/;
7	#.j.a.b.ł.k.o.#	#./j/./a/./b/./w/./k/./o/./#	j>/j/; a>/a/; b>/b/; ł>/w/; k>/k/; o>/o/;

6.2. The layer of voicing status

Second layer in the present project is supposed to modify the voicing status of segments in words processed in the primary transcription layer (Śledziński 2019; Ostaszewska & Tambor 2000; Rocławski 2001). The change in the voicing status involves only obstruents – each segment of the second degree that is a voiceless obstruent (except for /x/) has its voiced counterpart, which is characterized by the same place and manner of articulation.

After being processed in the first layer of the project, the voicing status of the segments reflects the implicit voicing of the orthographic characters. In the example words: *podkowa*, *władca*, *nadfiolet*, *faldka*, *odpiorą*, /d/ segment would be used. However, after being processed in the second layer, the voicing status of the segments should reflect the actual articulatory features of speech. In the notation of the above words, the segment /t/ would be used.

The modification of the voicing status applies to the word initial, medial and final consonant groups, which in the original orthographic notation are heterogeneous in terms of the so-called orthographic voicing status (see Section 2.3). This modification consists in unifying the status of voicing within the groups. So, some voiced segments can be replaced with their voiceless counterparts or voiceless segments can be replaced by their voiced counterparts.

The following definitions of sets are used in the rules included in the voicing status layer:

[WD2]={/z/,/Z/,/z'/,/b/,/d/,/g/,/dz/,/dZ/,/dz'/};
 [WB2]={/f/,/s/,/S/,/s'/,/x/,/p/,/t/,/k/,/ts/,/tS/,/ts'/};

The following two rules deal with desonorisation. The first rule deals with the left-side devoicing context of /v/ segment of the second degree. The second rule deals with the right-side devoicing context:

[WB2]./v/>!NC./f/;
/v/. [WB2]>/f/.!NC;

The next rule presented concerns sonorisation:

/k/. [WD2]>/g/.!NC;

Segments /v/ and /rz/ of the second degree were excluded from WD2. In the adopted primary transcription they correspond to the letter *w* and the dyad *rz*, thus they are subject to lag assimilation. The possible inclusion of these segments in the WD2 set would render the example rule: /ts'/. [WD2]>/dz'/.!NC; and similar rules inapplicable. It would cause an incorrect voiced onset transformation in the example words: *ćwierć*, *ćwiczyć*. In the discussed solution, this is also the reason for the separation of the notation /rz/ next to the notation /Z/ (see Section 2.2).

Table 15 covers the processing of example words in the voicing status layer. The second column includes the same words that were used in Table 14 (after being processed in the primary transcription layer). Column three in Table 15 includes the words after applying the rules belonging to the voicing status layer. The fourth column shows that modification of the voicing status is necessary for three words: *roztwór*, *szczwacz* and *jablko*. In the word *roztwór* two second degree segments (/z/ and /v/) are replaced with their voiceless counterparts thanks to the presence of the rules: /z/. [WB2]>/s/.!NC; [WB2]./v/>!NC./f/;. In the word *szczwacz*, only the /v/ segment of the second degree is present in the devoicing context. In the word *jablko*, the modification includes the segment /b/ of the second degree. The semivowel /w/ is placed between it and the devoicing context.

Table 15: Processing sample words in the voicing status layer

No.	Word notation before applying rules	Word notation after applying rules	The applied rules
1	#./j/. /e/. /d/. /e/. /n/. #	#./j/. /e/. /d/. /e/. /n/. #	–
2	#./r/. /o/. /z/. /t/. /v/. /u/. /r/. #	#./r/. /o/. /s/. /t/. /f/. /u/. /r/. #	/z/. [WB2]>/s/.!NC; [WB2]./v/>!NC./f/;
3	#./m/. /a/. /r/. /z/. /w/. /e/. /m/. #	#./m/. /a/. /r/. /z/. /w/. /e/. /m/. #	–
4	#./rz/. /e/. /s/. /y/. #	#./rz/. /e/. /s/. /y/. #	–
5	#./S/. /tS/. /v/. /a/. /tS/. #	#./S/. /tS/. /f/. /a/. /tS/. #	[WB2]./v/>!NC./f/;
6	#./dz/. /a/. /w/. /o/. #	#./dz/. /a/. /w/. /o/. #	–
7	#./j/. /a/. /b/. /w/. /k/. /o/. #	#./j/. /a/. /p/. /w/. /k/. /o/. #	/b/. [SO2]. [WB2]>/p/.!NC.!NC;

6.3. Modification layer

The function of the final (third) layer has to do with various modifications in transcription. Some of the rules included in this layer are related to obligatory transformations, for example, related to various interpretations of Polish nasal consonants (Lorenc 2016). In the discussed project, in the primary transcription layer, temporary notation is assigned to the letter *ę* and to the letter *ą*: /ɛ/ and /a/. Rules in which all contexts are included are placed in the modification layer. The following list contains rules related to the transcription of the temporary notation /ɛ/ (based on Table 11 in *Automatyzaton...*):

/ɛ/.l/+w/>/e/.!NC;
 /ɛ/.#>/e/.!NC;
 /ɛ/.p/+b/>/e/&m/.!NC;
 /ɛ/.t/+d/+k/+g/>/e/&n/.!NC;
 /ɛ/.ts/+dz/>/e/&n/.!NC;
 /ɛ/.ts'+dz'/>/e/&n'/.!NC;
 /ɛ/.s'+z'+f'+v'+s'+z'+S'+Z'+rz'+x/>/e/&w~/.!NC;

The last rule in this list is appropriate for the word *rzeszy* after it has been processed in the voicing status layer (Table 16). One more rule is included in this Table: /b/.w/.k/>!NC.!RM.!NC;. It concerns the reduction of the semivowel in the word *jabłko*. This problem is particularly evident in Polish, which contains numerous consonant clusters with structures not found in other languages (Dobrogowska 1984, 1990, 1992; Dukiewicz 1985; Dunaj 1985, 1986).

The WB3 and WD3 sets (not used in the examples) are similar to the WB2 and WD2 sets. The only difference is the inclusion of /v/ and /rz/ segments in the WD3 set (the modification layer does not contain rules related to modifying the voicing status).

Table 16: Processing sample words in the modification layer

No.	Word notation before applying rules	Word notation after applying rules	The applied rules
1	#.j/.e/.d/.e/.n/.#	#.j/.e/.d/.e/.n/.#	–
2	#./r/.o/.z/.t/.v/.u/.r/.#	#./r/.o/.s/.t/.f/.u/.r/.#	–
3	#./m/.a/.r/.z/.w/.e/.m/.#	#./m/.a/.r/.z/.w/.e/.m/.#	–
4	#./rz/.e/.s/.y/.#	#./rz/.e/&w~/.s/.y/.#	/ɛ/.s'+z'+f'+v'+s'+z'+S'+Z'+rz'+x/>/e/&w~/.!NC;
5	#./S/.tS/.v/.a/.tS/.#	#./S/.tS/.f/.a/.tS/.#	–
6	#./dz/.a/.w/.o/.#	#./dz/.a/.w/.o/.#	–
7	#.j/.a/.b/.w/.k/.o/.#	#.j/.a/.p/.EMP/.k/.o/.#	/b/.w/.k/>!NC.!RM.!NC;

7. Conclusion

The publication presents the concept of the multi-layer model of text transcription. The author was inspired by Maria Steffen-Batogowa's book *The Automatization of the Phonemic Transcription of Polish Orthographic Texts*. This model can be useful in applications where there is a need to take into account various factors affecting the final transcription. These may be, for example, linguistic research or analysis performed for technical purposes.

The concept discussed here consists in the gradual processing of orthographic words. In successive stages of the algorithmic operation, the transcription of these words becomes more and more similar to the target transcription. In the terminology associated with the discussed model, the stages of the algorithmic operation are identified with successive layers. Each layer comprises an independent set of rules. The model does not dictate the functions assigned to each layer; instead, the model specifies the syntax, operation, and the principles of rule generation. On the example of the briefly discussed project, it has been presented that individual layers can be associated with specific text transcription issues.

The multi-layer model makes it possible to account for different phonological inventories and any phenomena or issues that affect transcription variability. This could be the synchronous or asynchronous realization of palatalization when pronouncing the orthographic sequences *gi*, *ki*, *ni* before a vowel (Retz 1989; Ročlawski 1984; Sawicka & Grzybowski 1999). Related to this problem is the possibility of separating the phonemes: /c/ and /j/. Another problem concerns the pronunciation of the so-called Polish nasal vowels. In more recent studies, this pronunciation is biphonemic, but phonological interpretations concerning particular contexts vary. Another issue that can be taken into account in projects based on the MLTM is the influence of morphological structure (presence of juncture) on the biphonemic realization of some orthographic dyads (e.g.: *dź*, *dz*). This publication also refers to the phenomena of reduction or assimilation of voicing within consonant groups. All these phenomena may be the subject of thorough research. It should be emphasized that the results of such research can be easily incorporated into any transcription system project based on the MLTM. This is due to the fact that the rules have a simple structure and can be applied to individual issues. This is the main advantage and edge over the solution presented in *Automatization...*, which assumes single processing of each word. Therefore, some rules are complex and may address several transcription problems simultaneously. This makes the whole set inflexible (its modifications are prone to errors). On the other hand, the possibility of linking rules with individual issues (in solutions based on the MLTM) opens a wide range of possibilities to create alternative subsets of simple rules. Another significant advantage of the discussed solution is a special segment indexation mechanism, which enables projection of the initial orthographic transcription onto the resulting transcription (regardless of the number of layers used). Such linkage of the orthographic plane with the phonological or phonetic plane increases the possibilities of linguistic analyses, as it enables the precise transfer of information between these planes.

Due to its volume, this paper does not discuss all the issues and concepts associated with the MLTM. These include: mapping lists, which allow a significant reduction in the

number of rules; the concept of generative systems, which facilitate generation of different sets of transcription rules; probabilistic systems, which make it possible to include the probability calculus in the rules. The paper also does not address interword anticipatory assimilation, i.e., the possible modification of a word-final based on the structure of the initial of the next word. Also, the section on the exemplary design of the transcription system is limited to discussing a few examples and does not contain information on many transformations specific to Polish language. It is not impossible to use the discussed model for transcription of texts in other languages, in particular for Slavic languages (Sawicka 1988, 2007). These issues will be further developed in future publications.

References

- Chomszyn, J. 1986. A phonemic transcription program for Polish. *International Journal of Man-Machine Studies* 25. 271-293.
- Demenko, G. & Wypych, M. & Baranowska, E. 2003. Implementation of grapheme-to-phoneme rules and extended SAMPA alphabet in Polish text-to-speech synthesis. In Demenko, G. & Karpiński, M. (eds.), *Speech and language technology*, vol. 7, 79-96. Poznań: Polskie Towarzystwo Fonetyczne.
- Dobrogowska, K. 1984. Śródgłosowe grupy spółgłosek w polskich tekstach popularnonaukowych. *Polonica* 10. 15-34.
- Dobrogowska, K. 1990. Word internal consonant clusters in Polish artistic prose. *Studia Phonetica Posnaniensia* 2. 43-67.
- Dobrogowska, K. 1992. Word initial and word final consonant clusters in Polish popular science text and in artistic prose. *Studia Phonetica Posnaniensia* 3. 47-121.
- Dukiewicz, L. 1985. Nagłosowe grupy spółgłosek w polskich tekstach popularnonaukowych i prasowych. *Studia Gramatyczne* 6. 17-34.
- Dunaj, B. 1985. *Grupy spółgłoskowe współczesnej polszczyzny mówionej (w języku mieszkańców Krakowa)*. Warszawa – Kraków: Państwowe Wydawnictwo Naukowe PWN.
- Dunaj, B. 1986. Wygłosowe grupy spółgłoskowe współczesnej polszczyzny mówionej. *Zeszyty Naukowe Uniwersytetu Jagiellońskiego: Prace Językoznawcze* 82. 103-117.
- Jassem, K. 1996. A phonemic transcription – syllable division rule engine. In *Proceedings of ONOMASTICA–COPERNICUS Research Colloquium Edinburgh* (pages unknown). Edinburgh: Centre for Communication Interface Research, University of Edinburgh.
- Kłowski, P. 2016. Algorithm and implementation of automatic phonemic transcription for Polish. In *Proceedings of 20th IEEE International Conference Signal Processing Algorithms, Architectures, Arrangements and Applications*, 298-303. Poznań: University of Technology.
- Korżinek, D. & Brocki, Ł. & Marasek, K. 2016a. Polish grapheme-to-phoneme tool and service. (<http://hdl.handle.net/11321/295>) (Accessed 2022-10-02)
- Korżinek, D. & Marasek, K. & Brocki, Ł. 2016b. Polish read speech corpus for speech tools and services. In *Proceedings, CLARIN Annual Conference 2016, Aix-en-Provence: Common Language Resources and Technology Infrastructure*. (https://www.clarin.eu/sites/default/files/korzinek-et-al-CLARIN2016_paper_20.pdf) (Accessed 2022-10-02)
- Lorenc, A. 2016. *Wymowa normatywna polskich samogłosek nosowych i spółgłoski bocznej*. Warszawa: Dom Wydawniczy ELIPSA.
- Lorenc, A. & Ptaszkowska, A. 2015. Programowanie języka dziecka z uszkodzeniem słuchu z zastosowaniem metody audytywno-werbalnej: Studium przypadku. *Logopedia Silesiana* 4. 229-247.
- Maksymienko, M. & Bolc, L. 1981. *Komputerowy system przetwarzania tekstów fonematycznych*. Warszawa: Wydawnictwa Uniwersytetu Warszawskiego.
- Nowak, I. 1995. Transkrypcja fonematyczna tekstów polskich. In Pogonowski, J. (ed.), *Eufonia i logos*. Poznań. Wydawnictwo Naukowe UAM.
- Ostaszewska, D. & Tambor, J. 2000. *Fonetyka i fonologia współczesnego języka polskiego*. Warszawa: Wydawnictwo Naukowe PWN.

- Pluciński, A. 1992. *Rekonstrukcja reguł transkrypcji fonematycznej na podstawie próby uczącej*. Poznań: Wydawnictwo Naukowe UAM.
- Przybysz, P. & Kasprzak, W. 2013. The generation of letter-to-sound rules for grapheme-to-phoneme conversion. In *6th International Conference on Human System Interactions (HSI) (Sopot, Poland)*, 292-297. IEEE (Institute of Electrical and Electronics Engineers). (<https://ieeexplore.ieee.org/document/6577838>) (Accessed 2022-10-02)
- Retz, R.I. 1989. Zanik korelacji palatalności we współczesnej polszczyźnie ogólnej. *Poradnik Językowy*. 1. 20-32; 2. 90-99; 3. 160-168.
- Rocławski, B. 1984. *Palatalność: Teoria i praktyka*. Gdańsk: Uniwersytet Gdański. Wydawnictwo.
- Rocławski, B. 2001. *Podstawy wiedzy o języku polskim dla glottodydaktyków, pedagogów, psychologów i logopedów*. Gdańsk: Glottispol.
- Sawicka, I. 1988. *Fonologia konfrontatywna polsko-serbsko-chorwacka*. Wrocław: Zakład Narodowy im. Ossolińskich.
- Sawicka, I. (ed.). 2007. *Komparacja współczesnych języków słowiańskich*. Vol. 2. *Fonetyka i fonologia*. Opole: Wydawnictwo Uniwersytetu Opolskiego.
- Sawicka, I. & Grzybowski, S. 1999. *Studia z palatalności w językach słowiańskich*. Vol. 1. Toruń: Wydawnictwo Naukowe UMK.
- Skurzok, D. & Ziółko, B. & Ziółko, M. 2015. Ortfon2 – tool for orthographic to phonetic transcription. In *7th Language & Technology Conference*, 115-119. Poznań: Adam Mickiewicz University. (<http://ltc.amu.edu.pl/a2015/book/papers/SPEECH1-2.pdf>) (Accessed 2022-10-02)
- Śledziński, D. 2019. *Asymilacja dźwięczności w polskich grupach spółgłoskowych*. Poznań: Bogucki Wydawnictwo Naukowe.
- Steffen-Batóg, M. 1989-1990. Rules for the mutual conversion of the phonemic and phonetic transcriptions of the Polish texts. *Lingua Posnaniensis* 32-33. 211-223.
- Steffen-Batóg, M. & Nowakowski, P. 1992. An algorithm for phonetic transcription of orthographic texts in Polish. *Studia Phonetica Posnaniensia* 3. 135-183.
- Steffen-Batogowa, M. 1973. The problem of automatic phonemic transcription of written Polish. *Biuletyn Fonograficzny* XIV. 75-86.
- SteffenBatogowa, M. 1975. *Automatyzacja transkrypcji fonematycznej tekstów polskich*. Warszawa: Państwowe Wydawnictwo Naukowe.
- Szypra-Kozłowska, J. 2007. Inwentarze fonemów języka polskiego i ich konsekwencje. *Logopedia* 31. 7-26.
- Warmus, M. 1972. Program na maszynie Odra-1204 dla automatycznej transkrypcji fonematycznej tekstów języka polskiego. *Prace CO PAN* 66. 1-22.
- Wells, J. 1997. SAMPA computer readable phonetic alphabet. In Gibbon, D. & Moore, R., & Winski, R. (eds.), *Handbook of standards and resources for spoken language systems*, part IV, section B. Berlin – New York: Mouton de Gruyter.
- Wolańska, E. 2019. *System grafematyczny współczesnej polszczyzny na tle innych systemów pisma*. Warszawa: Dom Wydawniczy ELIPSA.
- Wypych, M. 1999. Implementacja algorytmu transkrypcji fonematycznej. In Jassem, W. & Basztura, Cz., & Demenko, G., & Jassem, K. (eds.), *Speech and language technology*, vol. 3, 89-105. Poznań: Polskie Towarzystwo Fonetyczne.

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Angas-Sura etymologies X

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Dedicated to the memory of my dear Father,
József Takács (1940-2022)¹

Abstract: Gábor Takács, *Angas-Sura etymologies X*. The Poznań Society for the Advancement of Arts and Sciences, PL ISSN 0079-4740, pp. 73-96

The paper as part of a long-running series is devoted to the etymological analysis of a new segment (namely that with initial dental *z-) of the Angas-Sura root stock, a small group of modern languages remotely and ultimately akin to pharaonic Egyptian and the well-known Semitic languages or Twareg in the Sahara etc. Doing so, I wish to continue the noble tradition initiated by J.H. Greenberg (1958), the founding father of modern Afro-Asiatic comparative linguistics (along with I.M. Diakonoff), who was the first scholar ever to have established by Neo-Grammarians the methods regular consonantal correspondences between Angas-Sura and ancient Egyptian in his pioneering (painfully isolated) paper on the ancient trichotomy of the word-initial labials in both branches. Nowadays our chances in following this path are substantially more favourable being equipped with our gigantic comparative root catalogue system of the Egyptian etymologies ever published (ongoing since 1994) and of the Afro-Asiatic parental lexical stock (ongoing since 1999).

Keywords: comparative-historical linguistics, etymology, phonological reconstruction, consonantism, Afro-Asiatic, Chadic languages, African linguistics, ancient Egyptian, Semitic studies.

¹ A true *Lebenskünstler* in the best sense of the word, a lover of life and an almost perfect *perpetuum mobile* until the very end of his productive life. It was during writing this paper that his fronto-temporal atrophy (incurable at the moment all over the world) definitely forced him into bed. He, as originally a carpenter by his profession, had played an enormous rôle, beginning from 1993, in the long construction phases of the uncountable wooden containers in my traditional paper-based library in our good old panel block apt. at Székesfehérvár, which was moved in 2015 into our new house in Ederics bay. He took part in building up my Afro-Asiatic linguistic library also by transporting tons of xero-copies from abroad with his car, all in all several thousands of km, on a number of occasions when I had completed my extremely fruitful missions in the libraries of Frankfurt a/M (Dec. 2000 and Aug. 2002), Vienna (June and Nov. 2004, June 2007), Berlin (Sept. 2004).

Introduction

The languages of the Angas-Sura (AS) group are spoken between the South-Eastern Plateau and the Benue river, Plateau State of Nigeria, by about 200.000 people in the estimation of H. Jungrathmayr (1981: 407). The Angas-Sura language group belongs to the West Chadic subbranch (cf. e.g. Jng. 1981: 407-8; Stolbova 1987: 31; JI 1994 II: viii) of the Chadic branch, which, in turn, represents part of the great Afro-Asiatic (Semito-Hamitic) language family (or phylum), which is divided into six equipotential cognate branches: Semitic, Egyptian, Berber, Cushitic, Omotic, Chadic.

The best inner classification of the Angas-Sura group was suggested by C. Hoffmann (1971; 1975 MS: 2), who assumed Gerka to have been the first member split off from the group. The remaining group falls into three subgroups: (1) **Northern**: Angas, (2) **North-Eastern**: Sura (Mwaghavul), Mupun, Chakfem-Mushere Chip, Jorto, Kofyar, (3) **Southern**: Kanam (Koenom), Pyapun(g), Tal, Montol, Goemai (Ankwe). On the basis of my own research on comparative AS phonology, I can state that the phonological isoglosses confirm the correctness of Hoffmann's inner classification. Henceforth, I use the following (slightly modified) inner grouping: (1) **Gerka**, (2) **Angas**, (3) **Suroid** languages (falling further on in two clusters: 3.1. Sura-Mupun vs. 3.2. Kofyar-Mushere-Chip according to the isoglosses of the complex AS *gʸ-), (4) **Goemaioid** languages (Kanam/Koenom, Pyapun/Pyapung, Tal, Montol, Goemai).

The inner reconstruction of the Angas-Sura language group had only been elaborated in minor segments² until the first comparative lexicon of the Angas-Sura group has been completed (Takács 2004)³. Now, it has become plausible to systematically deal also with the

² Thus, J.H. Greenberg (1958) surveyed the Angas-Sura roots beginning with labials pointing out the original labial triad *b - *p - *f inherited from Afro-Asiatic. O. V. Stolbova devoted two studies to the subject, using basically the Angas (Foulkes 1915, Ormsby 1913-4) and Sura (Jungrathmayr 1963) lexicons for the comparison adducing some additional data from Chip, Montol, Gerka (collected and published by Jungrathmayr 1965). In 1972, she proposed a historical-comparative survey of the Proto-Angas-Sura consonant system in the light of some illustrative lexical material (2-3 exx. for each correspondence). In her 1977 paper, Stolbova presented 256 lexical roots and Proto-Angas-Sura reconstructions accompanied by a brief sketch of vowel correspondences. C. Hoffmann (1975 MS) offered a phonological (both consonantal and vowel) reconstruction of the Proto-Angas-Goemai level (on the basis of Goemai, Mernyang, Sura, and Angas) through 248 lexical roots. The West Chadic historical phonology by Stolbova (1987: 240-244) also contains a separate list of some 64 Proto-Angas roots.

³ I express my best thanks for the constant and many-sided unselfish support yielded for my work by the great Chadicist, Prof. Herrmann Jungrathmayr (Institut für Afrikanische Sprachwissenschaften, J.W. Goethe-Universität, Frankfurt a/M). I am greatly indebted also to the Alexander von Humboldt-Stiftung (Bonn) for facilitating my research stay at Frankfurt a/M (1999-2000, 2002) as well as for funding the publication costs of the Angas-Sura comparative lexicon together with the OTKA (Hungarian National Scientific Research Fund, project nr. D 45976). I express my deep gratitude to the City Hall of Székesfehérvár (Hungary) for its "Lánczos-Szekfü" prize granted almost twenty years ago for an early phase of my research on the Afro-Asiatic background of the Angas-Sura lexicon, which I eventually began back in Sept. 1998 during my research at the Haifa University (funded by the OSI at Prague, which is gratefully acknowledged also in this place) with the guidance of the late Prof. A.B. Dolgopolsky (1930-2012), one of the greatest Afro-Asiatic or Semito-Hamitic comparativists of all times, may his memory be blessed.

external cognates of the Angas-Sura lexical stock. The series “Angas-Sura etymologies”⁴ is contributing to outlining the so far unknown background of Angas-Sura lexical stock primarily with new lexical parallels. In this issue of my series, the new external (Afro-Asiatic) correspondences of some of the Angas-Sura (AS) roots with initial *z- are discussed, collected mostly during my 2019 research on the Afro-Asiatic root stock with initial dentals in my Ederics library.

Some peculiar elements of the Afro-Asiatic background of the Angas-Sura historical consonantism

- A general devoicing of the voiced PAA stops in the Auslaut of the AS stems is a recent development. There are but a handful of records of older final *-b#, *-d#, and hardly any for *-g# (cf. Takács 2004: xxv-xxvi, xxxi, resp.). Sometimes the devoicing of plosives may be observed even in other positions too under conditions that cannot be precisely known as yet.
- Labials basically reflect the original AA triad of *b, *p, *f as demonstrated by J.H. Greenberg (1958) and manifold corroborated by V.M. Illič-Svityč (1966: 9, 14-15), O.V. Stolbova (e.g., 1996: 15, §I.1.), and G. Takács (2001: 55; 2011: 148-152 etc.).
- AS *-VγV- < either an AA root medial “laryngeal” or a velar or a semi-vowel, i.e., where the -C₂- of AA *√C₁C₂C₃ was either *-h/?/ħ/ʕ- or *-g/k/γ/ʕ- or *-w/y-, but sometimes it is just epenthetic without a consonantal precedent (cf. Dolgopolsky 1982: 32-36).
- Original AA pharyngeals (*ʕ, *ħ) and laryngeals (*ʔ, *h) were mostly preserved in the Inlaut as AS *-γ- (above). In the Anlaut, normally, AA *ʕ- and *ʔ- > AS zero, while AA *ħ- and *h- > either AS *h- or zero. In the Auslaut, they mostly disappeared, but sometimes they developed in the contrary way, i.e., AA *ħ- and *h- may have resulted in AS *-k#.
- Final AS *-ŋ – beside being a natural result of an older nasal (*m, *n) + velar, of course – otherwise usually derives from the contraction of an AA medial nasal (*-m- or *-n-) + lost AA pharyngeal (*ʕ, *ħ) or laryngeal (*ʔ, *h), cf. already Illič-Svityč 1966: 33, fn. 11.

AS *z- (+ Ø, labials, dentals, velars) = Eg.-Brb.-Sem. *z- < AA *ʒ-

- **320. Goemai za** “fish species” [Hellwig 2000 MS: 42] (Takacs 2004: 421: isolated in AS) | Hausa (Sokoto) zááwà, (Katsina) zááwò, (Hadejiya) zááwà “a kind of fish” [Bargery 1934: 1137] = zááwò, var. zááwàyí “type of fish” [Abr. 1962: 972] (not discussed in Skinner 1996:

⁴ The first part (AS roots with initial *b-) appeared in *Lingua Posnaniensis* 46 (2004), 131-144. The second one (AS roots with *b-) in *Rocznik Orientalistyczny* (Warsaw) 57/1 (2004), 55-68. The third issue (AS *p-) in *Lingua Posnaniensis* 48 (2006), 121-138. The fourth part (AS *f-) has been published in *Folia Orientalia* (Kraków) 47/2 (2011), 273-289. The fifth part (AS *m- in monoconsonantal roots) in the *Cahiers Caribéens d’Égyptologie* (Schoelcher, Martinique) 13-14 (2010), 137-142. The sixth part (the rest of AS etymons with *m-) is forthcoming in *Rocznik Orientalistyczny* (Warszawa) 74/1 (2021), while the seventh one appeared in *Lingua Posnaniensis* (Poznań) 62/3 (2020), 95-120. The eighth part in *Folia Orientalia* (Kraków) 57 (2020), 321-354. The ninth part in *Lingua Posnaniensis* (Poznań) 63/1 (2021), 53-72.

298) || CCh.: Mafa žúwáy (zl-) “*Alestes macrolepidotus* (poisson)” [Br. & Bléis 1990: 405] || SBrb. (*Wanderwort*): WWlmd. zāwāy, pl. zāwāy-ān “esp. de poisson (à queue rouge)” [PAM 2003: 907] = “esp. de poisson: poisson-chien” (*Hydrocynus*-Arten)” [Ritter & Prasse 2009 II: 226] || Eg. zw “Art Fisch” (1x in XXII.: old word, Wb III 426, 11), perhaps also Eg. z “Art Fisch” (3x in XXII., Wb III 406, 12).⁵ areal word? Eg.-Hausa-Mafa: Stolbova 1994 MS: 2. The green (?) Saharan *Wanderwort* passed also into Songhay as nzawey (det. nzawa) “*Hydrocyon* de Forskahl (très vorace, mord les nageurs)” [Prost 1956] = zawey “*Hydrocyon brevis* & *Hydrocyon somonorum*” [Ducroz & Charles 1978] (quoted after Ritter & Prasse l.c.).

● **321. Suroid *zā** [GT]: Mupun zāa “to tease” [Frj. 1991: 69] (isolated in AS)⁶ || Sem. *√z^cz^c: Hbr. *māza^czē^c “oppresseur” [DRS], Aram. of Talmud za^czē^c “ébranler, effrayer” [DRS] || Ar. za^cza^ca “agiter, secouer avec force” [DRS] (Sem.: DRS 769). AS-Sem.: Takács 2001: 78; 2011: 154.

● **322. Goemai *zā** [GT]: Goemai zaa “to be sickish” [Sirlinger 1937: 282] (Takacs 2004: 421: isolated in AS)⁷ || LECu.: Afar da^cayn [Sasse 1979: 55: d- < ECu. *z- regular] “old” [Ehret 1987] || SCu.: Alagwa da^c-it-im-o [d- < SCu. *ž-?] “weak” [Ehret 1980: 163, #II.A.12]⁸ < ECu. *zaⁱ - “to be thin, weak” [Ehret 1987] = *ža^a- (?) “feeble” [GT] (Cu.: Ehret 1987: 54, #200) || Sem.: cf. ES *√z^cz^c (?) [DRS]: Amharic zazza ~ žažža ~ žožža ~ žažža “être fatigué, faible” [DRS 769] < PAA *√d/z/ž^c “feeble” [GT]. AS-Sem.: Takács 2001: 78; 2011: 154.

⁵ J. Osing’s (2001, col. 572) view, that it occurs “nur (sic) Naville, Festival Hall, pl. 18 (22. Dyn.)” and that it had an “ursprünglicher Ansatz vermutlich s3jw (< s3rw Synodontis Schall, Bloch-Schneider?)”, discloses a rude simplification of the problem and can, henceforth, only be conceived as misleading. There are several fish-names with an initial s- or z- + weak consonant or r with diverse determinatives denoting probably unrelated specimens that are not to be confused. Most recently D. Meeks (kind p.c. on 6th April 2004) classified all these words max. in seven but at least in three diverse groups. Of all these, the following circumstances are important for our discussion. (1) First, the fish-name z occurs, according to I. Gamer-Wallert (1970: 45), already on the Ostr. Deir el-Medine no. 443.4. (2) Secondly, Meeks (AL 77.3326, 77.3351) long ago emphasized that the etymological status of LEg. z vs. zw (XXII.) should be carefully distinguished from that of NEg. s3r (perhaps with a var. s3) which is clearly a “synodonte” (Valbelle 1977: 24, #21-2, also RdÉ 29: 11). Note that the determinatives of s3r vs. the z words are also different. (3) Thirdly, the determinative of NEg. s (Valbelle 1977, no. 5217) depicts a “mormyre” (AL l.c.), again a distinct specimen, hardly connected to s3r. (4) The form s3j.w occurs once in CT VI 245u as the name of a fish-god, and its sense is still obscure (Gamer-Wallert 1970: 33, fn. 195: “e. Gottheit”, AECT II 211: “s3yw-fish”, DCT 439: untranslated). Meeks (p.c.) does not exclude a connection between CT s3j.w and NEg. s3r, but this is not yet demonstrated either. In his opinion, “z et s(3) sont probablement différents et, de plus, on voit difficilement comment s3rw ou s3jw pourrait donner z ou zw”. One can only agree with this careful view.

⁶ Takács 2004: 421: combined with Goemai zaa “to be sickish” [Sirlinger 1937: 282], which now seems semantically dubious.

⁷ Takács 2004: 421: combined with Mupun zāa “to tease” [Frj. 1991: 69], which now seems semantically dubious.

⁸ Derived by Ch. Ehret (1980: 163, #II.A.12) from his alleged SCu. *da^c- “to be weak, be frail” [Ehret] based on its semantically far-fetched equation with Ma’a mda’amá “crutch, cane, old man’s walking stick” and Dahalo dá^cani “widow”.

- **323. Goemai *zʷi** [GT]: Goemai zwi “a roll”, zwi toeḅa “a roll of tobacco” [Sirlinger 1937: 287] (Takacs 2004: 429: isolated in AS) || NBrb.: Qabyle \sqrt{zy} [Dallet 1982: 963] = \sqrt{zzy} regular < \sqrt{zwy} [GT] > e-zzi “1. (re)tourner, revenir, se retourner, 2. enrouler”, tu-zzya “1. action de tourner, tour, 2. giration (rite d’expulsion du mal)” [Dallet 1982: 963].
- **324. Suroid *zō** (or ***zo**) [GT]: Mushere zoo (false vowel length?) “slope” [Diyakal 1997 MS: 345] (Takacs 2004: 425: isolated in AS) || SBrb. $\sqrt{zh_1h_2}$ “vallon en pente faible” [Prasse]:⁹ Tadghaq ä-ša [Foucauld apud Prasse], Ayr ä-za [Foucauld apud Prasse], Ahaggar ä-ha, pl. i-hah-ân “vallon à fond en pente très faible, un vallon où, la pente du sol étant faible, les eaux stationnent et produisent une belle végétation (il peut être en plein ou en montagne; certains äha se jettant dans d’autres vallons, dans des ravins, ou dans des vallées; d’autres se déversent sur des plateaux où ils se penchent, d’autres sont de petits bassins formés)” [Foucauld followed by Prasse] (SBrb.: Foucauld 1951-2 II: 500; Prasse 1969: 43, #118) || Sem.: Eth.-Sem. $\sqrt{zw(zw)}$: Tigrinya zāw bälä “pencher (céréales), tomber sur les épaules (chevelure)”, zāzāw bälä “bouger, se balancer”, zazāwä “pencher incliner”, Harari zāw bayä “pencher (arbre, maison), changer d’avis” (Eth.-Sem.: DRS 696 and 712, ZZW).¹⁰
- **325. Mupun zù** “free of charge” [Frj. 1991: 69] (Takacs 2004: 425: unidentified in AS) | Bole-Tangale \sqrt{zVw} - “to sell, buy” [CLD] || CCh.: Kotoko-Makari nzayo “contribution” [Allison 1999: 44 > CLD] | Lame (Zime-Batna) zù “cadeau” [Sachnine 1982 > CLD] < Ch. \sqrt{zV} - “a present” [CLD] (Ch.: CLD III 112, #371) || Sem. \sqrt{zw} > Hassaniyya zowze “donner peu” [CTC > DRS 699, ZWZY3: isolated in Sem.], perhaps Ar. zawwaḅa II “donner en cachette et souvent” [Cherbonneau I 428 > DRS 701, zwḥ2: isolated in Sem.]. Any connection to Eth.-Sem. $\sqrt{zhw/y}$ (??): Tigre zəho “otage, garantie” [WTS 493 > DRS 691, ZHW/Y4: isolated in Sem.]?
- **326. Pangas *-zū** (with prefixes ***tē-/*lē-**) “1. ant sp., 2. anthill” [GT]: Angas tai-su zum (so, -su!) “ant” (cf. AS \sqrt{zuyum} “ant sp.”, q.v.) [Ormsby 1914: 207] = lee-zuu “an ant-hill”, tee-zuu “the ordinary white ant, which is capable of killing the big black ant” [Foulkes 1915: 237, 292] = ntèe-zu (Kabwir dialect) ~ tèe-zu (Kabwir dialect) “1. small low anthill”, “2. a big white ant building houses” [Jng. 1962a MS: 29, 40] = te-zu “termite, termite-hill” [ALC 1978: 63] = tē-zu “termite”, lù tē-zu “anthill” [Kraft], perhaps identical with Mushere \sqrt{zi} - (as prefixed element in compounds) “ant sp.” (q.v.) || CCh.: PMasa \sqrt{zuwa} ~ \sqrt{siw} (?) “termite” [GT]: Gizey ṣiwṣiwṣ vs. Wina ṣùṣù, Musey ṣiwṣ, Marba ṣiwṣ “termitière”, cf. Masa ṣùṣ ~ zùṣ vs. Gizey/Wina and Musey ḅùṣ “termite ailée” [Ajello et al. 2001: 54], Lame zùwà “termite sp.” [Sachnine 1982: 436], Zime-Dari zùwà “termite ailée, comestible” [Cooper 1984: 31].
- **327. Goemai *zāp** (perhaps **AS *zayap?**) [GT] > Goemai zaap [-aa- regular < AS \sqrt{aya} - < AA $\sqrt{VH/KV}$ -] “to alter, change” [Sirlinger 1937: 283] (Takacs 2004: 422: isolated in AS)

⁹ Prasse l.c.: “À cause de la chute totale au sg., le second *h* du pl. est peut-être à regarder comme in *h* primitif.”

¹⁰ Affiliated in DRS 696 with Harari zāwzāw bayä “être agité par le vent” and NBrb.: Mzab zwa “être ventilé, aéré” etc.

III Sem.: Ar. zaʔaba “changer”, zuʔāb- “instabilité, vicissitudes (du temps)” [BK I 965-966, cf. DRS 665]. AS-Sem.: Takács 2001: 79; 2011: 155.

● **328. AS *zʷop ~ *zʷop > *žop** “to plunge, dip (into a liquid)” [GT]:¹¹ Angas zop [žop with ž- < AS *zʷ-/ *zʷ-] “to soak” [ALC 1978: 70], Mupun ziōp “1. to push, dip, twist, 2. have sexual intercourse, satisfy urges” [Frj. 1991: 69], Goemai zwop “to dip something partly or fully into water” [Sirlinger 1937: 287] (AS: Takacs 2004: 429) III Sem.: ES *√zʷfz: Geez zafzafa, Tigre zāfzāfā, Amh. zāfāzzāfā “plonger dans l’eau, faire fermenter”, Tigrinya zāfzāfā “macérer, amollir en trempant” (ES: DRS 778) < PAA *√3P (either *-p or *-f) “1. to dip, 2. impegate” [GT].

● **329. Goemai zwop** “to protrude (e.g. lips)” [Sirlinger 1937: 287] III Sem. *√zwp: Omani Ar. √zwf I: zāfa “déborderer” || Geez ta-zawwafa, ta-zāwafa, Tigre zāfwādā “se vanter” (Sem.: DRS 708, ZWP2-3: with some semantically doubtful parallels) < PAA *√3wP (either *-p or *-f) “to rise (?)” [GT].

329.1. Remotely related to a variety with voiced C₂, viz. Sem. *√zby: Ar. √zby: tazābā “marcher avec fierté, se comporter avec hauteur” etc., zuby-at- “terrain élevé que l’eau n’inonde pas etc.”, Maghrebi dialect zubyā “fosse à fumier, tas d’ordures etc.” (Ar.: DRS 673, ZBY2-3: isolated in Sem.).

● **330. Mupun zāt** (adv.) “straight” [Frj. 1991: 69] (Takács 2004: 423: isolated in AS) III (?) NOm.: Yemsa *zata “to pull” [Bender 2003: 171, #103] vs. Yemsa sūutú “to pull” [Alemayehu] | Kafa šot- “to pull” [Bender 2003: 171, #103] III (?) Sem. *√ztt: cf. esp. Ar. (Maghreb) zəttət “se précipiter droit devant soi” [DRS 807] < PAA *√3t “1. to stretch out (?), 2. straighten” [GT]. AS-Sem.: Takács 2001: 79; 2011: 155.

● **331. Goemai zat** “to convulse” [Hellwig 2000 MS: 42] (isolated in AS: Takács 2004: 423-424) || CCh.: Gizey/Wina žiḏ, Masa žiriḏ [-r- < *-ḏ-?] “trembler” [Ajello et al. 2001: 55], cf. Lame žèḏ (dz-) “taper à petits coups” [Sachnine 1982: 408] || ECh.: Mubi-Toram *√[z]ḏk “to beat” [GT]: Mubi zòḏògé (zùḏùk, zùḏóok), pl. zàḏàgé (zèḏík, zìḏáak) “battre, taper” [Jng. 1990 MS: 49], Toram hiḏik [h- < *z-?] “abattre un arbre” [Alio 2004: 256, #188] III NBrb. *√zuḏ [Renisio] = *√zwd “to shake” [GT]: Iznasen, Tuzin, Wariaghel, Iboqqoyen, Ait Ammart e-zwəḏ, Senhazha e-zwi [-Ø < *-ḏ] “secouer un arbre, une branche, pour en faire tomber les fruits” [Renisio 1932: 320] | Tamazight √zuḏ: zawḏ “lancer, jeter, se débarrasser de qqch. en lançant au loin” [Taïfi 1991: 817] III Sem. *√zṯ (“groupe biconsonantique ... à la base de plusieurs racines, comportant des élargissements, et qui présentent parmi les valeurs, celle de ‘jeter, lancer’, valeur qui peut être associée à la notion de ‘avalier de grousse bouchées’”) [DRS 720, -zṯ-] = “to be (or move) perpetually agitated (?)” [GT] > Ar. zaṯṯa “bourdonner (mouche)” [DRS 720, zṯ1], Dathina zaṯzaṯ “se glisser, se faufiler partout” [GD

¹¹ Earlier, assuming a primary sense “to dip into, push into a liquid”, I was disposed to affiliated this root with Sem.: Ar. √zʷf I zaʔafa “presser, exciter à plus vite”, IV ʔazʔafa “achever un blessé, 2. alourdir quelqu’un au point de l’empêcher de se mouvoir (ventre)”, cf. Ar. (dialect of Chad) zahaf “avancer, se pousser un peu” [DRS 668, 694]. AS-Sem.: Takács 2001: 83; 2011: 158.

1838] || ES: Amh. ʔazāṭāzzātā “travailler sans suite, de temps en temps”, zāṭṭzāṭṭ alā “aller de côté ou d’autre, musarder, avoir un trot fatiguant” [Baeteman 1929: 852] (Sem.: DRS 720, zṭṭ1-2) < PAA *√zṭ “1. to shake, 2. agitate” [GT].

● **332. Mushere *zet**, in: **met-zet** “fast jump over sg.” (cf. AS *met “to jump”) [Diyakal 1997 MS] (isolated in AS: Takács 2004: 423-424) || Sem. *√zd “to move vehemently (?)” [GT] > Moroccan Ar. √zdy (extended via weak C₃): zāda “agir sans interruption” [Colin 1993: 699 > DRS 688, zdy: isolated in Sem.], cf. also Ar. √zdh (extended via pharyngeal C₃): Moroccan Ar. zdaḥ “jeter brutalement sur le sol un objet lourd et mou (sac, etc.), s’asseoir ou marcher lourdement, damer le sol”, zdēḥ “bruit de chute d’objets lourds ou de pas lourds”, mæzdāḥ “gros derrière, lourd, mou” [Colin 1993: 698], Zaër zaddaḥiyya “petite outre à battre le beurre” [Loubignac 1952: 443] (Ar.: DRS 688, zdḥ1, 3, resp.) vs. Ar. √zdʕ: zadaʕa “cohabiter avec une femme”, mizdaʕ- “agile et qui va vite en besogne” [BK I 982; Beaussier 1913: 427 > DRS 689, zdʕ2] < PAA *√zd “to act fast (?)” [GT].

332.1. Is this root eventually related to CAA *√zwd “1. to push, 2. chase” [GT]? Cf. Sem.: Maghrebi Ar. (borrowed from NBrb.) zawwəd/t/ṭ “chasser, renvoyer” [Lentin 1958: 119-120 > DRS 698, zwd/t/ṭ: isolated in Sem.] || NBrb.: Qabyle √zwd: zewwed “2. chasser, expulser à coups de bâton” [Dallet 1982: 960] || CCh.: Mbara zūt “pousser (push)” [TSL 1986: 282] | PMasa *zut “to push” [GT]: Masa-Bongor zūt-nà “pousser” [Jng. 1971/2 MS: 118, 139], Masa zūt “pousser” [Caïtucoli 1983: 157], Gizey and Wina, Masa, Ham, Musey, Lew, Marba all: zūt “pousser” [Ajello et al. 2001: 46].

● **333. AS *zet** > (?) **zet (?) > (???)¹² *žet “short, small” [GT]: Mupun ḥá-žèt “small, short” [Frj. 1991: 8], Goemai zèt [zet] “a very small sized bird” [Sirlinger 1937: 285] (isolated in AS: Takács 2004: 424) || Sem.: PArAm. *√zwt [DRS]: Targumic and JPArAm. zōṭā “tendre, jeune, petit”, Syr. zawṭā “petit garçon”, Mandaic zuṭa “petit”, NArAm. zūt “petit” (Aram.: DRS 701, zwt1, isolated in Sem.) < PAA *√zṭ “small” [GT]. Cf. the entry no. 336 for AS *zatur ~ *zatur (var. with *ž-?) “sort of small insect” [GT] below.

● **334. PGoemai *zōt** (from *zut?) [GT]: Goemai zūt [zūt] “to boil in water” [Sirlinger 1937: 286], eventually cognate with a variation in PAngas *žwīt “to cook guinea corn” (AS: Takács 2004: 425) || Sem. *√zyd “to well up” [DRS]: i.a., OHbr. √zyd: qal (zād) “être enragé contre”, hifil “faire bouillir, s’enorgueillir”, NHbr.-Aram. zūd, zīd “bouillir, déborder” (Sem.: DRS 722) < CAA *√zwd “1. to boil” [GT].

● **335. Suroid *zut** [GT]: Mushere zut “plenty, sufficient, much (describing coming out of sg. like mucus inside nose)” [Diyakal 1997 MS: 347] (Takács 2004: 428: isolated in AS) || NOm.: PYemsa (Janjero) *zutt- “all” [GT]: Yemsa zùtt- “all” [Akililu-Siebert] = ’zut- “all” [Bender] = zūt- “to gather” [Lamberti] = zutt- “all” [Wedekind] (Yemsa: Bender 2003: 158, #1) || NBrb.: Qabyle √zdy: e-zdi “1. unir, rassembler, 2. être uni, s’unir, 3. être dans

¹² Provided it was not a secondarily palatalized (*ži- < **di-) reflex of AS *di/ut “short, small” [Takacs 2004: 73].

l'indivision familiale (famille traditionnelle, les frères, leurs femmes, sous la direction de l'aîné" [Dallet 1982: 931], cf. also Qabyle (borrowed from Ar. \sqrt{zyd}) \sqrt{zyd} : zid "1. être abondant, considérable, excellent, être exagéré, superflu, 2. ajouter, continuer" [Dallet 1982: 965] III Sem. $*\sqrt{zyd}$ "to increase" [GT]: Ar. zāda "augmenter, accroître", zāyada "enchérir sur qqn.", (?) tazāda "naître" || MSA: Jibbali zed, Mehri zəyūd, Harsusi zōd, Soqotri zed "augmenter, s'accroître", Mehri zōyəd, Jibbali, Harsusi zēd "plus" || ES: Tigre zedä "être plus, plus précieux, exceller", Tna. zayädä "1. emporter sur, avoir l'avantage" vs. Oriental Ar. dialects $*\sqrt{zwd}$:¹³ zawwad "donner en sus, donner comme augmentation", dzawwad "être augmenté", zawwad "munir de provisions de voyage, etc.", Egyptian dialect ziwāda "augmentation (de salaire)", Iraǧi zād, impf. izūd "être en excès", Central Arabian dialect ʔazwad "plus, de vantage", Omani Ar. min zīd "plus que", Tunisian Ar. zāda "aussi, de même" (Sem.: DRS 722-723) < PAA $*\sqrt{zd}$ ~ $*\sqrt{zt}$ "1. much, 2. (to unite) all" [GT].

● **336. AS *zatur ~ *zutur** (var. with *ž-?) "sort of small insect" [GT]: Angas žatur [žatur] "a flea" [Foulkes 1915: 200] = nžätür "Wanze" [Jng. 1962a MS: 46], Sura nzütür ~ nzëtür [irreg. z- < *ž-] "Wanze" [Jng. 1963: 77], Mushere zutur "bedbug" [Diyakal 1997 MS: 345] (AS: Stolbova 1987: 186, #372; Takács 2004: 423, 428) III Sem. $*\sqrt{ztr}$: Aram. of Targum zōtrā "petit, jeune", zōtar "paraître petit", Syr. zātrā "jeune garçon" (Aram.: DRS 721, ztr1: isolated in Sem.) < PAA $*\sqrt{ztr}$ "small (creature)" [GT]. May be an ancient (PAA) C₃ root extension of a primary biliteral root. Cf. PAA $*\sqrt{zt}$ "small" [GT] above in the entry no. 333 for AS *zet > (?) **žet (?) > (???)¹⁴ *žet "short, small" [GT].

● **337. Suroid *zoyop** [GT]: Kofyar zogop "crushing, to crumble, pound in mortar" [Netting 1967: 46] (Takács 2004: 426: isolated in AS) III Sem. $*\sqrt{z^{\circ}p}$ > Aram. of Targum zəʕap "1. heftig sein, 2. zürnen" [Dalman 1922: 131] = "stürmen, toben" [Levy 1924 I: 546] = "to rage, threaten, storm" (cf. zaʕāpā "stormwind, hurricane") [Jastrow 1950: 408] = "être violent, impétueux, en colère" [DRS], Syr. $\sqrt{z^{\circ}p}$ "pousser, presser" [DRS], NSyr. zāʕūpā "coup" [DRS] | Ar. zaʕafa I "he killed (so.) on the spot or cast, shot (at so.), smote (so.) so that one died on the spot, quickly, he killed (so.) quickly", IV "he hastened and completed (so.'s) slaughter" [Lane 1231] = I also: "housser, nettoyer avec le houssoir (balai de branches, de plumes)" [Dozy I 502] = I "tuer qqn. sur place" [DRS] (Sem.: DRS 771 with further semantically dubious *comparanda*) vs. Ar. zaʕaba "repousser, éloigner qqn., couper, retrancher, partager, emplir, charger d'un fardeau, charger qqn. d'injures" || ES: Tigre zäʕabä "faire mal, causer de la douleur" (Sem.: DRS 766-767, zʕb1 with semantically untenable *comparanda*). Further root varieties:

¹³ DRS I.c.: "En arabe, dans les dialectes orientaux surtout, la deuxième radicale apparaît dans de nombreuses formes comme W... ces formes ont aussi des valeurs qui procèdent de ZWD ...". Ch. Ehret (2000 MS: 109, #1511) affiliated Ar. zaud- "increase, growth", zaid- (v.n.) "to increase, augment" ("durative" root extension *d) with PCu. *zayl- "heavy", some Ech. *ḏw "grass" and Ngizim ḏūwāy- "to sprout, become bushy", PCh. *ḏy "mountain", NOm.: Dorze zūm-a "mountain" etc. < AA *-zay-/*-zuw- "to grow, swell, rise".

¹⁴ Provided it was not a secondarily palatalized (*ž- < **di-) reflex of AS *di/ut "short, small" [Takács 2004: 73].

337.1. Extended with a different (velar) C₂, cf. Sem. *√zḳp > Oriental Ar. zaqqaf “battre des mains en mesure, applaudir” [DRS 785, ZQP4: isolated in Sem.].

337.2. Without the pharyngeal and velar C₂, the pure biradical core root, cf. SAA *√ḳp/f/b (???) “1. to pound, 2. thresh” [GT] > Ch. *ḳVb- “to pound” [CLD III 221, #1017] || PCu. *za/if- “to pound (grain)” [Ehret] = *√ḳf¹⁵ “to thresh (grain) by pounding (?)” [GT] > NAgaw: Bilin žāfžāf “to thresh” [Ehret: Agaw *ḳ > Bilin ž] (not found in Reinisch 1887: 176) || (???) SCu. *d/ḳi/īf- “to pound” [Ehret]: Iraqw dif- “to butt”, Gorowa dif-it- “to thresh”, Burunge dif- “to beat”, Alagwa dif- “to fight” | Ma’a mu-dufú “flour” (SCu.: Ehret 1980: 165, #II.A.25) || Eg. zp.t (OK: “auch ohne *t* geschrieben”) “1. die Tenne (vgl. das Schriftzeichen), 2. der auf der Tenne zum Dreschen aufgeschichtete Garbenhaufen, bes. in den Verben: wbs (r) zp.(w)t, ḥw zp.t.” (OK, MK, Wb III 434, 12-18).¹⁶ Bilin-SCu. due to Ch. Ehret (1987, 54, #197). The correspondences of Ch. *-b- vs. Eg. -p vs. SCu. *-f- are irregular, so we may only assume here the remote cognacy a loosely related variant roots.

337.3. The variety of the same biradical root with a voiceless C₁, cf. AA *-sa/āp- “to hit repeatedly” [Ehret] = *√sp (perhaps AA *sap-) “1. to hit, 2. grind grain by pounding” [GT] > Sem.: Ar. safa^a I “1. frapper, donner un coup (se dit surtout des oiseaux, lorsqu’en combattent ils se donnent réciproquement de vigoureux coups d’aile), 2. souffleter qqn., lui donner un soufflet, des soufflets, 3. (en gén.) frapper, battre, 5. saisir qqn. au toupet, et le traîner ignominieusement après soi” vs. safaqa I “1. fermer (la porte) avec bruit, 2. souffleter (les joues)”, safq-at- “poignée de main (qui se donne soit pour saluer qqn., soit pour conclure un marché)” [BK I 1100-1101] = safc- “to box the ears, beat”, safq- “to box on the ears” [Ehret] || ECu.: Yaaku -sāp- “to grind to flour” [Heine 1975: 126] || SCu.: Burunge sap- “to forge (iron)” [Ehret] || Ch. *sV[p]- “to pound” [CLD III 49, #78] > WCh.: Ngizim sàpḏú “to do first pounding (of grain) to remove bran” [Schuh 1981, 144]. Ar.-Burunge-Ngizim due to Ch. Ehret (1995: 162, #226).

337.4. Some of the reflexes listed under **#329.1.** (viz., Bilin žāfžāf, SCu. *d/ḳi/īf-) and **#329.2.** (Yaaku -sāp-) were confused by Ch. Ehret (1987: 54, #197) as reflexes of phonologically one and the same parental root, compared under his alleged PCu. *za/if- “to pound (grain)” [Ehret].¹⁷ But, ignoring further comparative data and the results (primarily, of I.M. Diakonoff and his Muscovite team) in AA comparative-historical phonology, he failed to see how much his misconceived PCu. *z- here clearly contradicts to, e.g., SCu. *d/ḳ- (in fact, just *d- < AA *d- or *ḳ-) or Yaaku s- (regular from both ECu. *s-/ḳ-).¹⁹

¹⁵ SCu. *-f speaks evidently for PCu. *-f, which does not agree either with Eg. -p nor Ch. *-b.

¹⁶ Assuming an arbitrary primary sense of threshing that “removes waste portions of the grain”, it was affiliated by Ch. Ehret (2000 MS: 105, #1490) with Ar. zafar- “dirt” and NOM.: Mocha yòpp- “to clean teeth” < AA *-zāp- “to clean, remove dirt, rubbish, waste”.

¹⁷ Affiliated by Ch. Ehret (1995: 147, #187) with Eg. zf “to cut off/up”, sfsf “to break (?)”, zft “to slaughter”, zft “sword, knife”, WCh. *ḳāft- “flour” < AA *-zif- “to break up (by hitting)”.

¹⁸ One wonders if SCu. *d-, although this was not directly demonstrated by G. Takács (1999: 412; 2000: 77-78, §4), was beside SCu. *d- < AA *d-, also a possible reflex of AA *ḳ- too via depalatalization just as Ug., Aram., Soqotri ḳ- via common Sem. *ḳ- (cf. SED I LXVIII-LXIX; Kogan 2009: 28-29) or Eg. ḳ- ~ z- (cf. EDE I 248-249, 268).

¹⁹ See Sasse (1979: 54): “Both *s and *ḳ normally continue as s” in Yaaku, for which instances were listed (q.v.).

- **338. AS *za₃ya₃t** “to tie (into bundle)” [GT]: Angas zàt “to hobble (e.g. a horse)” [Jng. 1962a MS: 45], Sura za₃ya₃t “Holzbündel” [Jng. 1963: 89], Mupun zòt [strange short -o-] “bundle”, zót “to tie up, bundle up” [Frj. 1991: 69] (AS: Takacs 2004: 421) ||| Eth.-Sem. *√zKT (in diverse C_{2/3} varieties) “1. to join, 2. complete” [GT]: Tigrinya zākātā “1. ajouter” (beside “2. enfermer, bloquer, 3. saupoudrer”) [DRS 731, ZKT3: isolated in Sem.] vs. Tigrinya zāgātā “réunir en un lieu étroit, enfermer, parquer (les bêtes)” [DRS 688, ZGT: isolated in Sem.] vs. Geez zagada, Amharic žāggādā “ajouter du bois sur le feu”, tāžgwädāgg^wädā “se multiplier, grandir, se presser, se bousculer (foule)”, Harari zēgāda “étendre” (Sem.: DRS 683, ZGD2) < CAA *√₃KT (diverse C_{2/3} varieties) “to (ad)join” [GT].
- **339. AS *zu₁yut** “heap” [GT]: Sura zūgút “Haufe” [Jng. 1963: 89], perhaps reflected also in the 2nd component of Kofyar kom-zūgút [< *zu₁yut] “guržiya, Bambara ground nut” (cf. Kofyar kóm “ground nuts” < AS *k^wam “groundnut” [GT], Hausa gúržíyáá ~ gúžíyáá “Bambara ground-nut” [Abr. 1962: 339]) [Netting 1967: 20] (Takacs 2004: 427: isolated in AS)²⁰ || CCh.: Uldeme zikètəŋ “entasser”, zəkāt “faire un tas de terre, réunir” [CLD III 125, #450 with further dubious parallels] ||| (???) SBrb. *√zgd “to jump up” [GT: < * “to rise up by jumping (???)”]: Ayr žāggādo, EWlmd. žāgādo, pl. žāgādo-tān (m) [žāgādāw, pl. žāgādāw-tān] “1. course entrecoupée par des sauts, 2. saut rapide, haut et long”, but cf. EWlmd. a-zāgāda, pl. i-zāgāda-n “pente” [PAM 2003: 878] ||| Sem.: Ar. zakata “remplir un outre”, Sudanic Ar. zakat “manger à satiété” (Ar.: DRS 731, ZKT2: isolated in Sem.) vs. Sem. *√zgd: Yemeni Ar. zağda “tas, touffe” || MSA: Mehri zēgəd, zəgūd, Harsusi zegōd “soulever, piller, saisir”, Soqotri zegid “lever, charger sur qqn.” || Geez zagada, Amharic žāggādā “ajouter du bois sur le feu”, tāžgwädāgg^wädā “se multiplier, grandir, se presser, se bousculer (foule)”, Harari zēgāda “étendre” (Sem.: DRS 683, ZGD2) < CAA *√₃Kd “1. to heap up, 2. fill up, 3. rise” [GT].
- **340. AS *zu₁yum** “1. generous, 2. gift (lit. ‘generosity?’)” [GT] = *zu₁gum [Stolbova] = *zu₁yum “present, gift” [Dlg.]: Angas zum “gift, a present” [Ormsby 1914: 208, 314] = zum “1. a present, 2. generous” [Foulkes 1915: 312] = zum “Geschenk” [Jng. 1962a MS: 45] = (bii) zuum “present, gift” [Hoffmann] = mbi-zum “gift” [ALC 1978: 37], Sura zūgùm ~ zūyùm “Geschenk, Gabe” [Jng. 1963: 89] = zugum ~ zu₁yum “present, gift” [Hoffmann], Mupun zūùm “to give gifts”, zūum “gift” [Frj. 1991: 70] (AS: Hoffmann 1975: 21, #113; Stolbova 1977: 158, #255; Takacs 2004: 426) ||| Eth.-Sem. *√zHm (or *√zmH) [GT]: Amh. žāma “très généreux” [DRS 743]. AS-Sem.: Takács 2001: 80; 2011: 156.
- **341. AS *zu₁yum** (var. *z^wayam?) “cold” [GT] = *zu₂gum “cold” [Stolbova] = *zu₂yum “to become cold” [Hoffmann]: Angas (hill) zum “cold (of water)” [Foulkes 1915: 313], Sura zūgùm ~ zūyùm “kalt” [Jng. 1963: 89] = zugum ~ zu₁yum “to become cold” [Hoffmann] = sūyùm (so, s-) “coldness” [Kraft], Mupun zùm ~ zūum “cold”, zùmzūum “very cold” [Frj. 1991: 48, 70], Kofyar zūgum “cold” [Netting 1967: 46] = zugum “to become cold” [Hoffmann], Montol kut-zum “cold” (cf. AS *kūt “cold, wind”) [Ftp. 1911: 215], Goemai

²⁰ Any connection to Goemai šat [< *šayāt? irreg. š-] “heap” [Hellwig 2000 MS: 33]?

zââm [zɔɔm < *zaɜyaɜm or *zoɔom < *zʷaɔam] “1. cold, 2. dampness, 3. absence of passion”, zââm “to cool, make cold, comfort”, cf. n’zââm “unsalted, insipid (lit. ‘with cold’)” [Sirlinger 1937: 169, 282] = zoom “to become cold” [Hoffmann] = zôm “coldness” [Kraft] = zoom “to be cold” [Hellwig 2000 MS: 42] (AS: Hoffmann 1975: 21, #111; Stolbova 1972: 182; 1977: 158, #256; Takács 2004: 426) III Sem.: Ar. (Lebanese dialect) zahme “froid intense” [DRS 693: isolated in Sem.]²¹ AS-Sem.: Takács 2001: 80-81; 2011: 156. This appears to be an original biradical root extended with a C₃ *Wurzelaugment/-determinativ*, cf. the following remote biradical root varieties (changing C₂):

341.1. NWometo *zak- “cold” [GT]: Basketo zak “cold” [Bender] = zāk “cold (of air)” [Fleming], Doko zakk- “cold” [CR] (NWometo: Bender 2003: 55, #26a).

341.2. SCu. *t̪çak/k̪ʷ- > *t̪çak/k̪ʷam- “cold” [GT] = *taḵʷa- “wind” [Ehret]: WRift *cāqwa (ts-) “cold wind, coldness” [KM 2004: 292]: Gorowa caqwa (ts-) “cold”, Burunge čaqomo (c-) “cold”, Alagwa caqwa (ts-) “wind”, caq-ut-is- “to become cool” | (?) Asa: no sure reflex²² | (?) Dahalo: no sure reflex,²³ but cf. Dahalo tókkōme [GT: irregular < *t̪óḵḵōm-?] “cold”²⁴ (SCu.: Ehret 1980: 173, #II.C.5).

341.3. All these forms above can by no means be traced back to one common AA root, so we have to assume a few rhyme-roots (based on the biliteral sequence of a sibilant C₁ and a back consonant as C₂) for “cold” like AA *√zh (AS-Ar.) vs. *√zk (Ometo) vs. *√t̪çk̪ʷ/k̪ʷ (SCu.).

• **342. AS *zuyum → *zūm** “small black ant specimen” [GT]: Angas tai-su zum “ant” (cf. AS *-zū “ant sp.”, q.v.) [Ormsby 1914: 207] = zum “the ordinary small black ants” (≈ Hausa činnáákà “type of biting ant”, Abr. 1962: 146) [Foulkes 1915: 312] = nzùm “kleine schwarze Ameise (Hausa čináákà?)”, nzùum “schwarze Ameise” [Jng. 1962a MS: 46], Sura

²¹ The Lebanese dialectal form with the laryngeal -h- was not recognized by J. Lentin (kind p.c., 14 April 2022), a leading member of the DRS project recently, who thinks of the special semantic shift from a different Arabic root with laryngeal -h- in this context: “L’arabe ‘standard’ *zahma* (je ne connais pas le libyen *zahme*) peut en effet signifier ‘grand froid’, mais plutôt quand les deux mots sont associés (*zahmat al-bard*, comme on dirait *šiddat al-bard* ‘la force, l’intensité du froid’). C’est-à-dire, littéralement, que le froid ‘presse’ les gens. Il ne faut donc pas chercher autre chose que le sens général de *ZHM*, racine attestée seulement en ar. et en aram., d’après DRS (715B-)/716A.” Still, in the DRS, nothing indicates whether such a root existed. Later, Prof. Lentin (kind p.c., 17 April 2022) added: “About *zahme* with laryngeal (-e is of course the dialectal form of *a-t*), it is apparently attested only in Lebanese ... Arabic and in a neighboring area in Syria. As stated in DRS 694, in Denizeau ‘froid intense et piquant’, taken from Frayha, 76. Also attested in Milelli 284 ‘froid perçant’. I looked after it on the internet, and found only two attestations, one in a poem, and one in an advertising for a restaurant. Both occurrences are Lebanese, and in both *zahme* appears in combination with *bard* ‘froid’: *zahmet (al-)bard*. It is also attested in coastal Syria : ‘Abd al-Rahīm 710 *zahme* = *nasamet al-bard al-lāḏī’a* ‘blast of biting cold’. My two favourite Lebanese informants do not know the word.” The eminent Russian arabist, A.G. Belova (Moscow, kind p.c., 17 April 2022) only saw “en arabe *zahmat*- ‘l’odeur de la viande pourrie, la puanteur’, aussi dans les dialectes. Voici tout ce que j’ai trouvé dans mes sources.”

²² Ehret l.c.: ~ Asa šoʔok “wind”. Cf. alternatively SCu. *çaʔ- “cold”?

²³ Ehret l.c.: ~ Dahalo gāṭà [Ehret: < *taḡ- < **taḵʷ-] “wind” arguing that Rift consonant order must be original since *k̪ʷ had to be in medial position in Dahalo to account for voicing shift. See chapter 10, section I in Ehret (1980) for further comments on this unusual kind of metathesis in Dahalo.

²⁴ Treated in Ehret (1980: 176, #II.C.24) as the reflex of SCu. *c/çaʔ- “cold” [GT] = *toḵ- (!) “cold” [Ehret], but it would be difficult to accept the correspondence of Dahalo -kk- vs. Rift-Ma’a *-ʔ-.

nzùgùm-láa “winzig kleine Ameisenart” (cf. làa “klein”) [Jng. 1963: 77], Mupun ndò-zùm (so, short -u-!) “small black ants” [Frj. 1991: 42], Kofyar ná-zùgum “ant” [Netting 1967: 29], Goemai nzûm [zûm < *zēm < *zûm] “a small black ant (its bite is painful)” [Sirlinger 1937: 169] (AS data: Takács 2004: 426-427) III Sem.: Ar. zukm-at- “ver du bois, termite” [BK I referred to apud DRS col. 730b, but not found there in fact].²⁵ The incredibly perfect Arabo-AS match can only fail if one definitely fails to locate the alleged Arabic lexeme as truly attested in the lexicographic sources.

342.1. Whether the same biliteral root (*sine* velar C₂ extension < AA *√zm “ant” [GT]???) hides in the first two radicals of NOM.: NWometo *zimand-o “ant” [GT]: Malo zimando [Alemayehu Abebe] = zimando [Siebert & Caudwell], Gofa zimando [Moreno] (NWometo data: also Bender 2003: 315, #2), is open to further research.

● **343. AS *zak(a)** “1. too, 2. again” [GT]: Angas zàkà “again”, zàka (Kabwir dialect) “not again” [Jng. 1962a MS: 45] = zaka (~ zaka-tak-na?) “not any more” [ALC 1978: 70] = (Pang, Garam, hill dialects) zak “again” [Gochal 1994: 35, 109], Sura zàk “1. auch, ebenfalls, wieder, 2. außerdem” [Jng. 1963: 89], Mupun zák (adv.) “also, too, again, another (occurs in clause final position)” [Frj. 1991: 69], Kofyar zák “again” [Netting 1967: 45], Goemai zak (adv.) “too, also” [Sirlinger 1937: 283] = zak (adv.) “also”, zak yit (adv.) “again” [Hellwig 2000 MS: 42] (AS: Takács 2004: 421) III Sem.: Ar. √zyk I: zāka “aller et venir plusieurs fois”, cf. zīk- “rangée de petites pierres autour d’une grande qui forme le chaton d’une bague” [BK I 1033; Dozy I 619; DRS 725: isolated in Sem. in this sense].

● **344. AS *-zak** (prefix *kə-) “roughly ground flour” [GT]: Angas ga-zák “1. roughly ground flour, 2. also, flour is mixed with water, and, after the water is drunk off, a residue of wet flour (*gǎžǎk*) remains, which is then eaten” (≈ Hausa tsekki, so! cf. tsàkíf “the coarse part of ground-flour”, Abr. 1962: 874) [Foulkes 1915: 185] = ġǎ-zák (Kabwir dialect) “roughly ground flour (Hausa tsekki)” [Jng. 1962 MS], Mushere kə-zaak (false length of -aa-) “dregs”, waar ni ku kə-zaak “the gruel has dregs” [Diyakal 1997 MS: 135] (AS: Takács 2004: 421) < Ch. *zVk- “to thresh, pound” (in Miya, Zime-Batna) [CLD III 125, #445] (to be distinguished from Ch. *zVg- “to rub” [CLD III 123, #435]?) III Sem.: Ar. √zhk I: zahaka “broyer entre deux pierres” [DRS 692 pace BK I 1022 and Belot 1913: 301 etc.].²⁶

²⁵ This form was unknown from earlier Arabic sources to Arabist Adrian Măcelaru (Rumanian embassy at Riyadh, kind p.c., 14 April 2022): “I never heard about the meaning given by DRS to the word *zukmat*-. Also it is not given in the online al-Maani Arabic Dictionary which is supposed to be exhaustive when it comes to Literary Arabic.” The puzzling source of this lexeme was not cleared by J. Lentin (kind p.c., 14 April 2022), a leading member of the DRS project recently, either: “ar. *zukm-at*- ‘ver du bois, termite’ (DRS 730b) n’est pas non plus dans Kazimirski ni dans LA cités par DC. C’est donc vraisemblablement une erreur.” He (kind p.c., 17 April 2022) confirmed again: “As for *zukm-at*- yes, I think it is a ghost word.” For the eminent Russian arabist, A.G. Belova (Moscow, kind p.c., 17 April 2022), “en arabe, la racine “*zkm*” n’est associée qu’aux significations “nez qui coule, rhume”, dans les autres correspondances sémitiques je ne sais pas.”

²⁶ Referring also to other sources (Qamus 848; LA III 58) which “considèrent qu’il s’agit d’une variante de SHK, laquelle, pour LA, serait préférable”, which may even be projected to an old AA stage: < CAA *√zk vs. *√sk “to grind by pounding”.

= zahk- (v.n.) “to crush between two stones” [Ehret]²⁷ < CAA *√zk “to grind by pounding” [GT]. For Ar.-Ch. see CLD III 125, #445. Apparently member of a larger root family:

344.1. An ancient AA root variety with a voiceless C₁ is represented by Ch. *sVk- “to thresh, press firmly” [CLD III 68, #176] || OEg. *s/zkj (???) > MEg. sk (Wb) = skj (GT) “mahlen” (Med., BD, NE, Mag., Wb IV 314, 14), hence skj (jj typical for the part. pf. pass. of the IIIae inf.) “Gemahlenes, Mehl” (Med., NK, Wb IV 314, 15-16) > Dem. sk “mahlen” (DG 466:6) > Coptic (SA) **CIKE**, (B) **CIKI**, (S) **COKE**⁺, **COOKE**⁺ “to grind, pound” (CD 328a; CED 149) = “mahlen, zerkleinern” (KHW 180)²⁸ || Sem.: Ar. sahk- (v.n.) “to grind”, saḡḡ- (v.n.) “to pound, grind” [Ehret],²⁹ extended by an infix root extension -h- < CAA *√sk “to grind by pounding” [GT].

● **345. Angas zak** (hill ≈ plain doo daa), in: nyi zak (≈ Hausa shi ke nan) “all right, it is so” [Foulkes 1915: 312] (isolated in AS: Takács 2004: 421) || SBrb.: Ahaggar ne-heḡḡi (i.e., -g^yg^y-) “se convenir réc. (avec), convenir (pour)” [Foucauld 1951-2 II: 527] = nā-heḡḡi [Prasse] (Brb.: Prasse 1969: 48, #74). This isogloss may eventually be akin perhaps³⁰ with that of PCh. *zVk- “to rest, stay in place” [CLD III 124, #442] || NBrb.: Qabyle e-zḡ (i.e., -g^y) “1. aller à, soir, 2. se placer, séjourner, fréquenter” [Dallet 1982: 934] < PAA *√zg “(con)venire” [GT].

● **346. AS *z^wak ~/< *zuk** → *zək “to push” [GT]: perhaps Angas (Kabwir dialect) žək [ž- < *z^w-?] “to shake f.i. a pole, tree” [Jng. 1962a MS: 45], Goemai zwak “to push with the hands” [Sirlinger 1937: 286], Mupun zək “to move a bit, toss (e.g. about a baby)” [Frj. 1991: 70] (AS: Takács 2004: 428) | Karekare nzùk^wa “to push” [Kraft] | Warji nzaḡ^w- “to poke” [Skinner apud Stolbova], Miya a zùkù-tisəy “to push” [Kraft] | Geji žèkkà “to push” [Kraft] | Ngizim žəḡ-žàžə̀rú “to repeatedly jostle or touch” [Schuh 1981: 82] (WCh.: Kraft 1981: #357; Stolbova 1987: 189, #399; 1995: 151) || CCh.: Lame zòknò’ò (dz-) “pousser qqn.” [Sachnine 1982: 414], Zime-Dari zòknò’ (dz-) “pousser avec force”, zòknò’ vūn “imiter” (litt.: “pousser + bouche”) [Cooper 1984: 6], cf. Lame žik (dz-) “pousser qqch. de lourd, traîner, déplacer” [Sachnine 1982: 407] || Eg. zhj “schlagen” (PT, Wb III 466-467) || Sem.: Ar. zaḡḡa I “1. pousser ou jeter qqn. ou qqch. d’un lieu plus élevé dans un précipice, 2. fairer marcher d’un bon train (se dit d’un chamelier qui mène ses chameaux), 3. cohabiter avec une femme, 4. lâcher (l’urine), 5. faire un saut, 6. marcher d’un pas vigoureux” [BK I 980] = “1. pousser, 2. jeter dans un précipice, 3. sauter, 4. lâcher un liquide (urine, etc.), 5. coha-

²⁷ Miscompared by Ch. Ehret (2000) in the same work, on the one hand (op.cit., p. 101, #1475), with Eg. zjn “to rub” etc. < AA *-zih- “to rub against”, and on, the one hand (op.cit., p. 473, #3190), with WCh.: Ngizim dāādúkòk “stone for sharpening” (assuming root ext. *z for intensive of manner, *k^w finitive), also dāayí “coarse pant of pounded flour” (extended with an alleged deverbative *y implying original application to ground flour) < AA *-zā/ah- “to grind two stones together”.

²⁸ Erroneously derived by Ch. Ehret (1995: 292, #553), ignoring the correct pharaonic etymon, from Eg. sk “to wipe” (!) < AA *-çū/ik- “to rub off”.

²⁹ Combined by Ch. Ehret (1995: 284, #532) with Eg. sh3.t (sic) etc. < AA *-ṣah- “to pound (loosen)”.

³⁰ The Qabyle-Ahaggar equation was refuted by K.-G. Prasse (l.c.) similarly to that with Ahaggar ə-heḡ “suivre rapidement”.

biter avec une femme” [DRS 718] = “to thrust, throw, drive, push, eject (semen, urine)” [Albright], cf. zahzaḥa “cohabiter avec une femme” [DRS] < AA *√3Q³¹ “to thrust” [GT].³² AS-Sem.: Takács 2001: 82; 2011: 157.

● **347. Suroid *zek** [GT]: Mushere zek-zek “describing a person who is tall but has no flesh on him: tiny person” [Diyakal 1997 MS: 347] (isolated in AS: Takács 2004: 422) || W/CCh. *√zk “small” [JS 1981] || Sem. *√zk(z)k: Ar. zakka “être affaibli (par la maladie, la vieillesse)”, zakk- “maigre, amaigri”, zukāzik- “petit, chétif”, cf. Oriental dialect zakk “trop juste, étroit (vêtement)” and zakzak “être trop serré, trop ajusté sur” [DRS 729: isolated in Sem.] < PAA *√3k “meager (???)” [GT].

One wonders whether this root has anything to do with PAA *√3k “youth (?)” [GT], cf. Sem.: Akk. (nA) zūku “infantry” [CAD z 153-154 pace Manitius, ZA 24, 122 and Ungnad, AfO 14, 329] = zūku “Infanterie” [AHW 1536a: origin obscure] = zūk- “infanterie” [DRS 724: “origine inconnue”] || (?) Aram.: not sure reflex³³ || WCh.: NBauchi *zakwat- “youth” [Skinner 1977: 49].³⁴

Part of a large family of homorganic roots³⁵ (whose distinct Cushitic reflexes were commonly treated in the literature as sprung from one common etymon):³⁶

● **347.1. SAA *√cg/γ** “1. small” [GT]: PCu. *ĉA(g)g^w- (sic: *ĉ-) “быть маленьким” [Dlg.] = *ṭig^w- “to be small, young” [Ehret] = *cig/k- (better than *ĉ-) “1. small, 2. young, 3. light” [GT] > NAgaw *cig^w- “to be small” [Apl. 1991: 23] = *cəg^w- “1. small, 2. young” [Ehret, Blazek, Apl. 2006] (NAgaw: Apl. 2006, 125; Cu.: Dlg. 1973: 119 > Boisson 1990 MS: 17) || Ch. *cVg- “small” [Stolbova in CLD] > WCh.: Hausa cìgíí (ts-) “1. a tiny excrescence on the ‘parson’s nose’ of a bird, 2. anything very small, a trace, 3. being small and short” [Bargery 1934, 1036] = cígíí ~ cìgíí (ts-) “short, small” [Abraham 1962: 883-884] || CCh.: Kotoko-Makary sugu “very small” [Allison 1999] (Ch.: CLD III 151, #593).

● **347.2. S²AA *√cng/γ** > var. *√cng/γ (epenthetic nasal) “2. young” [GT]: Eg. sd.tj [regular < *√sg]³⁷ “Kind, Zögling” (OK, Wb IV 377, 8-12) || SCu.: PRift *c/çig- (*ts/ts’-) “offspring, youth” [Ehret 1980] = *çigan- (-n- noun suffix) “young, offspring” [Ehret 1987]: Iraqw cigan [ts-] “young locusts” | Qwadza cenegayo “just-circumcized youths” (SCu.: Ehret 1980: 355;

³¹ Sem.: Ar. √zḡw I: zaḡā “pousser doucement”, Maghrebi Ar. zəḡḡ “pousser”, Hispanian Ar. zaḡḡ “donner un coup de poign” [DRS 682, 684] may represent an AA var. root with *-g.

³² For the Ar.-Eg. etymology cf. also Albright 1927: #71; Vergote 1945: 140, §15.a.14.

³³ Cf. Syr. zāḡā “poussin”, hence: zagzūḡā “petit enfant” (DRS: “semble formé par redoublement”), considered in DRS 684 as “emprunt persan” (referring to Persian zāq “petit d’amimal”, zāḡ and zīq “enfants”).

³⁴ The Chadic parallels listed by N. Skinner (q.v. in l.c.) are phonologically untenable.

³⁵ Whose diverse Cushitic and Berber reflexes were affiliated by V. Blažek (1992, 28, fn. 28) with several alleged remote extra-AA/Nostratic parallels like Basque txiki “little”, NCaucasian *čəḡə- “1. little, 2. young, 3. boy”.

³⁶ Like AA *CiK^w- “little” [Blazek] covering most of the diverse root varieties. See Cohen 1947: 146, #304; Fleming 1969: 22-23; Dlg. 1973: 119; Apl. 1989 MS: 6 and 2006: 125 (“although the formal fit is not without problems” between NAgaw and ECu.); Blažek 1992: 28, no. 28; Ehret 2000 MS: 125, #1587.

³⁷ Blažek’s (1991: 364) attempt at identifying Eg. sd.tj with ECu. *sVz-/šVz- “-in-law” is incorrect. Beside the semantic problems, Eg. ḏ and ECu. *z can by no means be traced back to one common source in a cognate set. Similarly, Ch. Ehret (2000 MS: 125, #1587) miscompared Eg. sd.tj.w “weaklings (?)” with SOM.: Ari çedī “short” and CCh. *√sḏk “small” < AA *-t/šēz- “to become small”.

PRift-NAgaw: Ehret 1987: #122) || CCh.: Higi sēgʷíí ~ sūgi “Kind” [Strümpell] | Gisiga seng and Balda(mu) sing “Kind” [Strümpell] (CCh.: Strümpell 1922-3: 119).

● **347.3.** The C₃ *-r extension of the same root may be present in both Semitic and Hausa, cf. Sem. *√šyr “быть маленьким” [Dlg.]: Akk. šeḫēru “klein, jung, wenig sein, werden” [AHW 1087] || Ug. šy/ḡr “klein, jung” vs. sy/ḡr “klein” [WUS 221, #1940 vs. 269, #2340] | Ar. ṣayara “être moins âgé, le cadet de qqn. de tant”, ṣayī/ura “1. être petit, 2. être en petite quantité, 3. être d’un bas prix, 4. être de qualité inférieure, ordinaire, vile, 5. être méprisé, regardé comme peu de chose”, ṣayīr- “petit, chétif” [BK I 1341-2] || WCh.: Hausa cìḡíḡíí (ts-) ~ Katsina dialect cagargari (m) “(a) naturally short, thin (person)” [Bargery 1934: 1036] = cìḡíḡíí (ts-) (m) “short, thin (person)” [Abraham 1962: 884] < PAA *√čyr (better than *√cgr which only occurs sporadically in Sem.) [GT]. Sem.-Cu.: Cohen 1947: 146, #304; Dlg. 1973: 119.

● **347.4.** PAA *√šk (hardly *č- lest for Brb.) “small” [GT]: (???) PBrb. *mazz/zžuk (with secondary *-zz- > -zž/sʸ/šš-) “(to be) small”, *mazz/zžik (stative?) “is small”³⁸ < (???) participial m- + PBrb. **√zck (regular < AA *√šk) [GT] > EBrb.: Audjila meššek “être petit” [Paradisi 1960, 171], Sokna √mzy > mazzī, fem. mazzok-iy-ət, pl. mēzzuk-ət “petit” [Laoust] || NBrb.: Nefusa meššék “piccolo” [Beguinot 1931: 239; 1942: 305] = məšək, fem. məšuk-ət “petit” [Laoust] = mešek, fem. mešek-et “small” [Blazek < Laoust] | Petite Kabylie a-meččuk “petit garçon” [Genevois 1955: 72], Zwara a-meškun “petit” [Serra 1970: 45] | Mzab √mzy > əmzi / i-məzzi “être petit, jeune”, (i)-məzzi “1. petitesse, 2. jeunesse, 3. enfance” [Delheure 1984: 126] | Ait Mgild a-mzzi-an, pl. i-mzzi-ann “small” [Harries 1974: 225] | Shilh mzzi “être petit” [Justinard 1914: 143] = mzi “to be small, grow smaller” [Applegate 1958: 61], Sus mezzuk-et “small” [Blazek < ?] || WBrb. *√mzg [*-g regular < *-k#]: Zenaga √mzg > mazzig “petit” [Basset 1883] = √mzg > maizzug “être petit” [Basset 1890] = məđđug, məzzug, māšk “petit”, mazzig, mazzuḡ “il est petit” [Nicolas 1953: 220] (Brb.: Basset 1883: 299; 1885: 187; 1887: 423; 1890: 315; Laoust 1931: 275; Kossmann 1999: 224,

³⁸ There has been no agreement in Berber studies on the precise nature of the C₂ and C₃ of the ultimate Berber proto-form and its underlying root. Ad hoc suggestions (offered without any further reasoning) like Basset’s √mzg, Laoust’s √mzy, Delheure’s √mzy are only restricted to some daughter language and do not account for all the common Berber reflexes, from which Kossmann (1999: 224-225), singling out just the cases with -šš- among many similar other Berber roots, only put forward his hypothesis “d’une règle proto-berbère *sy > *šš” immediately carefully adding that: “Remarquons d’une part, qu’il n’existe pas de mots que l’on peut reconstruire en proto-berbère qui ont le groupe consonantique *sy. De l’autre part, l’évidence pour une assimilation *sy > *šš est extrêmement maigre. Une règle de même type peut être posée de façon plus certaine pour *zy > *žž. Si l’on accepte le règle *sy > *šš, on peut analyser la variation MA *timišša* «silex», Rif *timiksa* < **timiysa* «silex» comme le résultat d’une métathèse: **timiysa* > *timišša*, **timiysa* > *timi(y)sa*”. We learn here, however, nothing about the variation of *-šš- vs. *-zz- vs. *-zž- in this Berber root, which reminds us, on the one hand, of the possible interchange of *-šš- vs. /< *-zz- in Twareg (Militarev 1991: 244, table 3), while, on the other hand, Brb. *-z- vs. *-z- are regular from PAA *-c- vs. *-č-, resp. (Militarev 1991: 242), i.e., precisely those two phonemes that are apparently yielding the diverse root varieties in the other AA cognates also. Even today, M. Kossmann (p.c. on 31 July 2022), the leading authority of Berber comparative phonology, cannot resolve the puzzles of this Berber root fully: on the one hand, he safely excluded the final *-g as primary in this Berber root as it only appears in Zenaga where /g/ in final position can be a lenition of *-k#. Elsewhere, there is apparently no indication for *-g. On the other hand: “The variation is between *K* and *Y*. ... The *Y* also appears in varieties that do not have *g > y. The *k/y* correspondence is not unique to this word (see my 1999 book), but not really explained either. I don’t see a way to join *mečček* type of words to *MZY/K*, so I don’t believe they belong to the same root. My guess would be that they developed from a root **MT^yY/K*, i.e. **met^yey* or **met^yek* (like my explanation for *čč* in the verb ‘to eat’).”

#682) ||| ECu. *ci/ak- “light (weight)” [Ehret 2000 MS: 125, #1587] vs. LECu.: Konso šāka “small” [Fleming] = šəka “few, little” [Blazek] ||| NOm.: Dizoid *šik/g- “short” [Bender 2003: 255 and 306, #A83], cf. also Sheko šiku-šiku- ~ šaku-šaku- “thin” [Bender 2003: 218, #134] ||| Ch. *šVkv “small, light (in weight)” [Stolbova in CLD] > WCh.: Bole sòkùwum “light (in weight)” [Gimba et al.], also Bole sikit- “herabsetzen (Preis)” [Lukas 1971: 138], Ngamo sikt- “to reduce, decrease” [Ibrizimow] || CCh.: Bura êik-êika (thl-) [Stolbova: šikčika, dissim. < *šikšika] “small, undernourished, not comely (of a goat)”, cf. êik-fuka (thl-) “a poor specimen of a goat” [BED 1953: 201] || ECh.: Sokoro éške “small” [Lukas 1937: 33] (Ch.: CLD II 82, #181).

● **347.5. PAA** *√çk “small” [GT] > Sem. *√çyḳ “to be narrow” [Ehret 2000 MS: 125, #1587]: Ar. √dyq I: ḏāqa “être, devenir étroit, se rétrécir” [BK II 49] ||| NAgaw *çəḳw- “small” [GT]: Hamir çiku “small” [Fleming pace Reinisch] = çikw- “small” [Blazek pace Reinisch] = šiqū- “small, young” [Apl. pace Reinisch], Kaĩlina şəgʷaḳ (sic) “small, young” [Apl.] (NAgaw: Apl. 2006: 125)³⁹ || ECu. *tiḳḳ-o and *diḳḳ-o “small” [Fleming] = *diḳḳ-/ *duḳḳ-/ *diḳḳ- “small” [Apl.] > HECu. *tuḳḳ- (?) “to be narrow”, *tuḳḳ-a (?) “narrow” [Hudson 1989: 423] = *ti/ukḳ- [Ehret] || SCu.: Burunge çoko [Fleming] = “little” [Blazek] ||| NOm.: Male çik-o “small” [Lewis apud Fleming] = ḏaka “small” [Donham apud Fleming] || SOM.: Dime çəḳḳ-ənd (f) “small” [Fleming] (Cu.-Om.: Fleming 1976: 320).

● **348. PGoemai** *-zek “plenty, abundant (???)” [GT]: Goemai pə-zek (ideoph.) “can be used with reference to worms, maggots, grains in a bowl (when you stir/shake them), fish on the market”, e.g. laŋ pə-zek ɓak “plenty of them are here” (cf. laŋ “to hang, move etc.”) [Hellwig 2000 MS: 27] (Takacs 2004: 423: isolated in AS) ||| Sem.: Ar. √zkw/y I: zakā and zakiya “croître, grandir, prospérer, être pur, probe”, Maghrebi Ar. zkā “gonfler en cuisant (couscous)” [DRS 729, ZKW/Y1: isolated in Sem.] vs. Eth.-Sem. *√zg “être large” [GT]: Amh. aḏägäḏḏägä “être très large (maison)” [DRS 684, ZGZG4: isolated in Sem.] and Harari zāgaḥa “être large” [DRS 684, zḡh4: isolated in Sem.].

● **349. AS** *-zək ~ *-sək (with prefix *tə-) “bat” [GT]: Angas tó-zək (Kabwir dialect) “bad living in house” (so!) [Jng. 1962 MS: 40], Sura tó-sək “Fledermaus” [Jng. 1963: 85], Mupun tó-zək “bat” [Frj. 1991: 63] (AS: Takacs 2004: 423) || CCh.: Uldeme zəḡwáy (j- [dz-]) “chauve-souris” [Colombel 1997: 171] || ECh.: Lele žīgā-žīgā “chauve-souris: megaderme à ailes orangées” [WP 1982: 40] = žīgá-žīgá [Stolbova] | Mubi-Toram *zawḳ- “bat” [GT]: Birgit zàwyó (m), pl. zàwyà “chauve-souris” [Jng. 2004: 360], Kofa sàwk (f), pl. sáwkàn “bat (chauve-souris)” [Jng. 1977 MS: 14, #334] < Ch. *žVg- “1. mouse, 2. bat” [CLD III 233-234, #1078] = *zəkḳw-, var. *žik- “bat” [GT].

● **350. AS** *zok “1. generosity, 2. gift” [GT]:⁴⁰ Montol zok “gift” [Ftp. 1911: 217], Goemai šin-zok “gift” (lit. “thing of generosity”, cf. šin- “thing”) [Ftp. 1911: 217] = zək [zək]

³⁹ D. Appleyard (l.c.) attributed also these parallels to NAgaw *çəḳw-, although he too admitted that it “with unexpected medial *q*”.

⁴⁰ Cognate with AS *zuḡum “generous, gift”?

“kindness, generosity” [Sirlinger 1937: 283] = zok “to be generous” [Hellwig 2000 MS: 42] (AS: Takacs 2004: 426) || Sem.: Ar. $\sqrt{\text{shw/y}}$ I: saḥā “1. être généreux, 2. donner largement, être généreux dans les dons que l’on fait” [BK I 1067-8]. Vacillation of AA *z- (AS) vs. *c- (Ar.)?

● **351. AS *zük** “hole” [GT]: Angas zük “rat hole whose opening has been is filled up by the rat with earth” [Foulkes 1915: 312] = zük (Kabwir dialect) “rat hole filled up by rat with earth” [Jng. 1962 MS: 45], Mupun zük wūs ~ zük (alone) “open hearth (where men only are allowed to sit)” (act. “hole of fire”? cf. wūs “fire”) [Frj. 1991: 70] (AS: Takacs 2004: 427) || CCh.: Munjuk-Puss zugūḍi (zugūḍa) “creuser (à la pioche)” [Tourneux 1991: 129] || perhaps SBrb. *-zak (?) [GT]: Ahaggar tā-hak [h < *z?] “cavité d’un tube” [Prasse 1969: 50, #198: not attested elsewhere in SBrb.] || Eg. zk “graben (einen Teich)” (PT, Wb III 487, 10). AS-Sem.: Takacs 2001: 81; 2011: 156. Eventually, it derives from PAA $\sqrt{\text{zk}}$ “to dig a hole” [GT].⁴¹

● **352. AS *zük** “heap of rubbish” [GT]: Angas zük “rubbish-heap” [ALC 1978: 70], Sura zük “heap” [Blench apud CLD], Kofyar zük “composted manure” [Netting 1967: 46] (AS: Takacs 2004: 427) || Sem. $\sqrt{\text{zk}}$: Ar. zaqqa “rendre les excréments (se dit d’un oiseau)”, zaqzaqa “rendre les excréments (se dit des oiseaux)” [BK I 998-999], Ar. (dialect of Sudan) zag “déféquer” [DRS] || Eth.-Sem.: Amh. azzaqa “faire amasser et emporter les immondices” [DRS] (Sem.: DRS 785-786). AS-Sem.: Takacs 2001: 81; 2011: 156.

● **352.1.** If, however, the AS primary sense was “heap”, cf. better WCh.: Miya žəkə “much, many” [Skinner apud CLD] || Sem.: Ar. zuqy-at- “tas de pièces de monnaie” [DRS 783, ZQY1: isolated in Sem.]. Miya-AS due to O.V. Stolbova (CLD III 125, #450 with further dubious parallels).

● **353. AS *zük ~ *sük** (with prefix *gu-/*ku-/*kə-) ≈ Hausa áččà “the cereal grass *Digitaria exilis*” [Abr. 1962: 5], i.e., “acha” [GT]: Angas gú-zük “a grain food” (≈ Hausa iboru (sic!), cf. Hausa ibùrò “cereal like áččà” [Abr. 1962: 394]) [Foulkes 1915: 191] = gu-zük “Hirseart: *Acha Digitaria exilis*”, gú-zúk “Getreidefrucht (Hausa ibùrò)”, ġu-zük (Kabwir dialect) “corn (Hausa ača)” [Jng. 1962a MS], Sura kú-súk “*Digitaria exilis* (Hausa áččà), ein Getreidegras, das Anfang Oktober geerntet wird” [Jng. 1963: 71], Mupun kù-súk ~ súk “hungry rice (*Digitaria exilis*)” [Frj. 1991: 29], Musheru ku-zük “1. acha, 2. another type of snake that stays inside the *acha*”, ngu heeh kuzuk “person harvesting acha” [Diyakal 1997 MS: 115], Goemai goe-zug (so, -g) “Hausa *acha*” [Sirlinger 1937: 67] = gə-zük “acha” [Hellwig 2000 MS: 11] (AS: Takacs 2004: 427) || SBrb.: Ayr a-zgäg, pl. i-zgäg-än “esp. de graminée (*Cyperus conglomeratus*)” [PAM 2003: 878] || Eg. sh.t (PT: written sš.t, since OK often sh.t) “eine Körnerfrucht, als Inhalt der Scheune, als Medikament, als Opferspeise, besonders mit den Zusätzen ‘weiss’ und ‘grün’: in der Opferliste und in offizineller Verwen-

⁴¹ Remotely (on biconsonantal grounds) related to Sem. $\sqrt{\text{czk}}$ “to dig” [GT]: OHbr. $\sqrt{\text{czq}}$ piel “umgraben”, NHbr. $\sqrt{\text{czq}}$ “aufhacken” | Ar. $\sqrt{\text{cazaqa}}$ “mit einer Hacke umgraben”, Geez $\sqrt{\text{cazaqa}}$ “to dig, make a hole” (Sem.: GB 578; Leslau 1987: 81). From an AA root variety $\sqrt{\text{zk}}$ (?) [GT].

dung, auch durch Stampfen zu Speise verarbeitet” (PT-XXVI., Wb IV 267, 9-12). Vacillation of AA *ʒ- (AS) vs. *c- (Eg.)?

● **354. PAngas *zuk** “please” [GT]: Angas zuk-zuk “please” vs. gu-zuk “please” [ALC 1978: 20, 70] (isolated in AS: Takacs 2004: 427) || SBrb.: Ahaggar ti-na-həy-în (pl. tante) [Prasse: < *√h₁h₂γ, GT: regular < *√z(h₂γ) “grâce, amnistie (levée d’une peine)” [Prasse 1969: 62, #335]⁴² || Sem.: perhaps OHbr. √z^oq “appeler à l’aide” [DRS 772 with a different etymology].

● **355. Suroid *-zuk** [GT]: Sura tu-zúk (prefix tu-) “Masern” [Jng. 1963: 86] (isolated in AS: Takacs 2004: 427) || Sem. biradical *√zg “to be long” [GT]: Aram. of Talmud zəgā? “s’établir, s’allonger”, Mandaic zga “être étendu, se coucher” | Ar. zağğa “être fin, allongé (sourcil)”, Egyptian Ar. zaggiğ “se faire les sourcils (au crayon)” || Eth.-Sem.: Tigrinya zäg bälä, Amharic zägg alä “1. tomber lourdement, 2. s’étendre de tout son long”, zägäzzägä “durer longtemps”, Harari zäg bayä, Gurage zugä barä “être étendu” etc. (Sem.: DRS 682, zg^o/g/y1 vs. 683, ZGG4 vs. 684, ZGZG3).

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Abbreviations of languages and other terms

(A): Ahmimic, AA: Afro-Asiatic (Afrasian, Hamito-Semitic), Akk.: Akkadian, Amh.: Amhara, Ar.: Arabic, Aram.: Aramaic, AS: Angas-Sura, Ass.: Assyrian, (B) Bohairic, Bab.: Babylonian, BAram.: Biblical Aramaic, Bch.: Bauchi, Bed.: Bed’awye (Beja), BM: Bura-Margi, BN: Bade-Ngizim, Brb.: Berber (Libyo-Guanche), BT: Bole-Tangale, CCh.: Central, Ch.: Chadic, Cpt.: Coptic, CT: Coffin Texts, Cu.: Cushitic, DB: Daffo-Butura, Dem.: Demotic, E: East, Ebl.: Eblaite, Eg.: Egyptian, ES: Ethio-Semitic, ESA: Epigraphic South Arabian, Eth.: Ethiopian, Eth.-Sem.: Ethio-Semitic, (F): Fayyumic, Gmy.: Goemai, GR: Ptolemaic and Roman period, H: Highland (in Cushitic), Hbr.: Hebrew, Hgr.: Ahaggar, Hrs.: Harsusi (in MSA), Hs.: Hausa, IE: Indo-European, irreg.: irregular, JAram.: Jewish or Judeo-Aramaic, Jbl.: Jibbali, Kfy.: Kofyar, KK: Kera-Kwang group, L: Late, L: Low-land, lit.: literature, LP: Late Period, M: Middle, Mag.: magical texts, Math.: mathematical papyri, Med.: medical texts, MG: Mofu-Gudur, MK: Middle Kingdom, MM: Mafa-Mada group, Mnt.: Montol, Mpn.: Mupun, MSA: Modern South Arabian, Msr.: Musheru, N: New, N: North, NE (or NEg.): New Egyptian, NK: New Kingdom, NS: Nilo-Saharan, O: Old, OK: Old Kingdom, Om.: Omotic, OSA: Old South Arabian, OT: Old Testament, P: Proto-, PB: Post-Biblical, PT: Pyramid Texts, reg.: regular, S: South, (S): Sahidic, Sab.: Sabaeen, Sem.: Semitic, Sgt.: Soqotri, Syr.: Syriac, TA(ram): Aramaic of Talmud, Ug.: Ugaritic, W: West, (E)Wlmd.: (East) Tawllmmedt, Y: Young(er).

Abbreviations of author names

Abr.: Abraham, AJ: Alio & Jungrauthmayr, Alj.: Alojaly, Alm.: Alemayehu, AMS: Amborn, Minker, Sasse, Apl.: Appleyard, Bgn.: Beguinot, BK: Bieberstein Kazimirsky, Blc.: Blachère, Blv.: Belova, Blz.: Blažek, Bnd.: Bender, Brg.: Bargery, Brk.: Brockelmann, Brq.: Burquest, Brt.: Barreteau, Clc.: von Calice, Cpr.: Caprile,

⁴² Affiliated by K.-G. Prasse (l.c.) with Ahaggar a-həy “piller, razzier, recueillir (du liquide, vase etc.)”, but he failed to argue for the supposedly underlying semantical shift.

CR: Conti Rossini, CrI.: Cerulli, Csp.: Cosper, Ctc.: Cañucoli, CTC: C. Taïne-Cheikh, Dbr.: Djibrine, Djk.: D'jakonov, Dkl.: Diyakal, Dlg.: Dolgopof'skij, Dlh.: Delheure, Dlt.: Dallet, DM: Djibrine & Montgolfier, EEN: Ehret & Elderkin & Nurse, Egc.: Eguchi, Ehr.: Ehret, Eld.: Elderkin, Fed.: Foucauld, Fdr.: Fédry, FH: Farah & Heck, Flk.: Foulkes, Flm: Fleming, Frj.: Frajzyngier, Frz.: Fronzaroli, Ftp.: Fitzpatrick, GB: Gesenius & Buhl, Gcl.: Gochal, Grb.: Greenberg, Grd.: Gardiner, GT: Takács, Hds.: Hudson, Hfm.: Hoffmann, Hlw.: Hellwig, Hsk.: Hoskison, Hyw.: Hayward, Ibr.: Ibriszimow, IL: Institute of Linguistics, IS: Illič-Svityč, JA: Jungraithmayr & Adams, JI: Jungraithmayr & Ibriszimow, Jng.: Jungraithmayr, Jns.: Johnstone, JS: Jungraithmayr & Shimizu, KB: Koehler & Baumgartner, KM: Kießling & Mous, Krf.: Kraft, Lks.: Lukas, Lmb.: Lamberti, Lnf.: Lanfry, LS: Lamberti & Sottile, Lsl.: Leslau, Lst.: Laoust, Mch.: Mouchet, Mgd.: Migeod, Mkr.: Mukarovsky, Mrn.: Moreno, Mts.: Matsushita, Ncl.: Nicolas, Nct.: Nachtigal, Nhl.: Nehlil, NM: Newman & Ma, Ntg.: Netting, Nwm.: Newman, OS: Orel & Stolbova, PAM: Prasse & Alojaly & Mohamed, PH: Parker & Hayward, Prh.: Porhomovskij, Prs.: Prasse, RB: Rapp & Benzig, Rn.: Reinisch, Rpr.: Roper, Rsg.: Rossing, Rsl.: Rössler, Sbr.: Siebert, Scn.: Sachnine, Skn.: N. Skinner, Smz.: Shimizu, Snd.: Schneider, Spg.: Spiegelberg, Srl.: Sirlinger, Stl.: Stolbova, Str.: Strümpell, Sts.: Starostin, Tf.: Taïfi, TG: Takács, Trn.: Tourneux, Vcl.: Vycichl, Vrg.: Vergote, Zbr.: Zaborski, Zhl.: Zyhlarz.

References

- Abraham, R.C. 1962. *Dictionary of the Hausa language*.² London: University of London Press.
- AfO = *Archiv für Orientforschung* (Wien).
- AHW = Soden, W. von. 1965-1981. *Akkadisches Handwörterbuch*. Bde. I-III. Wiesbaden: Otto Harrassowitz.
- Ajello, R. & Karyo, M. & Melis, A. & Dobio, Ou. 2001. *Lexique comparatif de six langues tchadique central (Gizey, Ham, Lew, Marba, Masa, Musey)*. Pisa: Edizioni Plus, Università di Pisa.
- AL I-III = Meeks, D. 1977-1979. *Année lexicographique: Égypte ancienne*. Tomes 1-3. 2ème édition, 1998. Paris: Cybele.
- Albright, W.F. 1927. Notes on Egypto-Semitic etymology. III. *Journal of the American Oriental Society* 47. 198-237.
- ALC 1978 = Angas Language Committee (in Cooperation with Nigeria Bible Translation Trust). 1978. *Shàk nkarj kè shàktok mwa ndàn Ngas. Ngas-Hausa-English dictionary with Appendix showing some features of Ngas grammar*. Jos, Nigeria: Nigeria Bible Translation Trust.
- Alio, Kh. 2004. Préliminaires à une étude de la langue kajakse d'Am-Dam, de Toram du Salamaat, d'ubi du Guéra et de masmaje du Batha-est. In Takács, G. (ed.), *Egyptian and Semito-Hamitic (Afro-Asiatic) studies in memoriam Werner Vycichl*, 229-285. Leiden: E. J. Brill.
- Allison, S. 1999. *Makary Kotoko provisional lexicon*. SIL (MS, <https://www.sil.org/resources/archives/47599>).
- Applegate, J.R. 1958. *An outline of the structure of Shilha*. New York: American Council of Learned Societies.
- Appleyard, D. 1989. *Agaw vocabulary comparative notes*. MS. London. 24 p.
- Appleyard, D. 1991. The vowel systems of Agaw: Reconstruction and historical inferences. In *Proceedings of the Fifth International Hamito-Semitic Congress*, vol. II, 13-28. Wien: Afro-Pub.
- Appleyard, D. 2006. *A comparative dictionary of the Agaw languages*. Köln: Rüdiger Köppe Verlag.
- ÄWb I = Hannig, R. 2003. *Ägyptisches Wörterbuch I. Altes Reich und Erste Zwischenzeit* (Hannig-Lexica 4). Mainz am Rhein: Verlag Philipp von Zabern.
- ÄWb II = Hannig, R. 2006. *Ägyptisches Wörterbuch II. Mittleres Reich und Zweite Zwischenzeit*. Bde. I-II (Hannig-Lexica 5). Mainz am Rhein: Verlag Philipp von Zabern.
- Baeteman, J. 1929. *Dictionnaire amarigna-français suivi d'un vocabulaire français-amarigna*. Dire-Daoua: (publisher unknown to the author).
- Bargery, G.P. 1934. *A Hausa-English dictionary and English-Hausa vocabulary compiled for the Government of Nigeria*. London: Oxford University Press, Humphrey Milford.
- Barreteau, D. 1988. *Description du mofu-gudur: Langue de la famille tchadique parlée au Cameroun*. Livre II. *Lexique*. Paris: Éditions de l'ORSTOM.
- Barreteau, D. & Bléis, Y. 1990. *Lexique mafa: Langue de la famille tchadique parlée au Cameroun*. Paris: ORSTOM, Librairie Orientaliste Paul Geuthner.
- Basset, R. 1883. Notes de lexicographie berbère. *Journal Asiatique*. Ser. VIII, vol. 1/3, 281-342.
- Basset, R. 1885. Notes de lexicographie berbère. *Journal Asiatique*. Ser. VIII, vol. 5, 148-198.

- Basset, R. 1887. Notes de lexicographie berbère. *Journal Asiatique*. Ser. VIII, vol. 10, 365-464.
- Basset, R. 1890. *Loqmân berbère avec quatre glossaires et une étude sur la légende de Loqmân*. Paris: Ernest Leroux.
- Beaussier, M. 1958. *Dictionnaire pratique arabe-français*. 2ème éd. revue, corrigée et augmentée par Mohamed Ben Cheneb. Alger: La maison des livres.
- Beaussier, M. & Ben Cheneb, M. 1931. *Dictionnaire pratique arabe – français – contenant tous les mots employés das l’arabe parlé en Algérie et en Tunisie ainsi que das le style épistolaire, les pièces usuelles et les actes judiciaires*. Nouvelle édition, revue, corrigée et augmentée par M. Mohamed Ben Cheneb. Alger: Ancienne Maison Baside, Jourdan, Jules Carbonel.
- Beguinoth, F. 1931. *Il berbero Nefûsi di Fassâto*¹. Roma: Istituto per l’Oriente.
- Beguinoth, F. 1942. *Il berbero Nefûsi di Fassâto*². Roma: Istituto per l’Oriente.
- Belot, J.B. 1913. *Dictionnaire français-arabe*. Beyrouth: Imprimerie catholique.
- Belot, J.B. 1929. *Vocabulaire arabe-français à l’usage des étudiants*. 14ème éd. Beyrouth: Imprimerie catholique.
- Bender, M.L. 2003. *Omoti lexicon and phonology*. Carbondale: SIU Printing / Duplicating, Southern Illinois University.
- Biberstein Kazimirski, A. de. 1860. *Dictionnaire arabe-français*. Tomes I-II. Paris: Maisonneuve et Cie.
- Blažek, V. 1991. Kartvelian material in Nostratic lexicon. *Archív Orientální* 59. 360-369.
- Blažek, V. 1992. Basque and North Caucasian or Afroasiatic? In Ebermann, E. & Sommerauer, E. R. & Thomaneck, K.É. (eds.), *Komparative Afrikanistik: Sprach-, geschichts- und literaturwissenschaftliche Aufsätze zu Ehren von Hans G. Mukarovsky anlässlich seines 70. Geburtstags*, 21-30. Wien: Afro-Pub.
- Boisson, C. 1990. Additions to “Sumerian/Nostratic/Sino-Caucasian isoglosses (Version 3.16)”. Version 0.4. MS. Lyon. 31 p.
- CAD = *The Assyrian dictionary of the Oriental Institute of the University of Chicago*. Since 1956. Vols. 1-21. Glückstadt & Chicago: J.J. Augustin, The Oriental Institute of the University of Chicago.
- Caïtucoli, C. 1983. *Lexique masa*. Paris: Agence de Coopération Culturelle et Technique.
- CD = Crum, W.E. 1939. *A Coptic dictionary*. Oxford: Oxford University Press.
- CED = Černý, J. 1976. *Coptic etymological dictionary*. London, Cambridge: Cambridge University Press.
- Cherbonneau, A. 1876. *Dictionnaire arabe-français (langue écrite)*. Vol. I. Paris: Imprimerie Nationale.
- CLD I = Stolbova, O.V. 2005. *Chadic lexical database*. Issue I. L, N, NY, R. Kaluga: Poligrafiya.
- CLD II = Stolbova, O.V. 2007. *Chadic lexical database*. Issue II. Lateral fricatives ɬ, ʃ, ɣ with Semitic, Egyptian and South Cushitic parallels. Moscow-Kaluga: Polygraphiya (sic: -ph-).
- CLD III = Stolbova, O.V. 2009. *Chadic lexical database*. Issue III. Sibilants and sibilant affricates s, z, c, ç, ħ, ž. Moscow: Institut Vostokovedenija.
- Cohen, M. 1947. *Essai comparatif sur le vocabulaire et la phonétique du chamito-sémitique*. Paris: Librairie Ancienne Honore Champion.
- Colin, G.S. 1993. *Le Dictionnaire Colin d’Arabe dialectal marocain*. Tomes 1-8. Réalisé sous la direction de Zakia Iraqui. Rabat: Institut d’Etudes et Recherches pour l’arabisation de Rabat. En collaboration avec le C.N.R.S de Paris et le Ministère des Affaires Culturelles du Maroc.
- Colombel, V. de. 1997. *La langue ouldémé (Nord-Cameroun): Précis de grammaire, texte, lexique*. Paris: Association de Linguistique Africaine.
- Cooper, K.N. 1984. *Lexique zime-français: Vîn târî*. Sarh (Tchad): Centre d’Études Linguistiques.
- CT = Buck, A. de. 1935-1961. *The Egyptian Coffin Texts*. Vols. I-VII. Chicago: The University of Chicago Press.
- Dallet, J.-M. 1982. *Dictionnaire qabyle-français: Parler des At Mangellat (Algérie)*. Paris: SELAF (Société d’études linguistiques et anthropologiques de France).
- Dalman, G.H. 1922. *Aramäisch-neuhebräisches Handwörterbuch zu Targum, Talmud und Midrasch*. Frankfurt a/M: J. Kaufmann Verlag.
- DCT = Molen, R. van der. 2000. *A hieroglyphic dictionary of Egyptian Coffin Texts*. Leiden: E.J. Brill.
- Delheure, J. 1984. *Dictionnaire mozabite-français*. Paris: Société d’Études Linguistiques et Anthropologique de France (SELAF).
- Delheure, J. 1987. *Dictionnaire ouargli-français*. Paris: Société d’Études Linguistiques et Anthropologique de France (SELAF).
- DG = Erichsen, W. 1954. *Demotisches Glossar*. Kopenhagen: Ejnar Munksgaard.
- Diyakal, Ph. 1997. *Mushere-English dictionary*. Collection of words carried out by Mr. Ph.I. Diyakal started on September 10th, 1997 under the supervision of Herrmann Jungraithmayr (Univ. of Frankfurt). MS. 390 p.

- DLE = Lesko, L.H. 1982, 1984, 1987, 1989. *A dictionary of Late Egyptian*. Vols. I-IV. Berkeley: B.C. Scribe Publications.
- Dolgopol'skij, A.B. 1973. *Sravnitel'no-istoričeskaja fonetika kušitskih jazykov*. Moskva: Nauka.
- Dolgopolsky, A. 1982. Chadic-Semitic-Cushitic: Epenthetic *-γ-* in Sura in the light of Hamito-Semitic comparative linguistics. In Jungraithmayr, H. (ed.), *The Chad languages in the Hamitosemitic-Nigritic border area: Papers of the Marburg Symposium (1979, Berlin)*, 32-46. Berlin: Dietrich Reimer Verlag.
- Dozy, R. 1881. *Suppléments aux dictionnaires arabes*. Tomes I-II. Leiden – Paris: E. J. Brill – Maisonneuve.
- DRB = Naït-Zerrad, K. Since 1998. *Dictionnaire des racines berbères (formes attestées)*. Paris & Louvain: Peeters. [Continuous pagination in the subsequent fascicles.]
- DRS = Cohen, D. Since 1970. *Dictionnaire des racines sémitiques ou attestées dans les langues sémitiques*. Paris & La Haye: Mouton. Fascicule 3-: Leuven (1993-): Peeters. [With continuous pagination.]
- Ducroz, J.M. & Charles, M.C. 1978. *Lexique soney (songhay) – français, parler kaado du Gorouol*. Paris: L'Harmattan.
- EAANI = Takács, G. 2016. *Etyma Afroasiatica nova: Roots with initial labials (*b-, *p-, *f-, *m-)*. Berlin: Dietrich Reimer Verlag.
- EDE I = Takács, G. 1999. *Etymological dictionary of Egyptian*. Vol. One: *A phonological introduction*. Leiden: E.J. Brill.
- Ehret, Ch. 1980. *The historical reconstruction of Southern Cushitic phonology and vocabulary*. Berlin: Dietrich Reimer Verlag.
- Ehret, Ch. 1987. Proto-Cushitic reconstruction. *Sprache und Geschichte in Afrika* 8. 7-180.
- Ehret, Ch. 1995. *Reconstructing Proto-Afroasiatic (Proto-Afrasian): Vowels, tone, consonants, and vocabulary*. Berkeley, Los Angeles, California: University of California.
- Ehret, Ch. 1997. (Additions to the Afroasiatic reconstructions.) MS. Los Angeles, California, 522 p.
- Ehret, Ch. 2000. (Additions to the Afroasiatic reconstructions.) MS. Los Angeles, California, 585 p.
- Fitzpatrick, J.F.J. 1910-1911. Some notes on the Kwolla District and its tribes. *Journal of the Royal African Society* 10. 16-52, 213-22.
- Fleming, H.C. 1969. Asa and Aramanik: Cushitic hunters in Masai-Land. *Ethnology* 8(1). 1-36.
- Fleming, H.C. 1976. Omotic overview. In Bender, M.L. (ed.), *The non-Semitic languages of Ethiopia*, 299-323. East Lansing: Michigan State University.
- Foucauld, Ch. de. 1951-2. *Dictionnaire touareg-français, dialecte de l'Ahaggar*. Tomes I-IV. Paris: Imprimerie Nationale de France.
- Foulkes, H.D. 1915. *Angass manual: Grammar, vocabulary*. London: Kegan Paul, Trench, Trübner and Co.
- Frajzyngier, Z. 1991. *A dictionary of Mupun*. Berlin: Dietrich Reimer Verlag.
- Frayha, 'A. / Frayha, A. 1973. *Mu 'ġam al-alfāq al- 'āmmiyya: A dictionary of non-classical vocables in the Spoken Arabic of Lebanon*. Beyrouth: Librairie du Liban.
- Gamer-Wallert, I. 1970. *Fische und Fischkulte im alten Ägypten*. Wiesbaden: Otto Harrassowitz.
- GÄSW = Calice, Graf F. von. 1936. *Grundlagen der ägyptisch-semitischen Wortvergleichung*. Wien: Selbstverlag des Orientalischen Institutes der Universität Wien.
- GB = Gesenius, W. (bearbeitet von Buhl, F.). 1962. *Hebräisches und aramäisches Handwörterbuch über das Alte Testament*. Unveränderter Neudruck der 1915 erschienenen 17. Auflage. Berlin – Göttingen – Heidelberg: Springer-Verlag.
- GD = Landberg, Le Comte de. 1920, 1923, 1942. *Glossaire daïnois*. Tomes I-III. Leiden: E.J. Brill.
- Genevois, H. 1955. Ayt Embarek: Notes d'enquête linguistique sur un village des Bani-Smail de Kerrata (Constantine). *Fichier de documentation berbère*, 8. année, 4. trimestre, no. 49. 1-83. Fort-National, Alger.
- Gochal, G. 1994. *A look at Shik Ngas*. Jos: Jos University Press.
- Greenberg, J.H. 1958. The labial consonants of Proto-Afro-Asiatic. *Word* 14. 295-302.
- Harries, J. 1974. *Tamazight basic course: Ait Mgild dialect. Final report*. Madison, Wisconsin: University of Wisconsin.
- Heine, B. 1975. Notes on the Yaaku language (Kenya). *Afrika und Übersee* 58(2). 119-138.
- Hellwig, B. 2000. *Goemai – English – Hausa dictionary*. MS. Draft. Printed out on 20 August 2000. 42 p.
- Hoffmann, C. 1971. On the position of Paduko. In *Actes du huitième congrès international de linguistique africaine. Abidjan, 24-28 Mars 1969*, vol. 1, 221-233. Abidjan: Université d'Abidjan.
- Hoffmann, C. 1975. Towards a comparative phonology of the languages of the Angas-Goemai group. MS. University of Ibadan, faculty seminar on 19 March 1975. 32 p.

- HSED = Orel, V.É. & Stolbova, O.V. 1995. *Hamito-Semitic etymological dictionary*. Leiden: E.J. Brill.
- Hudson, G. 1989. *Highland East Cushitic dictionary*. Hamburg: Buske.
- IL = Institute of Linguistics. 1972. *Bauchi Area survey report presented by N. Campbell and J. Hoskison*. MS. Zaria.
- Illič-Svityč, V.M. 1966. Iz istorii čadskogo konsonantizma: Labial'nye smyčnye. In Uspenskij, B.A. (ed.), *Jazyki Afriki: Voprosy struktury, istorii i tipologii*, 9-34. Moskva: Nauka.
- Jastrow, M. 1950. *A dictionary of the Targumim, the Talmud Babli and Yerushalmi, and the Midrashic literature*. Vol. I: ʔ-k. Vol. II: l-t. New York: Pardes Publishing House Inc.
- Johnstone, T.M. 1977. *Harsūsi lexicon*. London: Oxford University Press.
- Johnstone, T.M. 1981. *Jibbāli lexicon*. London: Oxford University Press.
- Johnstone, T. M. 1987. *Mehri lexicon*. London: University of London.
- Jungraihtmayr, H. 1962a. *Wörterbuch der Angas-Sprache*. MS.
- Jungraihtmayr, H. 1962b. *Wörterbuch der Goemay-Sprache*. MS.
- Jungraihtmayr, H. 1963. Die Sprache des Sura (Maghavul) in Nordnigerien. *Afrika und Übersee* 47. 8-89, 204-220.
- Jungraihtmayr, H. 1965. Materialien zur Kenntnis des Chip, Montol, Gerka und Burrum (Südplateau, Nordnigerien). *Afrika und Übersee* 48. 161-183.
- Jungraihtmayr, H. 1971/2. *Mulwi* (S. 1-13), *Masa* (S. 15-161). Wordlists. MS.
- Jungraihtmayr, H. 1977. *Kofa wordlist*. MS. 18 p.
- Jungraihtmayr, H. 1981. Inventaire des langues tchadiques. In Perrot, J. (ed.), *Les langues dans le monde ancien et moderne*, 407-413. Paris: Éditions du Centre National de la Recherche Scientifique.
- Jungraihtmayr, H. 1990. *Lexique mubi-français (Tchad oriental)*. MS. Frankfurt a/M. 50 p.
- Jungraihtmayr, H. 2004. Das Birgit, eine osttschadische Sprache – Vokabular und grammatische Notizen. In Takács, G. (ed.), *Egyptian and Semito-Hamitic (Afro-Asiatic) studies in memoriam Werner Vycichl*, 342-371. Leiden: E.J. Brill.
- Jungraihtmayr, H. & Ibriszimow, D. 1994. *Chadic lexical roots*. Vol. I. *Tentative reconstruction, grading, distribution and comments*. Vol. II. *Documentation*. Berlin: Dietrich Reimer Verlag.
- Justinard, (?). 1914. *Manuel de berbère marocain (dialecte chleuh)*. Paris: Librairie Orientaliste Paul Geuthner.
- KHW = Westendorf, W. 1977. *Koptisches Handwörterbuch*. Heidelberg: Carl Winter Universitätsverlag.
- Kossmann, M. 1999. *Essai sur la phonologie du proto-berbère*. Köln: Rüdiger Köppe Verlag.
- Kraft, Ch.H. 1981. *Chadic wordlists*. I-III. Berlin: Dietrich Reimer Verlag.
- LA III = Ibn Maḡḡūr. 1988. *Lisān al-‘arab al-muḡḡī*. Beyrouth: Dār al-Ġīl & Dār Lisān al-‘Arab.
- Landberg, Le Comte de. 1901. *Études sur les dialectes de l'Arabie Méridionale*. Premier volume: *Ḥaḡramoūt*. Leiden: Brill.
- Lane, E.W. 1863-93. *An Arabic-English lexicon*. Vols. I-VIII. London & Edinburgh: Williams and Norgate.
- Lanfry, J. 1973. *Ghadames*. II. *Glossaire*. Alger: Le Fichier Périodique.
- Laout, E. 1931. *Siwa*. I. *Son parler*. Paris: Librairie Ernest Leroux.
- Lecerf, J. 1957-1960. Les emprunts puniques en berbères. *Comptes rendus du GLECS* 8 (session of 24 June 1959). 71-72.
- Lentin, A. 1958. *Supplément au Dictionnaire pratique arabe-français de Marcelin Beaussier*. Alger: La Maison des livres.
- Leslau, W. 1987. *Comparative dictionary of Geʿez (Classical Ethiopic)*. Wiesbaden: Otto Harrassowitz.
- Levy, J. 1924. *Wörterbuch über die Talmudim und Midraschim nebst Beiträgen von Heinrich Leberecht Fleischer*. Zweite Auflage mit Nachträgen und Berichtigungen von Lazarus Goldschmidt. Bde. I-IV. Berlin & Wien: Benjamin Harz Verlag.
- Loubignac, V. 1952. *Textes arabes des Zaër: Transcription, traduction, notes et lexique*. (Publications de l'Institut des Hautes Études Marocaines 46). Paris: Librairie Orientaliste Paul Geuthner, Librairie Orientale et Américaine M. Besson.
- Lukas, J. 1971. Die Personalia und das primäre Verb im Bolanci (Nordnigerien). Mit Beiträge über das Karekare. *Afrika und Übersee* 55. 114-139.
- Milelli = *Dictionnaire français-libanais libanais-français*. 2010. Conception et réalisation Jinane Chaker Sultani et Jean-Pierre Milelli. S.I. [Cresprières]: Éditions Milelli.
- Militarev, A. Ju. 1991. Istoričeskaja fonetika i leksika livijsko-guančskih jazykov. In Solncev, V.M. (ed.), *Jazyki Azii i Afriki*. IV, kniga 2, 238-267. Moskva: Glavnaja Redakcija Vostočnoj Literatury.
- Netting, R.M. 1967. *Kofyar vocabulary*. MS.
- Nicolas, F. 1953. *La langue berbère de Mauritanie*. Dakar: Institut Français d'Afrique Noire.

- Ormsby, G. 1912-1913 & 1913-1914. Notes on the Angass language. *Journal of the Royal African Society* 12 (1912-1913). 421-424 & 13 (1913-1914). 54-61, 204-210, 313-315.
- Osing, J. 2001. Review of Takács, G.: Etymological eictionary of Egyptian, Vol. I. *Bibliotheca Orientalis* 58(5-6), coll. 565-581.
- Paradisi, U. 1960. Il berbero di Augila: Materiale lessicale. *Rivista degli Studi Orientali* 35(3-4). 157-177.
- PL = Wilson, P. 1997. *A Ptolemaic lexikon: A lexicographical study of the texts in the Temple of Edfu*. Leuven: Peeters.
- Prasse, K.-G. 1969. *A propos de l'origine de h touareg (tahaggart)*. Det Kongelige Danske Videnskaberne Selskab. *Historisk-filosofiske Meddelelser* 43(3).
- Prasse, K.-G. & Alojaly, Gh. & Mohamed, Gh. 1998. *Lexique touareg-français*. Copenhagen: Museum Tusculanum Press, Université de Copenhagen.
- Prasse, K.-G. & Alojaly, Gh. & Mohamed, Gh. 2003. *Dictionnaire touareg-français (Niger)*. Copenhagen: Museum Tusculanum Press, University of Copenhagen.
- Prost, R.P.A. 1956. *La langue songay et ses dialectes*. (Mémoires I.F.A.N. No. 47). Dakar: I.F.A.N.
- Qamus (Qāmūs) = Fīrūzabādī (Al-). 1319 h. *Al-Qāmūs al-muḥīt*, Le Caire (publisher unknown to the author). RdE = *Revue d'Égyptologie* (Paris).
- Renisio, A. 1932. *Étude sur les dialectes berbères des Beni Iznassen, du Rif et des Senhaja de Sraïr*. *Grammaire, textes et lexique*. Paris: Éditions Ernest Leroux.
- Ritter, H. 2009. *Wörterbuch zur Sprache und Kultur der Twareg*. I: *Twareg – Französisch – Deutsch*. *Elementarwörterbuch der Twareg-Hauptdialekte in Algerien, Libyen, Niger, Mali und Burkina Faso mit einer Einführung in Sprache und Schrift, Poesie und Musik, Orientierung und Zeitrechnung*. Wiesbaden: Harrassowitz Verlag.
- Ritter, H. (in Zusammenarbeit mit Prasse, K.-G.). 2009. *Wörterbuch zur Sprache und Kultur der Twareg*. II. *Deutsch – Twareg*. *Wörterbuch der Twareg-Hauptdialekte in Algerien, Libyen, Niger, Mali und Burkina Faso mit einer Darstellung von Phonologie, Grammatik und Verbalsystem*. Wiesbaden: Harrassowitz Verlag.
- Sachnine, M. 1982. *Dictionnaire lamé-français: Lexique français-lamé*. Paris: SELAF.
- Sasse, H.-J. 1979. The consonant phonemes of Proto-East-Cushitic (PEC). *Afroasiatic Linguistics* 7(1). 1-67.
- Schuh, R.G. 1981. *A dictionary of Ngizim*. Berkeley, California: University of California.
- SD = Beeston, A.F.L. & Ghul, M.A. & Müller, W.W. & Ryckmans, J. 1982. *Sabaic dictionary (English-French-Arabic)*. *Dictionnaire sabéen (anglais-français-arabe)*. Louvain-la-Neuve/Beyrouth: Peeters/Librairie du Liban.
- SED I = Kogan, A. & Militarev, A. (with assistance of Belova, A. & Kovalev, A. & Nemirovskaja, A. & Nosnitsyn, D.). 2000. *Semitic etymological dictionary*. Vol. I. *Anatomy of man and animals*. Münster: Ugarit-Verlag.
- Serra, L. 1970. L'ittionimia e la terminologia marinaresca nel dialetto berbero di Zuara (Tripolitania). *Studi Maghrebini* 3. 21-55.
- Sirlinger, E. 1937. *Dictionary of the Goemay language*. Jos, Nigeria: Prefecture Apostolic of Jos.
- Skinner, N. 1977. North Bauchi Chadic languages: Common roots. *Afroasiatic Linguistics* 4(1). 1-49.
- Skinner, N. 1996. *Hausa comparative dictionary*. Köln: Rüdiger Köppe Verlag.
- Stolbova, O.V. 1972. Soglasnye verhnepadnočadskih jazykov: Genetičeskie sootvetstvija. In Makaev, É.A. (ed.), *Istoriko-tipologičeskie i sinhronno-tipologičeskie issledovanija (na materiale jazykov raznyh sistem)*, 179-187. Moskva: Institut Jazykoznanija Akademii Nauk SSSR.
- Stolbova, O.V. 1977. Opyt rekonstrukcii verhnepadnočadskih kornej. In *Jazyki zarubežnogo Vostoka. Sbornik statej*, 152-160. Moskva: Nauka.
- Stolbova, O.V. 1987. Sravnitel'no-istoričeskaja fonetika i slovar' zapadnočadskih jazykov. In Porhomovskij, V.Ja. (ed.), *Afrikanskoe istoričeskoe jazykoznanie: Problemy rekonstrukcii*, 30-268. Moskva: Nauka.
- Stolbova, O.V. 1994. Chadic reflexes of Egyptian zš, sš, šz. MS. (Paper presented at the 6th International Hamito-Semitic Congress, Moscow, April 1994. 2 p.)
- Stolbova, O.V. 1995. Lateral sibilants in Chadic (reconstruction) and their correspondences in Semitic and Egyptian. In Ibrizimow, D. & Leger, R. (eds.), *Studia Chadica et Hamitosemitica*, 58-64. Köln: Rüdiger Köppe Verlag.
- Stolbova, O.V. 1996. *Studies in Chadic comparative phonology*. Moscow: "Diaphragma" Publishers.
- Strümpell, F. 1922-1923. Wörterverzeichnis der Heidensprachen des Mandara-Gebirges (Adamaua). *Zeitschrift für Eingeborenen-Sprachen* 13. 109-149.
- Taïfi, M. 1991. *Dictionnaire tamazight-français (parlers du Maroc central)*. Paris: L'Harmattan-Awal.
- Taine-Cheikh, C. 2008. *Dictionnaire zénaga-français: Berbère de Mauritanie*. Köln: Rüdiger Köppe Verlag.

- Takács, G. 1999. Sibilant and velar consonants of South Cushitic and their regular correspondences in Egyptian and other Afro-Asiatic branches. In Lamberti, M. & Tonelli, L. (eds.), *Afroasiatica Tergestina. Papers from the 9th Italian Meeting of Afro-Asiatic (Hamito-Semitic) Linguistics, Trieste, April 23-24, 1998. Contributi presentati al 9^o Incontro di Linguistica Afroasiatica (Camito-Semítica), Trieste, 23-24 Aprile 1998*, 393-426. Padova: Unipress.
- Takács, G. 2000. South Cushitic consonant system in Afro-Asiatic context. *Afrikanistische Arbeitspapiere* 61. 69-117.
- Takács, G. 2001. Towards Proto-Afro-Asiatic phonology: Ancient remnants in South Cushitic, Angas-Sura, and North Bauchi. *Rocznik Orientalistyczny* 54(2). 55-125.
- Takács, G. 2004. *Comparative dictionary of the Angas-Sura languages*. Berlin: Dietrich Reimer Verlag.
- Takács, G. 2011. *Studies in Afro-Asiatic comparative phonology: Consonants*. Berlin: Dietrich Reimer Verlag.
- Tourneux, H. 1991. *Lexique pratique du munjuk des rizières: Dialecte de Pouss*. Paris: Librairie Orientaliste Paul Geuthner.
- Tourneux, H. & Seignobos, Ch. & Lafarge, F. 1986. *Les Mbara et leur langue (Tchad)*. Paris: Société d'Études Linguistiques et Anthropologiques de France.
- Valbelle, D. 1977. *Catalogue des poids à inscriptions hiératiques de Deir el-Médineh. Nos 5001-5423. Incluant un manuscrit de Jaroslav Černý*. Préface de G. Posener. Le Caire: IFAO.
- Vergote, J. 1945. *Phonétique historique de l'égyptien*. Paris: Le Muséon.
- Wb = Erman, A. & Grapow, H. 1957-1971. *Wörterbuch der ägyptischen Sprache*. Vols. I-V.² Berlin: Akademie-Verlag.
- WTS = Littmann, E. & Höfner, M. 1956. *Wörterbuch der Tigre-Sprache: Tigre-Deutsch-Englisch*. Wiesbaden: Franz Steiner Verlag.
- WUS = Aistleitner, J. 1963. *Wörterbuch der ugaritischen Sprache*. Berichte über die Verhandlungen der Sächsischen Akademie der Wissenschaften zu Leipzig. Phil.-hist. Klasse 106/3.
- ZA = *Zeitschrift für Assyriologie und Verwandte Gebiete* (Berlin – New York).

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Dangla-Migama and Afro-Asiatic IV: Root initial *b- with C₂ sonants

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The paper is a new contribution to revealing the Afro-Asiatic heritage in the lexical root stock of the Dangla-Migama group of Chadic languages by means of inter-branch comparison primarily using, among others, the ancient Egypto-Semitic etymological evidence.

Keywords: Chadic languages, Afro-Asiatic comparative linguistics, African linguistics, ancient Egyptian, Semitic, historical phonology, etymology.

Introduction

The present series of articles has arisen from a review of the first comprehensive lexicon of the Bidiya language composed by native speaker linguist Khalil Alio (N'Djamena, Republic of Tchad) and Chadicist Herrmann Jungraithmayr (Frankfurt a/M),¹ which was, in fact, at a time an examination of the lexicon from the standpoint of etymology.² The original aim of my old paper was to show the multivalence of the Bidiya sibilant affricates only and how the lexicon of this so far little-known language contributes to various aspects of Chadic/Afro-Asiatic comparative-historical phonology and lexicon. This aim has been extended

¹ Alio, Kh. & Jungraithmayr, H.: *Lexique Bidiya: Une langue centre-africaine (République du Tchad)*. Berlin, 1989, Vittorio Klostermann. 164 p. Bidiya, which we find among the DM daughter languages, a language spoken in one of the southern provinces of the Republic of Tchad, at the western chains of the Abu-Telfan. The number of Bidiya people was estimated in 1963 around 12.500.

² The Bidiya lexicon has been reviewed by many authors from different viewpoints. Cf. the list of the relevant reviews in the Chadic bibliography by P. Newman (1996: 84, #1021; 2022: 12).

since then from the second part onto the etymological analysis of lexical roots of the whole Dangla-Migama group where Bidiya also belongs. Since then, the etymological entries have been arranged according to the articulation place of the initial radical.³

This series of etymological papers is devoted to revealing the Afro-Asiatic heritage in the lexicon of the languages of the Dangla-Migama group. Together with Dangla, Migama, Bidiya, and perhaps (?) Mokilko⁴ (as well as presumably the closely related Mahwa and Mogum also) belong to the so-called Dangla-Migama group⁵ of the eastern subbranch of the Chadic languages, which represent the sixth (or, according to others, fifth)⁶ branch of the Afro-Asiatic (Semito-Hamitic) macrofamily (comprising the following branches: 1. Semitic, 2. Egyptian, 3. Berber, 4. Cushitic, 5. Omotic, 6. Chadic).

Dangla-Migama *ḃ- + *-r-

● **62. PDangla *ḃar-** “to be distracted” [GT]: WDangla ḃàrṇiyè “être distrait, être ailleurs en pensée” [Fédry 1971: 105], EDangla ḃārē “être distrait, être dans la lune, être absent, rêver” [Dbr.-Mnt. 1973: 58]. The initial *ḃ- may reflect a lost laryngeal, e.g., like PAA **√Hbr or **√bHr or **√brH, neither of which has so far not been found in this form, but all the more in its diverse varieties. Thus, it may be remotely related to a so far uncharted PAA root family, whose original variety without the laryngeal radical and with an old *-l has been known only, cf. Sem.: Ar. √bl I: balla “3. ensementer (la terre), répandre (le grain), 7. se disperser, se séparer (se dit du peuple rassemblé)” [BK I 155; DAFA = Blachère 1967 I: 824] = “to sow (land)” [Lane 242c]⁷ ||| SBrb.: Ahaggar e-hlel [h reg. < *ḃ] “1. être distrait (avoir, en faisant un acte, l’esprit inattentif à cet acte et occupé d’autre chose)”, 2. être dans un état de distraction et les yeux fermés tout en entendant et en comprenant à demi”

³ Dangla-Migama and Afro-Asiatic I: Bidiya b.- = *Folia Orientalia* 45-46 (2009-2010), 133-148. Dangla-Migama and Afro-Asiatic II: Bidiya č- and ž.- = *Lingua Posnaniensis* 51 (2009), 119-124. Dangla-Migama and Afro-Asiatic III: Root initial *ḃ.- = *Lingua Posnaniensis* 63/1 (2021), 73-83.

⁴ The position of Mokilko is debated. In JI 1994 II: XV it is classified within the same group where Dangla and Migama belong. Other works (e.g. Caprile & Jng. 1973: 40; Barreteau & Newman 1978: 305; Jng. 1981: 411; JS 1981: 16; Porhomovskij & Stolbova 1991: 329; Stolbova 1996: 8), in turn, *unisono* maintain that Mokilko represents alone a distinct group within East Chadic (this is the recent position of Prof. Jungrauthmayr too, p.c. in 2002). V. Blažek (1994: 93) published his lexicostatistical result on the interrelation of four East Chadic languages (Sokoro, Jegu, Mubi, Mokilko) on the basis of the Swadesh 100 wordlist, according to which Mokilko stands closest to Mubi. But Blažek did not take the lexicon of the Dangla-Migama languages into account, so his proposal has no testimony value in this question. For the time being, my preliminary experience confirms JI 1994 II: XV, i.e. a tight relationship of Mokilko with the Dangla-Migama group (Jegu also) from a lexical standpoint.

⁵ Cf. Barreteau & Newman 1978: 305; Jungrauthmayr & Ibrizimow 1994 II: xv. Strangely, Jungrauthmayr (1981: 411) separated Bidiya from Dangla-Migama, and placed it in the Mubi group, which cannot be supported from the standpoint of the lexical evidence.

⁶ Depending on whether we accept Omotic as merely a western subbranch of the Cushitic (fourth) branch (as recently M. Lamberti and A. Zaborski maintained) or as an independent (fifth) branch of AA (as the majority of researchers suppose).

⁷ In the lexicon by R. Blachère et al. (l.c.), this sense is regarded as secondary (“ext.”) from √bl “mouiller, tremper”.

[Foucauld 1951-2: 591] = ə-hləl “être distrait” [Prasse 1969: 54, #238] ||l HECu.: Sidamo billälla “to disperse (intr.), be scattered”, billäll-isa (caus.) “to scatter” [Gasparini 1983: 40] || SCu.: Dahalo *βilafil- “to scatter” [EEN 1989: 44] ||l WCh.: Goemay fulung [< *v^weleŋ?] “to throw about, disarrange, disorder”, û fulung pê n’kilip “the goats threw every thing in the kitchen”, n’hat fulung “a pin “the wind disarranged the grass on the roof” [Sirlinger 1937: 53] (isolated in AS: Takács 2004: 389) < PAA *√bl(l) “to scatter” [GT].⁸ Cf. EDE II 445 and EAAN I 62, #259.

• **63. Bidiya ɓarɓàr (ɓarɓìrì, ɓarɓirèŋ), pl. ɓarɓàr (ɓarɓàarì, ɓarɓàareŋ)** “mentir” [AJ 1989: 62] may be derived from Ch. *√br “lügen” [GT] provided the ɓ- is due here to *mb-, cf. WCh.: Pero búrù “to deceive” [Frj. 1985: 23] || CCh.: Mwulyen mbwàrmà “Lüge” [Kraft]. This is a Chadic root variety with *b- that seems to have been much more sporadically preserved than the one with *p-, cf. below:

63.1. AA *√pr “1. to lie, 2. abuse” [GT]: Sem.: Akk. (aA, jB) parû “etwa: Gemeines sagen” [AHW 837] || Ar. √fry I: farā “6. inventer, forger (un conte, mensonge)”, IV “4. adresser à qqn. des reproches, blâmer qqn.”, VIII “imaginer, inventer, forger (un mensonge)”, fry-at- “mensonge, imposture”, fariyy- “8. imaginé, inventé à plaisir, forgé (récit, mensonge)” [BK II 589] = √fry VIII “to forge or fabricate a lie or falsehood”, fry-at- “a lie or falsehood, also: defamation”, fariyy- “a thing forged or fabricated (hence: unknown, unheard of), also: a forger or fabricator of lies” [Lane 2391-2392] ||l Eg. p3.w [< *√pr] “etwas das sich nicht zu sagen ziemt” (MK,⁹ Wb I 498, 3) = “falsehood (?), gossip (?)” (FD 87) ||l NBrb.: Tamazight-Zayan (Central Moroccan) s-fərr-ət “lügen” [SISAJa l.c.] = s-ferrer, t-s-ferrir “mentir, raconter des mensonges”, i-s-firir-n “mensonges, fait de mentir” [Taïfi 1991: 119; DRB 605: isolated in Brb.] ||l HECu.: (?) Hadiya fa/ār-¹⁰ “to bewitch, deceive” [Sasse 1979: 18, 38] || SCu.: Qwadza pul-um- [I reg. < *r] “to cheat” [Ehret 1980b MS: 3]¹¹ ||l WCh.: Fyer fyéràt “Lüge” [Jng. 1970: 141] | (???) Ngizim fǝřǝřtú “to backbite, abuse someone when he is not present” [Schuh 1981: 56-57]¹² || CCh.: Lame fār- “mentir (dans le sens de fabuler, raconter des bobards, enjoliver une histoire)” [Sachnine 1982: 293] || ECh.: Lele pōryē ~ pōryī ~ pōyrē ~ pōyri “1. mensonge, 2. se vanter” [WP 1982: 77]. Some of these cognates have already been equated: the Eg.-Ar. parallel is due to C. T. Hodge (1966: 26), whereas the Sem.-Brb. one was proposed SISAJa I, #30.¹³ The rest of the AA *comparanda* were included

⁸ Eventually derived from PAA *√bl “to lo(o)se(n)” (EAAN I 61, #256)? Cf. also AA *√pl “to sprinkle” (EAAN I 93, #440) as a remote PAA root variety.

⁹ Stela of Usermontu, reign of Sesostris I, cf. Sethe 1959: 79, l. 18.

¹⁰ Unless it derives from ECU. *fa(°)- “to curse, bewitch, deceive” [Sasse 1979: 18, 38, 61].

¹¹ Ch. Ehret (1980a: 147) equated Qwadza pul-um- with Ma’a -bubúšu “to startle, astonish”, which he explained from his SCu. *puš-/°mpuš- “to fool (s’one)”. False both phonologically and semantically.

¹² Semantically ambiguous. Alternatively, it might be affiliated with Eg. wf3 “Verbum des Redens: beistimmen” (MK, Wb I 306, 4) = “1. (verb) to talk about, discuss, support (a plan), 2. (noun) talk, subject of conversation” (FD 60) = 1. darüber sprechen, diskutieren, 2. verfechten (eine Sache von jemm.), 3. *vorwerfeln” (GHWb 193), equated by C.T. Hodge (1981a: 373, #26) with PCh. *p-rə “to say” and Brb. *-fihr- “to say” and, similarly, by Ch. Ehret (1995: 106, #84), i.a., with Sem.: Ar. √frf “to cry out at” and PCu. *fār- “to call out”.

¹³ The Russian linguists (SISAJa l.c.) equated the Sem.-Zayan parallel with a number of semantically false parallels.

by G. Takács (2000: 76, #2.7; 2009: 191, #72; EDE II 392; EAAN I 87, #415). Eventually related to AA *√pr “bad” (above)? Cf. EDE II 392.

63.2. A further possible rare variety with *-l is known in Sem.: Ar. habl- “ruse, astuce”, ʔihtabala “intriguer, se montrer faux, trompeur” [DRS 359, HBL1 with dubious parallels].

• **64. PDangla *b̥ər-** “to sprinkle saliva from mouth” [GT]: WDangla b̥èrè “1. faire un bruit avec explosion des lèvres: ‘br’, 2. semer avec la bouche (grains de sésame)” [Fédry 1971: 105], EDangla b̥ééré (m) “cracher de l’eau en fines gouttelettes, asperger avec la bouche, postillonner” [Dbr.-Mnt. 1973: 58] = b̥ééré “(beim Sprechen) Speichel verspritzen” [Ebobisse 1979: 132]. May be the result of a contamination of the root PDangla *b̥ar- “to be distracted” [GT] (described under #62 preceding) and a reflex of Sem.: Ar. bary- “bave, salive qui coule de la bouche” [BK I 113; DRS 86: isolated in Sem.!] || MSA: Soqotri √bʿr “cracher” [Leslau 1938: 92; DRS 75 with false Sem. etymologies] || NBrb.: (???) Tamazight i-beruy-n (pl.) “sperme” [DRB 117: isolated in Brb., not found in Taifi 1991: 29] || WCh.: Gwandara b̥ùb̥uri “to vomit” [Matsushita 1972: 27] < PAA *√bry ~ *√byr (root vars. via met.) “1. to spit, 2. eject (???)” [GT]. See EAAN I 59, #241. Further more widely spread remote root varieties appear in:

64.1. AA *√fry “to spit” [GT] > Sem. *√pry [GT]: Akk. (jB) parû “(sich) erbrechen”, (jB) parûtu ~ purûtu “Erbrochenes” [AHW 837, 880]¹⁴ || Ar. √fry I: faraya “1. vider (un vase, etc.), faire maison nette, faire évacuer un lieu”, fariya “2. être versé et couler (se dit de l’eau, etc.)”, II “1. verser (l’eau, un liquide) en vidant un vase, 2. vider (un vase)”, IV “1. verser, répandre (l’eau, le sang), jeter de l’eau sur qqn., vider un vase sur qqn., 2. couler qqch. dans un moule”, X “2. jeter dehors, avoir une expectoration, rendre par la bouche, 3. vomir, avoir des vomissements”, furāy-at- “sperme de l’homme”, ʔistifrāy- “2. expectoration, vomissement, 3. sécrétion”, mustafriy- “1. qui donne beaucoup de lait (chamelle)” [BK II 580-582] || Eg. f3ḥ.w (pl.) [< *frḥ, but *√fry also poss.]¹⁵ (spitting man det.) “cracheur (?)” (CT VI 307e, AL 78.1569) = “die *Spuckenden” (GHWb 305) = (untranslated in DCT 145) || CCh.: Glavda vərəḡh [seems poss. < *√fry]¹⁶ “to vomit (?)” [Rapp & Benzing 1968: 99]

¹⁴ Derived by F. Buhl (GB 660) from Sem. *√pry > Ar. √fry “entleeren, (min) sich einer Sache entledigen, unbeschäftigt sein” [GB] (doubtful). Cf. also MSA: Jibbali ʒə-frāy “to be done, finished, empty” [Johnstone 1981: 60], Mehri əftōrəy “(gun) to fire, go off by itself” [Johnstone 1987: 98]. The Semitic etymology of Akk. parû is, however, uncertain due to its -a- indicating rather *-h or *-ʔ as C₃ (cf. GAG 25; Moscati et al. 1964: 41-42, §8.54), although there are exceptions (cf. Kogan 1995: 160-161). J. Huehnergard (1991: 694) compared it to ES *√firh “to be afraid”, which is semantically unconvincing.

¹⁵ For the rare, albeit existing correspondence of Sem. *γ and Eg. ḥ, cf. most recently Takacs 2011: 139-154.

¹⁶ Glavda v- < AA *f- should still be justified, cf. only Glavda var “to redeem, bring out” [RB] || SCu.: Dahalo fir- “to take out” [Ehret 1980a: 149; EEN 1989: 23]. But the correspondence of Glavda ḡh to AA (Eg., Sem., SCu.) velars seems proven in a number of examples, cf. (1) SCu.: WRift *ḡaš-īt (med.) “to be silent” [KM 2004: 320] || Sem. *√ḡš “calm” [GT]: Ar. ḡašaʿa “to be humble, submissive, faint (voice)” || Geez ḡašaʿa ~ ḡašaʿa “to be calm, still etc.” (Sem.: Leslau 1987: 266) || CCh.: Glavda ḡhačəḡa-ḡhačəḡa [ḡh- < *Q- reg.] “still, calm” [RB 1968: 42] < AA *√Qč “calm” [GT]. (2) Glavda ḡhal “to beg, beseech, want, ask” [RB] || SBrb.: Ahaggar ə-ḡhəl “aimer, vouloir” [Prasse 1969: 85, #570] < AA *√QHL. (3) Glavda ḡhəl(à) “(small) sacrifice” [RB] || Eg. ḡn [< *√ḡl] “Gaben bringen” (PT, Wb III 286, 16). (4) Glavda ḡhwāsa “knife” [RB] || Eg. ḡws “1. (XIX.) (Tiere als Opfer) schlachten, 2. (MK) als Zuruf o.ä. in den Reden beim Zerlegen der Schlachttiere” (Wb III 249).

< AA *√fry “to spit, vomit” [GT]. This Eg.-Glavda etymology is due to G. Takács (2003: 189-190, #311; EDE II 560).

64.2. Maybe both roots above were of biconsonantal origin, cf. the traces of such a supposed simplex (albeit, attested with *p- instead of the expected *f-) in Ch. *√pr¹⁷ “to spray through the mouth” [GT] > WCh.: Angas por “to spit, spit out” [Foulkes 1915: 266] = pur “to sprinkle”, cf. pur-po “to mince words, pretend” (lit. “to sprinkle mouth”, sic) [Gochal 1994: 123]¹⁸ | Ngizim pùurú “to spray, spit out in spray” [Schuh 1981: 133] || CCh.: Mofu-Gudur -pápər- “projeter de l’eau avec la bouche (sur une plaie), vaporiser de l’eau (sur une natte)” [Br. 1988: 218]. See EAAN I 105, #500.

• **65. Bidiya b̀òr (b̀òrí, b̀òrèṅ), pl. b̀òrow (b̀òroowí, b̀òroweṅ)** “fendiller, fissurer” [AJ 1989: 62] || WCh.: Hausa ɓàmbàrà “1. to break off (maize grains, bark, plaster), 2. to separate sg. sticking to another”, ɓámɓàréé “1. to break off, 2. peel off” [Abr. 1962: 71] | Galambu ɓár-àalá “to cut (off)” [Schuh 1978: 142] | Ngizim b̀èrú “1. to separate a unitary thing into parts, 2. (intr.) divide up a unitary thing into parts” [Schuh 1981: 28] || CCh.: Mofu-Gudur -b̀ər- “se fendre (mur, calebasse, bois)” [Br. 1988: 89] | Vulum (Mulwi) ɓírwi “diviser, partager, séparer” [Tourneux 1978a: 289; 1978b: 92], Musgu-Puss ɓirwi “séparer, diviser”, ɓəraw “partage, division (le fait de diviser), répartition” [Tourneux 1991: 79], Mbara ɓíráw “déchirer, rompre” [TSL 1986: 257] | Masa ɓùraw “diviser (tr.)” [Caïtucoli 1983: 43] < Ch. *ɓr “to separate” (which points to AA *√bHr or *√Hbr, cf., e.g., #62 and #64 above) [GT] || Sem. *√hbr: Ar. habara “couper en morceaux, déchirer (viande)”, Egyptian Ar. habar “1. mordre dans, 2. donner un coup” (Ar.: DRS 361, HBR2).

• **66. DM *b̥b̥ōr-** “unripe” [GT]: WDangla ɓ̀òrè “être vert, non arrivé à maturité (exclusivement pour un fruit)” [Fédry 1971: 107], Bidiya b̀òr (b̀òrí, b̀òrèṅ), pl. b̀òròw (b̀òròwí, b̀òròweṅ) “ne pas réussir (fruit), mal se former” [AJ 1989: 59]: the b̀- is not clear in the light of the comparative data reflecting plain *b- without trace of a laryngeal (unless we consider LECu.: Sidamo -ʔ- in one record) or prenasalization (possibly inducing *b̥- in Chadic), cf. ECh.: Somray b̀èrà “cru” [Jng. 1993 MS: 5] | Birgit bùurũny “vert (pas mûr)” [Jng. 2004: 351]¹⁹ (Ch.: JI 1994 II: 254-255) || LECu.: Oromo burundō “raw meat” [Gragg 1982: 71] | HECu.: Sidamo burā “to be raw, uncooked, not cooked, unripe (fruit)”, burā “raw, not cooked, unripe (of grains, cereals, fruits)” [Gasparini 1983: 50] = buʔr- “to be raw”, buʔra “raw meat” [Hudson 1989: 121] || SBrb.: EWlmd. ɓ̀rày [h̥ and h reg. < *b̥] “être cru (fruit, légume, viande)” [PAM 1998: 138; 2003: 344] < PAA *√br(y) “unripe, raw” [GT]. Cf. EDE II 261 (with further possible SAA cognates); Takács 2009a: 335, #64.

66.1. This root must be ultimately akin to PAA *√br(y) “new” [GT], whose Chadic reflexes with *mb- may perhaps resolve the clue of DM *b̥- above, cf. LEg. *brj → Dem. brj “1. jung, 2. auch: neu” (DG 119, 2) → Coptic (SAL/A₂) ⲃⲠⲢⲈ, (B) ⲃⲈⲠⲢ, (S) ⲃⲠⲢⲈ, (F) ⲃⲈⲠ(Ⲉ)I “new, young” (CD 43a; CED 26; KHW 27) = “neuf, nouveau, jeune” (DELG

¹⁷ Although PCh. *p- (not *f-) suggests a slightly distinct ultimate AA root (*√pr), perhaps a var. to AA **√fr.

¹⁸ Mistakenly equated by O.V. Stolbova (1987: 146) with Ngizim pàaḍú “to suck” [Schuh 1981: 131].

¹⁹ Unless it is a deviant reflex deriving from ECh. *balny- “green, blue” [GT].

30) ||| LECu.: Elmolo burrída “new” [Heine 1973: 281] | (?) Oromo bar-o (sic) “new” [Mukarovsky 1981] || N Om.: Mocha bər-o (?) “new” [Bender 1971: 260, #57, not in Leslau 1959] = bōr-o [Mukarovsky 1987: 234] ||| Ch. * $\sqrt{m}br(w)$ “new” [JS 1981: 193A]: WCh.: Sbauchi * $\sqrt{(m)}br$ “new” [GT]: Wangday mbūr-ni [Shimizu], Dokshi (Lushi) mboori [Shimizu], Dikshi mbori [Shimizu], Boodli (Zumbul) bwārī [Shimizu], Dwot bəri [Shimizu], Zaar-Kal mbur [Shimizu] (Sbauchi: Shimizu 1978: 44, #96) || CCh.: Zime-Dari mbōrēw “neuf, nouveau” [Cooper 1984: 17], Zime-Batna b̄r̄r̄ew “new” [Jng.] = mbīrēd [Sachnine], Lame mbīr̄ew “new” [Sachnine 1978a: 198], Peve mbr̄ew “new” [Venberg 1975: 37]. H.G. Mukarovsky (1981: 115, #22) compared the Coptic-Oromo-Buduma-Mocha match with Basque (Biskaya) berri ~ barri “new” as a Mediterranean areal parallel.

• **67. EDangla b̄r̄b̄ity** (partial reduplication < * $\sqrt{br}r̄y?$?) “le sursaut (de peur ou d’étonnement)” [DM 1973: 58] ||| Sem.: Tigre bərṣ belä “sursauter de frayeur” [DRS 86, br̄2: semantically false parallels, in fact isolated] < PAA * $\sqrt{br}[ç]$ “to spring from fear” [GT].

• **68. DM *b̄ar̄b̄ar-** “to grill (?) food” [GT]: Bdy. b̄ar̄b̄arre (m) “préparation rapide d’une nourriture” [AJ 1989: 62], cf. also EDangla b̄ar̄b̄arē (m) “boule grillée sur la braise (provision de voyage)” [DM 1973: 58]. Part of a widespread and well-known root family:²⁰

68.1. In principle, the DM stem may reflect the same reduplication as Sem.: perhaps Gurage (almost all dialects) b̄ar̄b̄ar barä “to shimmer, flicker (flame), burn in a bright and very wavy way” [Leslau 1979 III: 151] ||| Eg. brbr “kochen” (NE, Wb I 466, 1; GHWb 256) > Coptic (SL/A₂) $\overline{B\overline{P}B\overline{P}}$, (SFB) \overline{BEPBEP} , (F) \overline{BAPBEP} “aufwallen, siedeln, sprudeln (vom Wasser), lodern (vom Feuer)” (KHW 26), hence NEg. brbr (fire det.) “ein Getränk oder Speise” (GHWb 256) ||| NBrb.: Shilh (Sus) berbur “bouillir” [Wölfel] = bb̄r̄br̄ “bouillir (liquide), faire du bruit en bouillant” [Kossmann] || EBrb.: Ghadames b̄er̄b̄er̄ “chanter (eau qui bouit)” [Kossmann] (Brb.: DRB 90, br2; Kossmann 1999: 92, #173) ||| NAgaw: Bilin birbir ~ br̄br̄ “sich entzünden, (ver)brennen (intr.)” [Reinsich] = “s’allumer” [Cohen], Dembea beber- “verbrennen (intr.)” [Reinsich], Qwara beber- “verbrennen (intr.)” [Reinsich] | SAgaw: Awngi b̄äv̄ar “to burn, be on fire” [CR apud Dlg.] = b̄ir̄-ir̄ “to burn (intr.)” [Hetzron apud Bender 1973a MS: 3, #12] (Agaw: Reinisch 1885: 40; 1887: 83) || LECu.: Somali-Jabarti baburu “(Feuer)funke” [Reinisch 1904: 56] ||| WCh.: Gwandara b̄òr̄èb̄òr̄è “tepid (water)” [Matsushita 1972: 27] || CCh.: Bura borbor “heiß, hitzig” [Reutt & Kogan 1973: 86] || ECh.: Sokoro b̄órib̄ó-ti, cf. na b̄órib̄óti ókidi “ich wärme die Hände am Feuer” [Lukas 1937: 31] < CAA * $\sqrt{br}br$ “to heat” [GT].

68.2. The simplex is also widely attested: CAA * \sqrt{br} “warm” [Sasse 1981: 160, #4] = “1. to be hot, 2. burn” [GT] > NBrb.: Mzab a-b̄er “bouillir”, a-bbar “bouillonnement” [Delheure 1984: 10], Wargla a-ber “bouillir” [Laoust] = a-b̄er “bouillir” [Delheure 1987: 27] | Nefusa a-b̄er “bouillir” [Laoust 1931: 205] || EBrb.: Ghadames ā-b̄er “bouillir”, u-bb̄er “bouillonnement de l’eau” [Lanfry 1973: 24, #95] = â-b̄er “bouillir” [Kossmann], Audjila

²⁰ Literature: Reinisch 1887: 83 & 1904: 56; Trombetti 1923: 116, #60; Cohen 1947: #403; Wölfel 1955: 89; Mukarovsky 1959: 18; IS 1966: 17, 19; 1971: #190; Dlg. 1966: 51; SISAJa I 95, #117; OS 1992: 192; HCVA II #132; HSED #282 & #338; DRB 90.

yu-vîra (pf., 3rd p. sg.) “bollire” [Paradisi 1960: 161] = u-ver [Kossmann] || SBrb.: Ahaggar ber “bollire” [Trombetti] (Brb.: DRB 90; Kossmann 1999: 92, #173) || NAgaw: Bilin bir- “heiß, warm w./s., sieden, kochen” [Reinisch] = bir- “chauffer” [Cohen] = bər- “to boil, be hot” [Apl. 1984: 50], Hamir bir- “heiß, warm werden/sein” [Reinisch], Hamta bēro “warm (of air, water)” [Bender 1970b MS: 5, #91], Hamtanga bīr- “to be hot” [Apl.], cf. Kemant bilu “warm” [Bender 1973b MS: 11, #91] || SAgaw: Awngi bīr- “to be hot” [Hetzron apud Bender 1973 MSa: 11, #91, so also in Dlg. l.c. and Apl. l.c.], Kunfāl bīr-ani “warm (adj.)” [Bender 1970b MS: 5, #91] (Agaw: Reinisch 1884: 349; 1885: 40; 1887: 82; Dlg. 1966: 51; 1973: 198; Apl. 1991 MS: 7) || NOm.: Koyra (Badditu) bōr “cuocere il pane” [Cerulli 1929: 60] = bor- “to bake” [Hayward 1982: 238] || WCh.: (?) Pero pūrò [p- < *b-?] “to make a fire” [Frj. 1985: 46] || CCh.: Gude vovə̀ə “to partly singe (of hair, leaves, etc.)” [Hoskison 1983: 289] | Mafa bāwār- “chauffer au point de donner une sensation de brûlure, brûler (pour le feu lorsqu’on en est proche)” [Barreteau-Bléis 1990: 92] | (?) Mandara mbur [unless -r < *n] “to boil” [OS, source not clear] || ECh.: Kera bóoré “sich aufwärmen, Feuer fangen” [Ebert 1976: 33] | WDangla bṑ̀rè “activer le feu, attiser” [Fédry 1971: 96] | Mubi būrú [dissim. < *burur (?)] “anmachen (Feuer)” [Lukas 1937: 181] = bṑ̀ról, pl. bārál “allumer, attiser le feu” [Jng. 1990b MS: 5]. G. Takács (1999a: 26) pointed to an eventual root variety (s.v. Eg. nbjbj < AA *√bl).

68.3. Still, these parallels, reflecting plain *b-, do not explain DM *b̥-, which could only derive from a resolved cluster of either *bH or *mb-. The former option seems to be corroborated here by Sem. *√b̥r [infix *-̥-?] “1. to light fire, 2. heat” [GT]: Emar buhri [*√b̥r/*√byr] “hot” [Zadok 1991: 116, #8], Ug. √b̥r “to inflame (?)” [Gordon 1955: 248, #342, not in WUS #559] = D “1. encender, 2. quemar, 3. chamuscar” [DLU I 103], Hbr. √b̥r qal “brennen (intr.)”, piel “anzünden” (ein Feuer, Holzstücke, Brandpfeile, Lampen) [GB 108], JPArām. & NHbr. √b̥r “anzünden, verbrennen” [GB] = “brûler, enflammer” [DRS] (NWSem.: DRS 75) || ES: Geez baʿara “to burn up, set (a field of grass) on fire, set a blaze” [Leslau], cf. Tigre baräʿe “the fire broke out and spread”, barəʿ “fire in the wilderness” [Leslau] (Sem.: Leslau 1987: 84) || WCh.: AS *p̥(y)u̯ur (or perhaps *p̥(y)ūr?) [*p̥- < *b- regular] “to singe” [GT]: Angas pur “to burn out (as of driver ants) by applying bunches of burning grass wherever they are seen” [Foulkes 1915: 268] = p̥ur (Kabwir dialect) “1. to burn out (ants by bunches of fire), 2. or also roast groundnuts” [Jng. 1962 MS: 34], Mupun p̥ūr “to burn feathers, hair on carcass” [Frj. 1991: 50], Goemay piuur “to singe an animal’s body to get rid of its hair” [Sirlinger 1937: 183] = pyuur “to burn just a bit (as opposed to kuur)” [Hellwig 2000 MS: 29] < PAA *√b̥r “to heat” [GT], which may well be a C₂ root extension variety of the PAA simplex *√br (above).

• **69. PDangla *√br̥** “to tear off (branches)” [GT]: WDangla b̥artyè “ébrancher, arracher avec la main en cassant à partir du tronc, sans couteau” [Fédry 1971: 105], EDangla b̥irtyè “ébrancher, élaguer, émonder, tailler” [DM 1973: 58] || CCh.: Masa b̥irét “séparer, couper” [Ajello et al. 2001: 51]. The underlying Chadic root may have suffered the usual metathesis of glottalization (e.g., and may represent a root variety to PAA *√pr̥c̥ ~ *√pr̥c̥ “to separate” [GT]: Sem. *√pr̥š ~ *√pr̥ḏ “to break” [GT]: Akk. (bab., nA) parāšu “durchbrechen” [AHW 832] || (?) Ug. pr̥š “Öffnung (?)” [Aistleitner 1948: 216; WUS #2280] | Hbr. √pr̥š qal

“1. reißen, einen Riß hervorbringen, 2. (einen Schacht) brechen, 3. einreißen (Mauer), 4. in ein Haus einbrechen” [GB 661] | Ar. *faraša* “couper en deux” [BK II 572] = “to cut” [Leslau] vs. *farāḍa* “tailler, faire des coches, des entailles dans un morceau de bois” [BK II 573] = “einschneiden, einen Einschnitt machen” [Barth apud GB] | MSA: *Jibbali fārōḍ* “to separate vertebrae from oa.” [Johnstone 1981: 59-60] || ES: Geez *faraša* “to break open, cut open, split” [Leslau 1987: 167] || EBrb.: *Ghadames e-frəḍ* “ouvrir en deux (un fruit)” [Lanfry 1973: 96, #420] || WCh.: Hausa *fārḍáá* “to hoe up (groundnuts)”, *fārḍà* “to slit open front of animal”, *fārḍè* “to slit up completely, hoe up all of” [Abr. 1962: 253] || CCh.: Mofu-Gudur *pərḍaḍá ~ pərḍeḍé* “(yeux) grand ouverts” [Brt. 1988: 219] || ECh.: *Mokilko pōrḍyo* “fissure, passage, espace étroit entre deux grosses pierres” [Jng. 1990a: 161], *Bidiya porḍòc* “croquer (de la kola)”, *porḍòny* “croquer” [AJ 1989: 108]. Cf. EDE II 484-485; EAAN I 90, #425.

● **70. WDangla ɓ̀urtyàm ɓ̀urtyàm ~ ɓ̀iɓ̀urtyàm** [< *burtyam] “qui a de grosses lèvres et un gros nez” [Fédry 1971: 107] || Sem.: Ar. *barṭama I* “3. se fâcher, froncer le sourcil et prendre un air sévère”, *birṭām-* and *barāṭam-* “qui a les une lèvre grosse et comme enflée”, *barṭam-at-* “expression de la colère sur le visage quand il paraît comme enflé” [BK I 112] = *barṭama I* “bouder, faire la moue, être renfrogné, se mettre en colère”, *birṭām-* (adj., subst.) “1. grosse, épaisse (lèvre), 2. lippu (homme)”, *burāṭim-* “lippu (homme), thick-lipped (man)”, *burṭūm-* “trompe (de l’éléphant)” [DAFA = Blachère 1967: 550] = *burṭūm-* “trompe, museau (de l’éléphant)” [Dozy I 73] = *barṭama I* “1. faire la lippe, la moue, 2. se renfrogner”, *burṭūm-* “trompe, (d’éléphant), babine” [DRS 84, brṭm: isolated]. Borrowed from Arabic in spite of *Dangla ɓ̀-* suggesting a cognacy with longer history?²¹

● **71. WDangla ɓ̀aràs** “évoque le mouvement du couteau tranchant la peau en glissant en longueur” [Fédry 1971: 105] || Sem.: PAram. *√brš [GT] > Aram. *bʿraš*, NHbr. *bērēš* “couper entièrement par le travers”, *bārēš* “trouer”, Syr. *bʿraš* “pénétrer, pouvoir” (Sem.: DRS 86) < PAA *√brç “to cut through” [GT]. Metathesis of glottalization in Chadic (cf. already some cases in Illič-Svityč 1966, then many in Stolbova 1996 and 2016).

71.1. Should be distinguished (as a remote root PAA variety) from PAA *√brs “to cut, separate” [GT] > Sem.: Ar. *barrasa II* “briser (les mottes)”, *tabarrasa* “s’écraiser sur un écueil”, (Maghrebi) *barras* “casser” || ES: Harari *bārāsä* “être aboli”, Gurage √brs “démolir” (Sem.: DRS 85) || (?) Eg. *b3s* [reg. < *√brs] “to devour” (CT I 293b, FD 78) = “ausschneiden” (NBÄ = Osing 1976: 228-229) = “dépecer, déchirer, déchiqueter” (AL 77.1180, 78.1244) = “herausschneiden” (GHWb 242)²² || SBrb.: *Ahaggar e-bres* “trier (en mettant d’un côté ce qui est bon, de l’autre ce qui est de qualité inférieure)” [Foucauld 1951-2: 100] || NOM.: *Koyra (Badditu) burs* “tagliare” [Cerulli 1929: 60] = *burs* [Cerulli, Hayward apud Bender] = *burse* [Corlett] = *bur-* (!) [Cumbers, Siebert & Hoefl], *Kachama (Haruro)*

²¹ As a cognate, SBrb.: *Ahaggar berezrež* “avoir la peau qui forme un grand nombre de plis de graisse (le sujet étant une personne très grasse dont la peau forme beaucoup de plis de graisse, non seulement au ventre, mais à diverses parties du corps)” (derived from *erz* “casser”, hence *tā-me-rrež-ut* “pli de la peau du ventre”) [Foucauld 1951-2: 102, 1679 > DRB 128] cannot be considered.

²² Following J. Osing (NBÄ 782, n. 978), W. Westendorf (KHW 563) derived Cpt.: (B) *᠘ᠠᠮᠢᠪᠡᠯ* “Meißel, Messer” from CT *b3s*, which is both semantically and phonologically mistaken.

burs-ā-na “tagliare”, burs-ā “frammento, pezzo” [CR 1937: 641] = bur-s “to cut” [CR apud Bender] (NOM.: Bender 2003: 85, #33) || Ch. *√brs [GT]: CCh.: Glavda birs “to take off, remove” [RB 1968] | Mofu-Gudur -bórs- “1. (s’)effriter, 2. (se) réduire en poussière, 3. casser facilement” [Brt. 1988: 84] || ECh.: DM *bors- “to crush grain” [GT]: WDangla bórsè “écraser à demi: du mil cuit auparavant dans l’eau, la terre pour le débroussage” [Fédry 1971: 92], EDangla bòrsē “1. concasser, écraser à demi des grains, 2. labourer la terre (pour un phacochère)” [Dbr.-Mnt. 1973: 51], Migama bòrzò (bòrzé, bòròzzá) “1. écraser à moitié (se dit des sésames), 2. remuer la terre pour préparer les semences des sésames” [JA 1992: 71]. Cf. EDE II 88-89 with further root vars. and alternatives in Eg.); EAAN I 56-57, #224.

● **72. DM *b̥arč/t-** “green” [GT]: Bidiya b̥aràč (b̥arčí, b̥arčèŋ), pl. b̥aràč (b̥aràáci, b̥aràaçèŋ) “verdir, bleuir”, b̥aràáci (pl.) “verdure, légumes”, b̥aràčga “vert” [AJ 1989: 62], cf. perhaps also Migama b̥àytà [if < *b̥art(y)a?] (adj.) “vert (pas mûr)” [JA 1992: 73]. May be derived from *b̥arač/ṭ due to the usual metathesis of glottalization, which, in turn, may represent the reflex of either of the following roots with palatalization of the respective glottal C₃:

72.1. CAA *√br̥k “1. to flourish, 2. be green” [GT]: Sem.: Amh. b̥arāqq^wa “commencer à mûrir (céréales)” [DRS 86] || NBrb.: Qabyle bberwaq “donner des feuilles abondantes” [Dallet 1982: 50] || HECu.: perhaps Darasa (Gedeo) baṅ-ó “green fruit” [Wedekind 1976-1979: 169] || WCh.: AS *m̥barak ~/> *b̥arak “1. fresh, 2. wet, 3. green” [GT]: Sura b̥arak “grün” [Jng. 1963: 59], Mupun m̥brák “wet (about grass only)” [Frj. 1991: 36], Kofyar b̥aràk “wet, green, unripe” [Netting 1967: 1], Mushere b̥aràk “raw” vs. baràk “wet” [Jng. 1999 MS: 1-2], Goemay b̥arak “freshness, green, damp” [Sirlinger 1937: 12] = b̥arak “to be wet” [Hellwig 2000 MS: 3] (AS: Takács 2004: 11). Cf. EAAN I 59, #239.

72.2. CSem. *√br̥t “to flourish” [GT]: NSyr. birtā “une fleur”, mbertin “bourgeonner, fleurir”, cf. also Ar. barīṭ- “sorte de jacinthe” [GT].

● **73. Bidiya b̥irič** “idéo. évoquant qqch. qui pétille ou éclate” [AJ 1989: 62] may have similarly derived from a former *b̥irič due to the metathesis of glottalization usual in Chadic, which, in turn, may represent the reflex of either of the following roots:

73.1. It may be derived either from an AA *√br̥k with the palatalization of the respective glottal C₃, cf. SBrb./Twareg *√bry: Ahaggar bereyreṅ “produire un bruit de grelot”, Niger bereyreṅ “1. produire un bruit sec, 2. gronder (tonnerre)”, bereqq-et- “1. produire un bruit de grelot, 2. être pilé (grains de céréale)” (SBrb.: DRB 116: isolated in Brb.) vs. its root variety with a voiceless *Anlaut*: EWlmd.-Ayr f̥əreṅrəṅ “1. faire un bruit fracassant, 2. cliqueter (noix qui s’entrechoquent)” [PAM 2003: 171]. These onomatopoeic roots may eventually be connected with CAA *√br̥k “1. to flash (of lightning), 2. thunder” [GT] > Sem. *√br̥k “to flash (lightning)” → *baraḵ- “lightning (fulmine)” [Fronzaroli] = *barḵ- “Glanz, Blitz” [Eilers 1978: 129] (Sem.: GB 118-119; WUS #589; Fronzaroli 1965: 146, #3.20; Diakonoff 1970: 469; Leslau 1945: 149 etc.) || Eg. b3q [GT: -3- regular < both *-l- and *-r-] “hell, klar sein” (PT, Wb I 424-425) || Agaw *b̥ərḵ- > *m̥əbr̥ək- > *m̥ərḵ- “lightning” [Apl. 2006: 93] || ECu. *barḵ-/*birḵ- “lightning” [Sasse 1979: 49] || SCu.: Dahalo b̥iriḵina “lightning” [Ehret] = b̥iriḵḵina [EEN 1989: 34] = b̥iriḵinna [Tosco 1989 MS: 130] || NOM.: Mocha pariḵqi-yé “to lighten” [Leslau 1959: 45] = pariḵ “to lighten, flash” [Fleming] = pariḵqi- [Dlḡ.],

Shinasha (Dangela) *paṛk*-a “lightning, flash of light” [Fleming] | N Om.: Dizoid: Adikas & Jeba *ḥalg-umo* “heat lightning” [Fleming] | Mao of Bambeshi *pérēk-e* [SLLE] = *bérk-e* “lightning” [Fleming] = *berkε*, *pεr(ε)kε* “lightning” [Siebert & Wedekind apud Bender 2003: 356, #55: isolated in Mao], Mao-Diddesa *pyark-â* “lightning, flash (not thunder)” [Fleming] || S Om. **balak*- “lightning” [GT: -l- < *-r-]: Ari *bal’ak*-in “lightning” [Lamberti 1993: 43], Hamar-Banna *ḥalak* “flash of light, lightning, small flash” [Fleming], Dimé *belḥant* “lightning” [Siebert apud Bender 2003: 349, #55: isolated in Aroid] (Om.: Fleming 1974: 88, #5; 1976: 317; 2000 MS: 14-15) || C Ch.: (?) Musgu **√brh* [GT: -h < *-k?] “to thunder” [GT: Musgu *bára* “blitzen, wetterleuchten” (Krause) [Lukas 1941: 47], Munjuk-Puss *ḥirhi* (*ḥarha*) “1. tonner, gronder (tonnerre), 2. gronder (qqn.)” [Tourneux 1991: 79]. A well-known AA root otherwise.²³

73.2. Sem. **√brš* “to flash” [GT]: Akk. (jB) *barāšu* “aufleuchten (z.B. wie die Sterne mittags, wie Kupfer)” [AHW 106] = “to sparkle (like lightning), shine brightly (the stars at the mid-day rest, like copper), flash brightly (a man’s house)” [CAD b 107b] = “s’éclaircir” [DRS] | Ar. *barīš*- “shining, glistening” [Leslau after Nöldeke] || Geez *tabāraša* “to scintillate, flash, redden” [Leslau] = “funkeln” [AHW 106] = “scintiller” [DRS], Tigrinya *bāršāšā* “to shine, flash” [Leslau] etc. (Sem.: Leslau 1987: 107-108; DRS 86, *brš2*).

• **74. DM *ḥarg-** “kudu” [GT]: Bidiya *ḥargà* (f) “koudou, antilope rayée (ar. *nyalat*)” [AJ 1989: 62], Migama *ḥargú* (m), *ḥargá* (f), pl. *ḥargée* “antilope-cheval (koudou)” [JA 1992: 73] | Mubi *ḥirkí* (f), pl. *ḥiràayàk* “gazelle cobe defassa (ar. *nyalat*)” [Jng. 1990b MS: 7] < ECh. **ḥVrK-* “antilope” [GT] || Sem. *√bhr*: Amharic *bahor*, *bohar* “sorte de gazelle (antilope *redunca*)” [DRS 49, BHR6: isolated in Sem.].

• **75. DM *ḥarak** “to split in two pieces” [GT]: W DAngla *ḥarak* “idéophone de /éèrè/ ‘déchirer en plusieurs morceaux’ et /pírgé/ ‘déchirer, écorcher la peau d’un animal ou d’un fruit’” [Fédry 1971: 104], Bidiya *ḥaràkà* (f), pl. *ḥàràk* “bûche, bûchette” [AJ 1989: 62]. May be related to either of the following two distinct AA root families (detailed sub #75.1 vs. #75.2, resp.) with numerous root varieties:

75.1. Any connection to the root family fundamentally signifying “dividing”?

75.1.1. AA *√brk, cf. Eth.-Sem.: Amharic *bäräqqäqä* “fracasser” [DRS 87, BRQQ1: isolated in Sem.] and its kindred.

75.1.2. AA *√prk, cf. Sem.: Ar. *faraqa* I “1. (pour)fendre et séparer en deux” [BK II 582-583] and its kindred. Cf. EDE II 497 and EAAN I 90, #430.

75.1.3. AA *√prq “to (split) open” [GT]: MSA **√frh* [GT] > Jibbali *fērəḥ* “(egg) to split open”, *fótrəḥ* “to open one’s legs while lying down relaxing” [Johnstone 1981: 62], Mehri *fərōḥ* “(girl) to throw the legs wide apart in playing (which is punished by slap)” [Johnstone 1987: 102] || perhaps Eg. *ph3* [if < metathesis of **p3h* = **prh*] “spalten, öffnen” (MK,

²³ Cf. Greenberg 1963: 59; Dlg. 1966: 66; 1967a: 5-6, #1; 1983: 123; 1992 MS: 59, #55; IS 1971: 174; Rössler 1971: 317; Fleming 1974: 88, #5; Hodge 1976: 13, fn. 76; 1981a: 374, #36; 1981b: 406; 1988: 273; 1991: 100; Ehret 1980a: 321; 1987: 14; 1995: 86, #23; SISAJa I #110; Sasse 1981: 146; Mukarovskiy 1987: 240; Blazek 1989: 201 (ad IS 1971 l.c.); Bomhard 1990: 17-18; Vycichl 1990: 39; Lamberti 1993: 43; HSED #226, #231; Orel 1995: 147-148; Fleming 2000 MS: 14-15.

Wb I 542-3) ||l WCh.: Ngizim pářák “openness” [Schuh 1981: 132] || CCh.: Mofu-Gudur -vávárkw- “ouvrir (une fenêtre après la construction d’un mur)” [Barreteau 1988: 251] | (?) Logone paraka-ze “sich zerstreuen” [Lukas 1936: 115] || ECh.: Bidiya pírkàt “avoir les yeux écarquillés” [AJ 1989: 108]. Cf. EDE II 497 and EAAN I 90, #430.

75.1.4. NAA *√prk “to separate” [GT] > MSA *√frk “to get separated from” [GT] > i.a. Jibbali əftérék “to be dislocated (joint)” (Sem.: Huehnergard 1991: 693-694) ||l NBrb.: Shilh farkk “to separate” [Applegate 1958: 52] | Qabyle fferk-ekk “1. se fendiller, 2. s’ouvrir, 3. se désagréger, tomber en miettes, 4. s’écailer (peinture)” [Dallet 1982: 223] || EBrb.: Ghadames ferrek “séparer en deux” [Lanfry 1973: 97, #425].

75.2. Alternatively, shall we assume any connection to the root family fundamentally signifying “(separating) bark of tree” (described in EAAN I 91, #426)? Its root varieties are reflected by:

75.2.1. NAA *√prk “1. bark, husk, 2. shell” [GT]: Eg. p3q.t [< *√prk] “1. die Scherbe eines tönernen Topfes, 2. übertragen: als Bez. der Hirnschale des Menschen, 3. von der Schildkröten-schale” (Med., Westcar, Wb I 500, 1-3) = “1. shell (of turtle, skull) (Med.), 2. flake of stone (Westcar), 3. potsherd (Illahun, Ebers)” (FD 88) ||l NBrb.: Gurara, Tuat, Tidikelt i-fray (n te-zzal) “coquilles (d’oeufs)” [DRB 637] || SBrb.: EWlmd. e-fārāy, pl. a- ~ i-fārāy-ān “coquille” [PAM 1998: 66; 2003: 171]. Cf. EDE II 402. Of biconsonantal origin, cf. AA *√Pr “bark, skin” (cf. EAAN I 115, #557).

75.2.2. PBrb. *tV-fər̥k-it “écorce” [GT pace DRB 626-627] ||l ECh.: Sokoro furkía “Rinde” [Lukas 1937: 33] | Ubi p̄iriikà “écorce” [Alio 2004: 274, #273]. The Brb.-Sokoro match was first proposed by the Russian AA team of I.M. Diakonoff (HCVA I 26, #65).

75.2.3. PCh. *√brk ~ *√blk (?) [from **√brk?] “bark” [GT]: WCh.: Hausa ḥámḥáróóki “1. bark, 2. shell of egg, of groundnut, 3. scurf of scalp-disease, scab, bits of skin from desquamation” [Abraham 1962: 71] || CCh.: Mbara ḥólòkò (m) “écorce” [TSL 1986: 257] | PMasa *ḥulok “bark of tree” [GT]: Masa-Bongor ḥúlók-ḡá “pelure”, ḥúlók gúnā “écorce” [Jng. 1971/2 MS: 77, 79], Masa ḥulok [ḥúlókḡā] “l’écorce” [Caïtucoli 1983: 54], Gizey/Wina ḥúlók, Masa ḥúlók, Ham ḥólók, Musey ḥólók, Lew ḥólók, Marba ḥúlók “1. écorce, 2. coquille” [Ajello et al. 2001: 22] || ECh.: Kera ḥəlógí “Rinde (écorce)” [Ebert 1976 II: 34] = ḥəlóg dè kəpàn “bark” [Ebert apud JI 1994 II: 9].

75.2.4. Ch. *√p[k]r “bark” [GT]: WCh.: Pero pékúrò “husk” [Frj. 1985: 44] || CCh.: Bachama fò-fkādá [-d- < *-r-?] “bark” [Skinner] || ECh.: Kera fékré “harte Schale (z.B. bei Nüssen)” [Ebert 1976 II: 45] | Mokilko pákirtè “1. écorce, 2. ardoise (pour écrire), 3. morceau (poterie, calebasse)” [Jng. 1990a: 160].

• **76. Bdy.** ḥorok [GT: regular metathesis < *ḥorok] “prompt” [AJ 1989: 62] ||l HECu. *burk-ad- “to jump (intr.)” vs. *burk- “to spring (flow from spring)” [Hudson 1989: 86, 141, cf. Sasse 1982: 42] ||l SBrb. (Twareg): Nslm.-Wlmd. a-barāybarāy (var. to a-farāyfarāy) “s’agiter” [DRB 637, fry6: isolated in Brb.] ||l Sem.: Eth.-Sem.: perhaps Amh. bārrāqā “fondre sur” [DRS 86: compared with semantically too vague *comparanda*]²⁴ < PAA *√brk “to move swiftly” [GT]. An irregular set of further cognates, if we assume an irregular C₁- shift

²⁴ Listed by D. Cohen (in his DRS l.c.) among the reflexes of the Common Semitic word for “flash”.

of AA *b- > Sem. *p- and Eg. f- etc., or root varieties with a voiceless C₁- (AA *p-/*f-), and with a simultaneous metathesis of the C₂ with C₃, may well be found in the following AA roots:

76.1. NAA *√frk “to move swiftly” [GT] > Sem.: Ar. √frq^o I: farqa^a “1. courir à toutes jambes”, III: ʔifranqa^a “2. courir vite, 4. s’éloigner” [BK II 585-586] ||l OEg. (layer of the ancient *Volkssprache*) *fq₃,²⁵ only attested as a NEg. imper. j.fq₃ (formed by prothetic alif, i.e., O/NEg. j-): “out, quickly!” (CED 266 after Massart in MDAIK 15, 1957, 176, fn. 1) = “to move hastily” (DLE I 191) = “hastig bewegen, j.fq₃ (imp.): *raus, schnell” (GHWb 307) as well as Coptic (SAL/A₂) ϣωδϵ ~ βωδϵ, (B) ϣωδϵ “to leap, move hastily” (CD 625b) = “sich heftig bewegen, aufspringen, hüpfen, zucken, sich beeilen” (KHW 346-347) = “sauter, courir” (DELIC 282) ||l SBrb.: Nslm.-Wlmd. a-farāyfarāy (var. to a-barāybarāy) “s’agiter” [DRB 637, fry₆: isolated in Brb.]. HECu.-Eg.: EDE II 588.

76.2. NAA *√frk “to move away” [GT] > Sem.: perhaps PARabian *√frk “to leave” [GT]²⁶ > Ar. √frk III “abandonner, quitter qqn.” [BK II 585-586] ||l MSA: cf. esp., i.a., Jibbali əftérək “to be dislocated (joint)” [Johnstone 1981: 60] ||l SBrb.: EWlmd.-Ayr fəràkrək “1. bouger, 3. s’agiter, se mouvoir fortement (corps), 4. se mettre en route” [PAM 2003: 172; DRB 628, FRK15: isolated in Brb.]

● **77. Migama ɓòròòkílá (f), pl. ɓòròòkílée** “léopard” [JA 1992: 73]: marked as isolated in JI 1994 II: 223, but cf. CCh.: Nzangi mbārōga “lion” [Mouchet in JI 1994 II: 227]. Perhaps Migama ɓ- < *mb-? A direct cognacy with CCh.: Gidar pālgáám [Strümpell] = bālgam [Mouchet] “leopard” (Gidar: JI 1994 II: 223 l.c.) is hardly conceivable at this moment regarding the non-implosive/glottalized C₁-. One wonders if one should ponder a cognacy with homophonous CCh.: Bata ɓòlōkə “hyène” [Mouchet in JI 1994 II: 205] ||l NŌm.: Gofa babariḳḳe [Moreno], Kullo babarkia [Fleming] = babargia [Alemayehu] “hyena” (NWŌmeto: Bender 2003: 319, #48) ||l NBrb.: Qabyle a-barey “renard” | Shilh baryen “renard” (NBrb.: DRB 116, bry₃ and bryn₁, resp.). Of biradical origin in both cases?²⁷

● **78. DM *ɓer-n-V** (ext. *-n-) “slave” [GT]: WDangla ɓèrnè “esclave” [Fédry 1971: 106], EDangla ɓèrrē [ɓèrrē] (m) “l’esclave, l’enfant abandonné que l’on prende en charge” [DM 1973: 58], Korlongo ɓerre “esclave” [Fédry], Bidiya ɓèrno (m), ɓèrna (f), pl. ɓèrna “esclave”, ɓèrnèw (ɓèrnèwí, ɓèrnèwɛŋ), pl. ɓèrnèw (ɓèrnèwí, ɓèrnèwɛŋ) “asservir” [AJ 1989: 62] | PMubi-Toram *ɓēr- “slave” [GT]: Mubi ɓèèr (m), pl. ɓèrè “Sklave” [Lukas 1937: 180] = ɓèr (m), pl. ɓòorúr “ésclave” [Jng. 1990b MS: 6], Masmaje ɓeerrungo “esclave” [Alio 2004: 280, #31], Birgit ɓèrnà (m), pl. ɓèrnéy “esclave” [Jng. 2004: 351], Kofa ɓèrró (m), ɓèrré (f), pl. ɓèrrán “slave” [Jng. 1977 MS: 15, #388] < ECh. *ɓēr- “slave” [GT] ||l WCh.: Hausa bárà

²⁵ W. Westendorf (KHW l.c.) and W. Vycichl (DELIC 282), however, explained it from NEg. fq₃ “to tear out”, which may equally turn out to be correct. In this case, NEg. fq₃ might have probably originally come from the old (OK?) *Volkssprache* slang just like Hungarian tép- “1. (lit.) to tear, 2. (slang) run”.

²⁶ Its semantically far-fetched Semitic cognacy was examined by J. Huehnergard (1991: 693-694).

²⁷ Cf. AA *√br “hyena (?)” [GT] described in EAAN I 51, #197 as well as AA *√br “lion” [GT] in EDE II 22. Cf. perhaps also the common biradical root shared Ar. hawbar- “guépard” [DRS 361, HBR7: isolated in Sem.], Ar. habrağ- “taureau”, cf. hibriğ- “gros et corpulent” [DRS 362, HBRG3-4: isolated in Sem.]?

“servant” [Abr. 1962: 77] || CCh.: Mandara bara “work, domestic service” [Skinner] || NAgaw: Qwara bārā & Hamir bārā “Knecht” [Reinisch 1885: 43] || LECu.: Somali-Jabarti bāra “slave” [Reinisch 1904: 55] || Eth.-Sem.: probably no reflex.²⁸ An areal *Wanderwort*? Cf. also Mande bara “work, domestic service” [Skinner] and Gbaya “eslave” [Skinner]. For affiliating some of these lexical data with both (!) Eg. b3k²⁹ and wb3³⁰ (neither correct) see Skinner 1996: 16³¹ contra EDE II 97 s.v. Eg. b3k, #9.

● **79. Bidiya ɸirɸiríny** “idéo. de tourner dans l’air” [AJ 1989: 62] | MT *ɸir- ~ *bir- “to fly” [GT]: Mubi bír (bèr, bírrà) “voler (oiseau)” [Jng. 1990b MS: 5], Masmaje ɸireeti “concourir” [Alio 2004: 280, #32], Birgit bèri (bèrá, bèrò) “voler” [Jng. 2004: 351] < ECh. *ɸir- “to fly” [GT] || Sem. *√ɸbr “to fly up” [GT]: Akk. abru “Flügel, Flosse” [AHW 7] || Ug. ɸbr “fliegen (?)” [WUS], OHbr. √ɸbr hifil “sich emporschwingen (v. Habicht)” [GB] (Sem.: GB 7; DRS 5; WUS #33). Eventually related PAA root varieties:

79.1. PAA *√br “to jump” [GT]: Sem.: MSA *√brw [Johnstone]: Jibbali ebré “to jump high and succeed, etc.”, Mehri həbrō “i.a. to jump (from x to y)” (MSA: Johnstone 1981: 28; 1987: 54) || ES *√br “to fly” [GT] (borrowed from Cu.): Geez barra “to fly, run fast” [Leslau], Amh. bārārā “to fly, run away” [Leslau] (ES-Cu.: Leslau 1987: 107) – and/or ES *√bry: Geez baraya “to bolt and flee (mount)” [Leslau], Amh. bārāyyā “to flee” [Leslau] = “s’enfuir, épouvanté” [DRS 82] (ES: Leslau 1987: 108) || (???) Eg. b3b3 [regular < *√brbr] “Verbum in Wortspiel mit der Körnerfrucht b3b3.t (statt des alten nb3b3)” (NK, Wb I 418, 13) = “to tremble, flutter (younger var. of PT nb3b3)” (Ward 1978: 28) = “sauter, tressauter (autre forme du nb3b3)” (AL 78.1228) = “*zittern, sich hin und her bewegen, aufspringen” (GHWb 240) || Bed. bir ~ bír “to fly” [Reinisch 1895: 50] || NAgaw: Hamir bir- “fliegen” [Reinisch 1884: 349] | SAagaw: Awngi berāru “to fly” [Leslau] = berer-əŋ (with inf. suffix) “to fly” [Hetzron > HSED] = bir- (sic) “to fly” [HCVA] || LECu.: Saho -ibrir- “to fly” [Sasse] | Oromo barar- “to fly” [Sasse, Lamberti] | HECu. *barar- “to fly” [Hudson 1989: 406] =

²⁸ Note that Gurage barya, Amh. barya “slave” comes from the name of the ethnic group Barya, a people in NW Ethiopia speaking East Sudanic (cf. Apl. 1977: 53/95; Leslau 1979 III: 157).

²⁹ The origin of Eg. b3k “Diener” (OK, Wb I 429-430) = “servant” (FD 79) = “1. Diener, Untergebener, 2. Untertan, 3. Sklave” (GHWb 243) is disputed (for a thorough discussion of the alternatives see EDE II 95-97). Most likely appears, however, its affiliation with the widespread Chadic areal word attested, e.g., in WCh.: PSBauchi *ɸiyak “slave” [Stolbova] || CCh.: PMatakam (Mafa-Mada) *beke “slave” [GT] | PMusgu *beke “slave” [GT] | PMasa *bʷek “slave” [GT] as suggested in OS 1989: 132; 1992: 185; HSED #273; Orel 1995: 152, #2; Takács 1999b: 107, #30; 1999c: 348.

³⁰ The ultimate deverbal etymology of Eg. wb3 “Diener, Aufwärter (N.R. auch als priesterlicher Titel)” (MK, Wb I 292, 1-2) = “a household servant connected with the preparation and serving of food” (Gardiner apud Ward) = “butler” (FD) < wb3 “(einen Trank) ausschenken” (NE Mag., Wb I 291, 17) seems even more obscure. The only other author to deal with the external derivation of this title to my mind, W.A. Ward (1978: 57 and 91) was disposed to render this function from the primary sense “one who carries food and drink” and to derive it from an alleged common Semito-Egyptian *√wbl “to bring, carry”.

³¹ N. Skinner’s (1996: 16) equation of WCh.: Hausa bārā “servant” [Abr. 1962: 77] and Mande bara “work, domestic service” etc. (as listed above) with Eg. b3k “Diener” (OK, Wb I 429-430) and even Hausa bara “begging” (? < Kanuri bara “to seek, hunt” etc. is untenable in this form. This theory offers no explanation for the function Eg. -k in Egyptian, which seems to be part of the root. Let alone for the meaning “to seek, hunt”, which certainly represents an entirely distinct root family, cf. EDE II 263-264 s.v. Dem. brbr.

*burr-/*birr- [GT] (ECu.: Sasse 1982: 44; Cu.: LS 1997: 253-354) || WCh.: Hausa bírááři “1. jumping, 2. surging forward to get at sg.”, cf. bürbürnífíyáá “gambolling with joy” [Abr. 1962: 102, 121] || CCh.: Daba mbir “1. voler, 2. s’envoler, sauter” [Mouchet 1966: 136] = mbîr “to jump” [Lienhard-Gieger], Kola ...mbîr... “to jump” [Schubert] | Musgoy mbir “(s’en)voler” [Mouchet] | Musgu bára “to jump” bára “(s’en)voler” [Mouchet 1950: 30], Vulum bìrî “voler (oiseau)” [Tourneux 1978a: 288, cf. Tourneux 1978b: 93] || ECh.: Kwang-Mobu béré “sauter” [Jng. apud Lenssen 1984: 63], Kwang-Ngam bré “voler (pour un oiseau)” [Jng. apud Lenssen 1984: 63] | DM *ber- “to spring” [GT] > EDangla béré “sauter en dansant” [Dbr.-Mnt. 1973: 42] = béré “(beim Tanzen) springen” [Ebobbisse 1979: 127; 1987: 94], Bidiya ber (berí, beren) “1. apparaître (lune), 2. sauter”, pl. berèw (berèwí, berèweŋ) “sautiller, danser”, berèwò (f) “danse” [AJ 1989: 58] | Mubi bír “voler (oiseau)” [Jng. 1990b MS: 5], Birgit bèrî “voler” [Jng. 1973 MS] (Ch.: JI 1994 II: 211). For the AA comparison see also Mukarovsky 1966: 19, #64; 1987: 226; SISAJa I, #112; HCVA II #119; HSED #219 & #291; Takács 1999a: 44; EDE II 65.

79.2. AA *√pr (var. *√p̄hr) “to run, flee” [GT]: Eg. p̄hr [infix -h-?] “laufen” (OK, Wb I 541, 2-13) = “to run” (XVIII., FD 92) = “to be swift, travel swiftly, run” (DLE I 180) || Bed. fōr “fliehen” [Reinisch 1895: 81] = for “to flee” [Roper 1928: 181] || CCh.: Masa p̄rā [-ii- < *-iH-?] “fuir (en courant)” [Cañtucoli 1978: 73] || ECh.: Mokilko p̄rípírā (f) “bon coureur” [Jng. 1990a: 162]. Cf. EDE II 492; EAAN I 89, #420.

● **80. WDangla b̄árùr** “en louchant” [Fédry 1971: 105] may be akin to Sem. *√^cbr “to cross” [GT]: i.a. Hbr. √^cbr qal “1. to pull along, go on one’s way, move through, 2. pass over s’one, 3. pass by (°al), 4. pass over, pass by, 5. go over, pass over, 6. changes of position: to go on, go out over, go through, move through, pass on to, 7. overstep, contravene”, piel “1. (arch. tech. term) to draw (chains) across (a room), 2. (of a hull) allow the semen to spread over, mount”, hifil “1. to allow to pass over (wind), 2. allow to stride over, bring over, 3. (acc. and °al) allow to pass (by), lead by, lead through, allow to go under, allow to overtake, 4. (with b̄a-) allow to pass through, (with acc. of person) shout beyond s’one, 5. allow to pass, overlook (guilt), allow an opportunity to pass, 6. allow property to pass to others (with acc.), 7. present offerings of children, 8. (with min-) take away from, remove sin, put away, bring down, turn away, keep away from, remove (clothes)” [KB 779-780] | Ar. °abara I “1. passer, traverser, franchir (un fleuve, un gué), passer à travers qqch., traverser, p.ex., un pont” [BK II 152] || MSA: Jibbali √^cbr > °c:r “to cross, be/go far away” [Johnstone 1981: 6], Mehri √^cbr > °ābōr “to cross” [Johnstone 1987: 10], Soqotri √^cbr > °áber “1. passer, 2. transgresser, violer un serment” [Leslau 1938: 295].

80.1. Less likely is an eventual cognacy with a fully hypothetical, so far uncharted AA **√hbr (???) of dubious existence, whose variety with C₃ *-l might, at least in theory, be ES: Tigre √hblbl > habālbälā “rouler des yeux” [DRS 360, HBLBL1: isolated in Sem.].

● **81. WDangla b̄oroy** “und” [Fédry 1971: 107]: origin puzzling at this point. But highly noteworthy is CCh.: PMasa *b̄ay “and” [GT]: Lame b̄ái – b̄ài (connectif) “et, puis, mais (porte la marque aspectuelle du verbe qui suit, ton haut pour l’inacc., ton bas pour l’acc.)”

[Sachnine 1982: 261], Zime-Dari ḃāy “et, mais, puis” [Cooper 1984: 3], albeit the *lautgeschichtliche* background of such a connection has not yet been cleared.

Dangla-Migama *ḃ- + *-l-

● **82. Bidiya ḃállà (f), pl. ḃàlál** “flèche”, cf. also ḃaalò ~ ḃàlò (m), pl. ḃaalè ~ ḃalè “arc” [AJ 1989: 61] | MT *ḃale “arrow” [GT]: Kofa ḃalé (f), pl. ḃàlàn “arrow” [Jng. 1977 MS: 7, #138], Toram ḃele “flèche” [Alio 2004: 253, #74] | Sarwa ḃálāw, Gadang ḃālū “lance (de guerre)” (Somray gr.: JI 1993 MS: 8, #144). The history of ECh. *ḃal- “1. arrow, 2. lance” [GT] underlying these forms has not yet been comprehensively mapped in all its details: this is what an attempt is made for below. Note that, in principle, Ch. *ḃ is regular < a combination of *^ʕ/^h/*^ʔ/^h + *b as radicals or, alternatively, may also derive from a prenasalized *^mb-.

82.1. The Chadic word exists with a C₂ *-r also, which may either be due to a reason lying in the historical phonology (not yet cleared) or cf. CCh.: Munjuk-Puss ḃre (m) “pointe de flèche” [Trn. 1991: 79] | Masa *ḃaraw ~ *ḃur “arrow-bow” [GT]: Masa-Bongor ḃàràù-ná “arc + carquois + flèche” [Jng. 1971/2 MS: 81], Gizey/Wina gú ḃùr, Masa ḃàràw, Ham ḃòròò, Musey gúmbùrà “arc” [Ajello et al. 2001: 6], cf. Gizey/Wina zìy ḃùr, Masa zì ḃàràw, Ham zì ḃòròò “carquois” (lit. “house of arrow”, cf. PMasa *ziy “house”) [Ajello et al. 2001: 11], Gizey/Wina ḃùr “flèche” [Ajello et al. 2001: 26].

82.2. A deverbal origin of the above term for “arrow” is possible, cf. WCh.: Hausa ḃillà “to throw” [Stolbova 1996: 27] | Ron *ḃol “schießen” [GT]: Fyer ḃol, Bokkos ḃol, Daffo-Butura ḃol (Ron: Jng. 1968: 12, #143; 1970: 392) || CCh.: Daba ḃàl “to throw (an arrow)” [Barreteau 1995: 225].

82.3. O. V. Stolbova (1996: 27) preferred equating this Chadic verbal root (presented right above sub #80.2.) with some reflexes of WCh. *[√]mb “to throw (a weapon like arrow)” [GT], cf. WCh.: Kulere ḃil “werfen (Stock usw.), bewerfen” [Jng. 1970: 351] = “to throw” [Newman 1977: 186] | Bole ḃumḃul “wegschleudern” [Lukas 1971: 133] || CCh.: Zelgwa mbál “to throw an arrow” [Brt. 1995: 202]. V. Orel and O. Stolbova (1990: 80, #51) rightly compared Bole ḃumḃul with Ar. nabala “jeter, lancer des traits, des dards”, nabl-at- “une flèche” [BK II 1187-8].

82.4. Elsewhere, V. Orel & O. Stolbova (HSED #1768) combined Bole ḃumḃul less convincingly with Ar. mi^ʕbal-at- and Eg. m^ʕb3 (a well-known isogloss, see below)³² < AA *mi-^ʕVbal- “arrow, spear”, which is untenable in this direct way, since Ch. *^mb- cannot be immediately equated with Eg.-Sem. *[√]ʕb, cf. Eg. m^ʕb3 “Art Speer” (PT, Wb II 47, 1-3, cf. RdE 15, 1963: 60, n. 1) = “harpoon” (FD 105) = “lance, spear, also harpoon” (Camino 1972: 219, cf. WD I 85) = “Harpune, (Fisch)Speer” (GHWb 327; ÄWb I 516) || CSem.: Ar. mi^ʕbal-at- “a broad and long arrow-head or an iron (iron-head) made broad, an arrow

³² Literature for this Eg.-Sem. match: Ember 1926: 5, #1; 1930 = ESS, §3.c.3, §5.a.19; Vycichl 1934: 55; 1958: 372; 1983 = DELC, 108; Calice 1936 = GÄSW, #623; Cohen 1947: #57; HSED #1768.

having a broad head” [Lane 1942] = “1. fer de flèche long et large, 2. flèche au fer long et large” [BK II 159] = mi^ʕbal-at- “a kind of arrow” [Ember after Nöldeke 1910: 55] = mi^ʕbal-at- “arrow with a thick head” [Albright 1919: 179, #11] = mi^ʕbal-at- “large arrow point” vs. mi^ʕbal- “cutting tool” [Fronzaroli 1977: 164] = mi^ʕbal-at- “arrow” [Vycichl in DELC 108] = “arrowhead” [Leslau] || ES: Geez ma^ʕbal “sharp instrument, arrow” [Ember] = mab^ʕal ~ mâ^(ʕ)bal “instrument, utensil, weapon” [Albright 1919: 179, #11] = ma^ʕbal ~ mab^ʕal “trait, javelot” [Cohen] = mā^ʕbal “telum, jaculum” [Vycichl] = ma^ʕbäl “arrow” [Fronzaroli 1977: 164] = mā^ʕəbal ~ mā^ʕəbalt “1. tool, instrument, fittings, 2. arrow, weapon, spear” [Leslau 1987: 54]. The Egypto-Semitic stem *mV-ʕbVI- was apparently a *nomen instrumenti* formation (cf. Grapow 1914: 23), but the basic meaning of the underlying Eg.-Sem. *√ʕbl is obscure in both branches (no trace in Egyptian and highly disputed speculative hypotheses in Semitic),³³ or, at least, such an expectable verbal root does not appear in the logically expectable form, such as a nowhere attested NAA **√ʕbl “to shoot” (or sim.) [GT], which is itself a revealing circumstance suggesting that pre-Eg.-Sem. *mV-ʕbVI- had already been in use as a ready-made (pre-Neolithic, early PAA?) technical term by the time of a secondary Egypto-Semitic cohabitation the Nile valley Neolithic period (5th-4th mill. BC) when the original verbal root in both branches was no longer in use or, at least, was not the most frequented synonymous variety in both branches. Highly suspicious in this context is the trace of a possible PAA *√ʕbl, instead of NAA (where both Semitic and Egyptian belong) in SAA, namely CCh.: Munjuk-Puss ḫili (ḫəla) “1. percer, 2. enfoncer (une pointe)” [Tourneux 1991: 79].

82.5. Moreover, the weapon name can be pointed out, again from Chadic, in its simplest biradical root form (i.e., void of either C₁- *ʕ- or prenasalization) also, cf. WCh.: Tangale bal “spear with a long blade” [Jng. 1991: 70] || CCh.: Masa *bir </~/> *bil “couteau de jet” [GT]: Masa bīl [bīlīlā] “1. le couteau de jet, 2. le courant du fleuve (métaph.)” [Caïtuoli

³³ Most suggestive is Ar. ʕabala “to cut (off) to extirpate it” or ʕabula “to be(come) large, big, bulky, thick” [Lane 1941]. Already Th. Nöldeke (1910: 55) separated Geez mā^ʕəbal “arrow” from Geez mab^ʕal “instrument”. Following him, A. Ember (1926: 5, #1) treated Ar. mi^ʕbal-at- “a kind of arrow” as a borrowing from Geez mā^ʕəbal “arrow”. W. F. Albright (1919: 179, #11), followed later by W. Leslau (1987: 84), combined the Geez and Ar. noun with Akk. (nA, jB) bēlu “etwa: Waffe” [AHW 120], which is uncertain. Following Dillmann, Albright derived Ar. mi^ʕbal-at- “arrow with a thick head” from ʕabila “to be thick”. P. Fronzaroli (1977: 160-4), in turn, saw the source of Geez ma^ʕbäl “arrow” and Ar. mi^ʕbal- “cutting tool”, mi^ʕbal-at- “large arrow point” in Sem. *√ʕbl > Ar. ʕabala “to cut”, ʕablā? “white rock, narrow strip in the blackness of the earth, the stones of which are white”, ?a^ʕbal- “white stone or mountain of which the stones are white” [Fronzaroli], Dathina ʕibāl (pl.) “heaps of corn” [Fronzaroli] || MSA: Soqotri pl. ʕébbaléten “sharp stones”, cf. máʕbher “rock” [Leslau 1938: 293, 296], Mehri ?aybēl [Fronzaroli] = ?áybəl “flint(stone)” [Johnstone 1987: 10] | Geez ʕubāl “hill” [Leslau 1987: 54]. Fronzaroli set up two P-Semitic etymons, namely *ʕabl-at- “a white stone” vs. *ʕibal- “white stones” (supposed source of the name of Ebla), both carrying the basic meaning “a rock of clear, shining appearance similar to flint but coarse-grained, prob. a variety of granite”. In Fronzaroli’s view, the occasional use of this rock as flintstone explains the Mehri and Soqotri data, while the Ar. reflexes suggest the stone *ʕabl- was used for making baldes and points. Ar. ʕabala I “10. garnir une flèche d’un fer long et large” [BK II 158]. The authors of SISAJa I #96 = Diakonoff team (1981) considered Geez ma^ʕbal to be the metathesis of Geez mab^ʕal (lit. “working tool”) explained from Sem. *√pʕl ~ *√bʕl “make, do”. W. Leslau (1987: 54, 84) assumed in Geez the following scenarios: (1) Geez mā^ʕəbal(t) derives directly from Geez √ʕbl II ʕabbala “to make, do” (which Leslau linked to Sem. *√ʕml “to work”). (2) Geez mā^ʕəbal(t) is met. of Geez mab^ʕal ~ mab^ʕəl “iron tool, axe”, cognate with Ug. √bʕl “to make, manufacture, work” [DUL 203] || E/OSA √bʕl “to work, excavate bedrock (travailler, creuser le soubassement rocheux)” [SD 26].

1983: 50], Masa-Bongor bɪl-là “couteau de jet” [Jng. 1971/2 MS: 81], Lame bərə “couteau de jet” [Sachnine 1982: 283], Zime-Dari pərə “couteau de jet” [Cooper 1984: 21]. Accordingly, the underlying verbal root has become known, with no surprise, equally from Chadic, cf. WCh.: Kupto bülélé “werfen, schleudern” [Leger 1992: 18], Geruma bëel-áalà “to throw” [Schuh 1978: 118] || CCh.: Glavda bal “to throw, cast” [Rapp & Benzing 1968: 13] | Mada bál “to shoot” [Rossing 1978: 324, #635] | Puss bili “lancer, jeter (une seule chose)” [Tourneux 1991: 79], perhaps Mbara vlà [vl- < *bl-?] “jeter”, vùl “lancer, jeter” [TSL 1986: 280]. Note that these Chadic cognates are to be distinguished from Ch. *bal- “(to shoot an) arrow” [Stolbova] (discussed above), which Stolbova (CLD I 35) erroneously equated with Ar. nabala.

● **83. EDangla ɓàlè** “couper (pour faire une lanière)” [DM 1973: 57] || Sem.: Ar. ʿabala I “5. couper, retrancher” [BK II 158]. May be eventually akin to the root family specified in the above entry. The underlying biradical PAA root appears in PAA *√bl “to divide, break” [GT]: (?) Eg. b3b3 [if < *√blbl] “to distribute, pour out” (NEg. BD 64, Ward 1978: 64, #182, 94-95) = distribuer, répartir” (AL 78.1230) = “*verteilen” (GHWb 241) || NAgaw: Bilin bal-in “teilen” [Reinisch l.c. infra] | Sagaw: Awngi bell-et- “to chop up” [Ehret after Hetzron 1969: 96] || LECu.: (?) Saho & Afar bal [-l correct?]³⁴ “teilen” [Reinisch 1886: 828] | HECu.: Sidamo bōl- “to separate grain (maize)” [Hudson 1989: 354: isolated in HECu.] || SCu.: (?) Qwadza bel-at- [-l- < *-r- poss.] “to be broken” [Ehret 1980b] | Dahalo ɓalal-e [ɓ- < *b-] “circumcisor” [EEN 1989: 33] (Cu.: Ehret 1987: 15, #7) || WCh.: Tangale ɓɛlɪ “1. to break (stalk, stick), 2. pinch” [Jng. 1991: 71] = bel “to be broken (ломаться)” [Stolbova] || CCh.: (?) Bura bili [-l- < *-r- also poss.] “to break (wood etc.)” [BED 1953: 21] | Daba bəl- “frapper de la hache” [Mouchet 1966: 111] | Uldeme vâl-áy “partager, distribuer” [Sachnine 1986: 135] | Puss bili “2. couper (à la hache)” [Tourneux 1991: 77], Vulum bilí “couper (à la hache par ex.), abattre” [Tourneux 1978: 288] || ECh.: Migama bòolâ “hâche” [JA 1992: 71]. Cf. EDE II 67; EAAN I 63, #268.

● **84. PDangla *ɓal-** “to moisten” [GT]: WDangla ɓàllè “faire une aspersion rituelle”, cf. also ɓàlɓilè “mettre un liquide par dessus un solide, vg. huile sur riz ou boisson sur l’estomac après avoir mangé” [Fédry 1971: 105], EDangla ɓàlliyè “répandre une libation de réconciliation (pour réconcilier deux femmes brouillées en répandant de la farine mouillée ...)” [DM 1973: 57], Bidiya ɓàlɓàalo (m) “mets fait de petit mil mouillé puis chauffé légèrement” [AJ 1989: 61] || Sem. *√ɓl [DRS]: Akk. abl-ūt-u “profusion de plantes” [DRS, but otherwise in AHW 6b and CAD a 54] || Can. *ʔābil > PHbr. *ʔōbēl > OT Hbr. ʔābēl II “watercourse, brook” vs. ʔubāl “watercourse, canal” [KB 7] = ʔābel “prairie (?), ruisseau (?)” [DRS] | Ar. ʔabal- “frais, vert, récent et humide (herbe et fourrage)”, ʔabila “manger du fourrage vert qui en même temps tient lieu d’eau (se dit des chameaux)” [BK I 5] = ʔabila “to be content or satisfied with green pastures so as to be in no need of water”, ʔubul- “the hilf-at-

³⁴ L. Reinisch (1886: 828-829) distinguished this from Afar ba! “abtrennen, spalten, teilen” [Reinisch] = ba! “dividere, separare, spartire” [Colizza 1887: 111] = bax-(i)se [baɖ-(i)se] “to divide, separate, share” [PH 1985: 65]. Two distinct roots?

of (dry) herbage growing after a year, upon which camels, or the like, fatten” [Lane 7-8] = ʔabila “recevoir la pluie (to catch the rain), être riche”, ʔibil- “nuages chargés de pluie (?) (rain-filled clouds?)” [DAFA 15-16, so also DRS] (Sem.: DRS 3). The ECh.-Sem. isogloss (with a C₁- as *ʔ-, whose compensatory loss has resulted in *ḃ- in Chadic) is part of a large biradical root family:

84.1. NAA *√bl “1. to moisten” [GT]: Sem.: Akk. (bab., nA, aAk²) balālu “besprengen, vermischen, legieren” [AHW] || Hbr. √bll qal “1. einrühren mit Öl, 2. verwirren (die Sprache)” [GB] = “1. to moisten (with oil), 2. mix up, confound (languages)” [KB 134] | Aram. √bll “vermischen, befeuchten” [AHW] | OSA (Sabaic) √bll “bewässern” [GB] = √bll “irriguer” [DRS] = √bll > blIm (adj.) “wet, moist” [Biella 1982: 44], Ar. √bll I: balla “mouiller, tremper, humecter, imbiber qqch., apporter l’humidité (la bruine)” [BK I 155; DAFA = Blachère 1967 I: 823-824]³⁵ | MSA: Jibbali eblél “to give (animals) their fill of water” [Johnstone 1981: 25], Mehri ablél “to milk partially” [Johnstone 1987: 48] || ES: Geez balla “to moisten, wet, immerse in a liquid”, bəlul “humid, wet, moistened, dampened” [Leslau] (Sem.: GB 101; AHW 97; DRS 67; Zaborski 1971: 56, #15; Fronzaroli 1971: 635, #7.50; Leslau 1987: 96) || Eg. b3j “feucht sein (vom Schweiß)” (Med., Wb I 417, 11-12; GHWb 239) = “damp” (FD 77) = “to be damp, moist, clammy” (Ward 1975: 63, #1; 1978: 139-140) || SBrb.: Hgr. belulu “être très liquide (un mélange d’un liquide et d’une substance en poudre ou en petits fragments)” [Foucauld 1951-2: 65], EWlmd.-Ayr bələwləw “être très liquide (mélange d’un liquide et d’une substance en poudre)” [PAM 1998: 10]. This AA root is present with a nasal root ext. in ECh. *ba₂lāny- “wet” [GT]: Migama bálàanyí (m) “humidité” [JA 1992: 68] | Mubi bəlèny (m) “déchets de chèvres (semi-liquides)” [Jng. 1990b MS: 5]. The Sem.-Eg. equation has been well known.³⁶ Cf. also EDE II 45; EAAN I 64 #272.

84.2. CAA *√bl ~ *√pl “2. to wash” [GT]: Eg. b3j “Art Gerät zum Besprengen der Füße” (CT, NK, Wb I 417, 13) = “foot-ewer” (BM stela 101, FD 77) = “Fußwaschkrug, Wasserkrug (für die Fußwaschung)” (GHWb 239-240) || SCu.: Qwadza bal- “to wash, clean” [Ehret 1980: 134, §I.A.10]³⁷ || WCh. *Pal- “to wash” [GT]: AS *pal(aŋ) > *pəlaŋ “to rinse” [GT: AS *p- < Ch. *b- reg.]: Angas palang ~ palng “to rinse” [Gochal 1994: 41], Sura pəlaŋ “auswaschen” [Jng. 1963: 79], Goemay palang “to rinse” [Sirlinger 1937: 172], Kofyar pal “to wash brewing grain” [Netting 1967: 31] (AS: Takács 2004: 279) | Tangale pālò [p- < *b-poss.] “bath” [Kidda 1985: 209, #314], cf. Bole búlè “ewer” [Bross-Ibriszimow 1993: 95] || CCh.: Mada bal “se laver” [Mouchet] = bal [Hoffmann] = bálá “to wash” [Rossing] = ábálá “se laver, baigner, laver” [Barreteau & Brunet 2000: 68], Muktele pàláy “to wash” [Rossing], Moloko bal “to wash” [Bow 1997: 23] || ECh. *√pl “to wash” [GT]: Kwang pèlè (body) [Jng.], Modgel péle [Hoffmann] | Kabalay pəl (things) [Caprile] = polo-kozu (compound) [Hoffmann], Lele píl “(se) laver” [WP 1982: 76] = píl [Gowers], Nancere pele [Hoffmann],

³⁵ Following the tradition of Sem. lexicography, also D. Cohen et al. (DRS l.c.) classified this root together with the reflexes of Sem. *√bll “to mix”. Shall we distinguish two ultimately distinct, secondarily contaminated roots?

³⁶ Cf. GÄSW #175 (after p.c. by W. Vycichl); Vergote 1945: 130, §I.d.9; Dolgopol’skij 1966: 54; IS 1966: 15, 18; 1971: #20 (including Twareg too); Ward 1975: 63, #1, fn. 29; 1978: 89-91; Hodge 1978: 2, #10; 1981: 404, 411; 1988: 273 (with a PCh. root); Rössler 1981: 385. Cf. also MM 1983: 181 (Sem.-Hgr.); HSED #334 (Hgr.-Orm.).

³⁷ Ehret 1980a: 134, §I.A.10: < SCu. *baš- “to be stripped bare or clean”.

Gabri pelē [Hoffmann], Dormo pelenga [Hoffmann] | Tumak pāl (things) [Caprile] (Ch.: Hoffmann 1971: 11; JI 1994 II: 339). For Eg.-Bole cf. EDE II 44. Ultimately related to AA *ṽbl “1. to moisten” (above)? See also EAAN I 64, #272 and #273.

• **85. Migama ḃéeló (ḃéélé, ḃélaa)** “briller” [JA 1992: 73] || WCh.: PAngas *ḃel “clear (of weather)” [Takács 2004: 31]; Angas bēl ~ bāl “clear, daylight” [Foulkes 1915: 148] = ḃēl “1. to (be) clear (of weather)”, ḃèl “condition of being (of weather) clear” [Gochal 1994: 48] || Eg. ṽb3 (reg. < *ṽṽbl) “1. (XVIII.) funkeln, leuchten, 2. (GR) etwas erleuchten” (Wb I 177, 12-13),³⁸ ṽb3 “Licht” (GR, Wb I 177, 14) || Sem.: Ar. ṽabila I “2. devenir blanc, blanchir”, IV “1. id.” [BK II 158] < PAA *ṽṽbl “to light, shine” [GT]. Of biconsonantal origin (sine C₁- root ext. *ṽ-?), cf. below.

85.1. A remotely related root variety appears in PAA *ṽPI (*p- or *f-) “to shine” [GT]: Sem.: Ar. full- “étincelle, éclat d’un tison embrasé” [BK II 626] || NBrb.: Tamazight ṽfly > se-flily, sse-fliliy “briller (subitement), étinceler”, a-se-flily “lumière qui brille, signal lumineux” [Taïfi 1991: 115] | Qabyle ta-fuli “1. insolation, 2. attaque”, cf. flali, filili “1. surgir, paraître, 2. briller subitement” [Dallet 1982: 203, 208; DRB 564: isolated in Brb.!] || SBrb.: Ahaggar ṽflw > felww-et “scintiller”, felufelu “miroiter (réfléchir la lumière en produisant des reflets tremblants; se dit, p. ex., d’un miroir, de l’eau, du mirage, de métal poli, d’une étoffe satinée, d’un objet verni, d’une surface luisante d’étoffe, de peau, des cheveux ou de la peau d’une p. quand ils sont luisants, du poil des cheveux quand il est luisant)” [Foucauld 1951-2: 326] || LECu.: Afar ṽflk [root ext. -k] > falālak-o “flash (éclair)”, falālak-ite “to flash e.g. lightning (éclairer, lancer des éclaires)” [Parker & Hayward 1985: 99-100] || WCh.: Hausa fāl “shining brightly”, fālālníyáá (Sokoto) “1. brightness (of lamp), 2. sheen, gloss”, fālàù “shining brightly” [Abr. 1962: 246]. See EAAN I 117, #568.

85.2. PAA *ṽḃṽr “to shine” (or similar) [GT]: Sem.: Ug. bṽr D “1. encender, 2. quemar, 3. chamuscar, Š “iluminar” [DLU I 103] < Sem. *ṽḃṽr [infix *-ṽ-?] “1. to light fire, 2. heat” [GT] (see #68 above) || CCh.: Gude ḃərə “to shine, be bright” [Hoskison 1983: 165]. Ultimately related to PAA *ṽḃṽr “to heat” [GT].

• **86. WDangla ḃàlḃilè** “mettre un liquide par dessus un solide, vg. huile sur riz ou boisson sur l’estomac après avoir mangé” [Fédry 1971: 105] || Eg. b3b3 [regular < either *ṽblbl or *ṽbrbr] “to distribute, pour out” (NEg. BD 64, Ward 1978: 64, #182, 94-95) = distribuer, répartir” (AL 78.1230) = “*verteilen” (GHWb 241) < AA *ṽblbl “pour out” [GT]. The Dangla parallel reflects an additional initial laryngeal extension not present in Egyptian.

86.1. A further root variety with the same Ch. *ḃ- (originating in the resolution of a cluster of a lost *H and a plain *b reflected by Egyptian), but with an AA *-r, is preserved by WCh.: AS *ḃṽē₂r, var. *ḃē₂r (?) → PAngas *ḃṽīr “1. to pour away, out, 2. melt away, dis-

³⁸ The expression n ṽb3 (Pap. Edwin Smith 16:1 and 16:14) was rendered as one word (nṽb3, elsewhere unattested) by both authors commenting this medical papyrus, viz., as “pallor, clamminess, resp.” (Breasted 1930: 408 and 414, resp.) and as “Blechheit” (Ebbell 1939: 68), but as pointed out by W. Westendorf (WMT I 137), we have to do here with the unusual alphabetic writing of the negation n + ṽb3 “leuchten, funkeln”.

solve (?)” [GT]:³⁹ Angas bat-bwir “to capsized”, bat-bir (so, without -w-) “to upset” [Ormsby 1914: 208, 315] = bwir “1. to pour out, spill (as water, or grain from a sack), 2. upset” [Foulkes 1915: 154] = ḥwir “ausschöpfen, augießen (Hausa zúbár), (Wasser auf Pflanzen) gießen” [Jng. 1962 MS] = [ḥ^wř] “to throw out, spill” [Burquest 1971: 14, 41] = ḥwir “to pour, spill” [ALC 1978: 8] = (plain) ḥwīr ~ (hill) ḥīr “to pour” [Gochal 1994: 34, 61], Sura ḥēer “1. verschütten (Flüssigkeiten), 2. verloren gehen” [Jng. 1963: 60], Mupun ḥēer “1. to pour away, 2. smother, 3. plaster (a house), paint” [Frj. 1991: 7], perhaps Goemay ḥēr [ḥēr] “to fall into pieces through being overcooked, overripe” (from *^w2. to melt away, dissolve”?) [Sirlinger 1937: 13] = (?) beer “to spread” [Hellwig 2000 MS: 1] (AS: Stolbova 1987: 155, #95; Takacs 2004: 42).

● **87. DM *ḥEld-** “to teach” [GT]: WDangla ḥıldé “apprendre, enseigner” [Fédry 1971: 106], EDangla ḥıldē (m) “apprendre, enseigner” [DM 1973: 58], Migama ḥèldò (ḥèldé, ḥèldèddá) “apprendre” [JA 1992: 73]: in principle, most tempting would be to assume *eo ipso* as metathesis of glottalization like *^wḥld < *^wḥld̤ where ECh. *ḍ may reflect either AA *ṭ or a glottal sibilant affricate. Still, even after manifold scanning the relevant lexical materials in the cognate branches, my attempts at finding semantically identifiable cognates,⁴⁰ the available comparative data make it evident that the C₃ must have been a root extension and that the *ḥ- issued from a cluster of primary *b- with a lost laryngeal, cf. CAA *^wḥbr ~ *^wḥbl [GT] > Sem.: Ar. ^wḥbr (prefix ḥ-?) I “7. expliquer, interpréter, p.ex., les songes à qqn., 8. examiner en détail (les marchandises ou les pièces de monnaie, pour s’assurer de leur qualité ou de leur poids), 9. signifier, vouloir dire telle chose, offrir tel ou tel sens”, II “5. expliquer, interpréter (un songe, etc.), 6. énoncer qqch., 7. expliquer qqn., expliquer ce qu’il voulait dire”, VIII “1. considérer avec attention, observer, 2. étonné à la vue de qqch., 3. regarder qqch. comme un exemple dans lequel on doit puiser un enseignement; s’instruire par des exemples, par ce qui arrive à d’autres, 4. examiner avec attention et calculer, supputer, 5. considérer, respecter qqn., 6. avoir égard à qqch., faire attention”, X “4. s’instruire par des exemples, par ce qui arrive aux autres”, ḥibr-at- “1. considération, estime, case que l’on fait d’une personne ou d’une chose, 2. exemple qui sert d’avertissement aux autres; événement extraordinaire d’où l’on peut tirer quelque enseignement”, but cf. I “1. passer, traverser, franchir (un fleuve, un gué), passer à travers qqch., traverser, p.ex., un pont” [BK II 152-154] = II “erklären” [GB] III Eg. ḥb3 [regular < either *^wḥbl or *^wḥbr] “eine Eigenschaft: geschickt? ausgestattet?”, in: ḥb3-r3 “mit klugem Rat” (Wb I 177, 5-6) = ḥb3-r “beredt, mit klugem Rat, *kompetent” (1st IMP, ÄWb I 265, II 494-495), cf. ḥb3 “(das Schiff) kommandieren, leiten”

³⁹ AS *ḥ^wēr “to pour away” yields reflexes with a rich semantic dispersion. The most interesting one among all these shifts of meaning is to be seen in Angas bat-bwir “to capsized” [Foulkes]. The same shift occurs, e.g., in French *couler* “1. to pour, 6. to sink (ship, person)” (Le Robert & Collins Super Senior).

⁴⁰ It would be probably far-fetched to assume a semantical shift “to teach” < *^w“to torture” and a kinship with Sem. *^wḥlš ~ ḥlṭ (root varieties?) [DRS]: Ar. ḥlš III “fondre sur qqn., assaillir”, ḥlš-at- (mod.) “vexation, avanie”, cf. ḥlṭ IV “5. importuner qqn. par ses demandes” [BK I 160] = ḥlš I “faire une avanie à qqn., rançonner (exiger plus qu’il ne faut), opprimer, vexer”, ḥlš- “avanie, vexation”, ḥlš-at- “avanie, vexation, aussi: concussion, exaction, maltôte” [Dozy I 111] = ḥlš III “assaillir qqn.”, ḥlṭ IV “4. harceler qqn., l’importuner par ses demandes” [WKAS 799-800] || Tigre (tə)bälläšä “tromper” [DRS], Amh. bällätä “l’emporter sur, duper” [DRS] (ES: DRS 69, ḥlš4).

(PT, BD, Wb I 177, 1; ÄWb I 264) ||l| WCh.: PAngas *b̥el “reason, sense” [GT]:⁴¹ Angas b̥el “sense, reason” [Foulkes 1915: 148] = b̥el “Verstand” [Jng. 1962 MS] = b̥el “2. be wise”, b̥el “condition of being wise” [Gochal 1994: 48] (Angas: Takacs 2004: 31).

87.1. One may wonder theoretically whether the traces of the ultimate biradical root (without the C₁ extension element *^c-?) are to be seen in CAA *√br [GT] > Sem. *√bʔr “to become visible” [GT]: Akk. b̄aru G-stem “1. in Erscheinung treten, sich offenbaren, 2. etwa auftauchen, greifbar werden, 3. etwa sichtbar Bestand haben”, Hbr. √bʔr piel “erklären, deutlich, klar machen” (Sem.: GB 81; AHW 108; DRS 41) ||l| (???) Eg. sb3 [Takacs 1994: caus. s- + * √brʔ] “to teach” (OK, Wb IV 83-84)⁴² ||l| SCu. *bar- “to know” [Ehret]: Qwadza bal-at- [-l- < *-r- regular] “to know” | Dahalo ɸar- “to know” (SCu.: Ehret 1980a: 135, §I.A.12) ||l| ECu. *bar- “to learn” [GT]: Afar bar-, Oromo bar-aḍ- | PSam *bar-o [Heine 1978: 75]: Somali bar-o, Boni bar-o | Darasa bar-aḍ- (ECu.: Reinisch 1886: 830; Moreno 1937: 233; Dolgopol’skij 1966: 55; Zaborski 1975: 322). ECu.-Hbr.: Reinisch 1902: 85; Dolgopol’skij 1966: 55; 1967b: 279. For this Cu.-Sem. etymology of Eg. sb3 on the analogy of, e.g., LECu.: Boni bar-sīs- (caus.) “lehren” [Sasse 1980: 96] see Takacs 1994; 2000: 71-72, #1.1.

● **88. EDangla ɸalàs** “déséquilibré” [Dbr.-Mnt. 1973: 57] ||l| SBrb. (Twareg) *√blɸ “to miscarry (either in speech or in giving birth)” [GT]: Ahaggar belezz-et “2. commettre un maladresse (en paroles), laisser échapper des paroles maladroites”,⁴³ ä-blezzī “maladresse (en paroles)” [Foucauld 1951-2 I: 69], EWlmd.-Ayr b̄eləzz-ət and zə-bb̄eləzz-ət “mettre bas avant terme (femelle)”, EWlmd.-Ayr b̄älzo “avorton” [PAM 2003: 30] (SBrb.: DRB 71, blɸ1, blɸ(t)1-2)⁴⁴ ||l| Eg. bnd [regular < both OEg. *bnd̄ < AA *√blɸ or < AA *√bl̄t] “als Bez. für schwere Geburt oder Fehlgeburt” (Med., Wb I 465, 1), cf. bnd “übel daran sein (Gegs. ršw)”, bnd n “übel ergeht es dem, Wehe dem” (NE, Wb I 464, 14-16) = “to go ill” (DLE I 157) = “krank werden” (GHWb 255) ||l| Sem.: no direct cognates though, but the assumption of the sometime existence of a possible **√blɸ “to mismanage (???)” may be supported by its variety *√bl̄t attested by Ar. √bl̄t IV “4. être ruiné, tomber dans la misère” [BK I 160] = √bl̄t

⁴¹ Takacs l.c.: Any connection to AS *b̥el “clear”?

⁴² Whose s-, however, may well have alternatively been the first radical of a trilateral root (as surmised in the HCVA V 22, #355 s.v. AA *cVbVr- “to learn, some to know, let know”), cf. PB Hbr. √sbr qal “1. meinen, 2. vertrauen”, hifil “1. klar machen, 2. hisb̄ir p̄ānim: freundlich sein” [Dalman 1922: 282] = √sbr “insbes. meinen, der Ansicht sein, vertrauen” [Levy 1924 III: 469] = √sbr hifil “to brighten, illustrate, make clear” [HCVA] | JArām. √sbr qal “1. verstehen, 2. meinen, 3. gedenken, 4. hoffen”, afel “1. hoffen, 2. hoffen machen, 3. ʔasb̄er ʔapp̄in: freundlich sein, sich jemd. zuwenden, 4. aufklären”, itpaal “1. hoffen, 2. einleuchten” [Dalman 1922: 282], Syriac √sbr “to think, expect” [HCVA] | Ar. √sbr I: sabara “sonder, explorer (une plaie à l’aide d’une sonde, etc.)”, sabr- “connaissance qui résulte de l’examen” [BK I 1043] = √sbr I: sabara “1. to probe (the wound), measure (its depth with an iron or other instrument), try, examine (e.g., its extent), endeavour to learn, determine or compute (by conjecture or by the eye, its measure, quantity, size, bulk), try, prove (by experiment or experience), elicit (its true or real condition)”, sabr- “examination, learning” [HCVA < Lane 1293] ||l| Mehri s̄ab̄ur “to scout, go ahead of the main party to spy out the land” [HCVA < Jns. 1987: 340].

⁴³ Treated by Ch. de Foucauld (1951-2 I: 69) as a fig. sense of belezz-et “être obèse (être chargé de graisse au point d’être presqu’impotent, le sujet peut être une personne ou un animal de tout âge)”.

⁴⁴ DRB l.c.: the Twareg data quoted above, understandably, due to the lack of an AA context, were arranged and treated as three distinct Berber roots.

IV “3. réduire qqn. à la misère (?), pass.: tomber dans l’indigence” [WKAS 799-800] < CAA *√blç with a variety *√bl̥t “1. to miscarry, 2. suffer some way (?)” [GT].

● **89. PDangla *ḥalge** “to mix” [GT]: WDangla ḥálgé “1. remuer, 2. gêner” (parler des anciens) [Fédry 1971: 105], EDangla ḥálgē “1. remuer (la sauce), mélanger, touiller, brasser, 2. confondre” [Dbr.-Mnt. 1973: 57] = “mischen” [Ebobisse 1979: 135; 1987: 88] ||| SBrb. (Twareg) *√bl̥y < **√bl̥k “to roll (i.e., in a circular movement?)” [GT]:⁴⁵ Hgr. beluley “rouler (le sujet étant les yeux)”, ā-blūley, fem. tā-blūleḳ “globe de l’oeil” [Foucauld 1951-2 I: 63], EWlmd.-Ayr bəluləy “être de forme sphérique” (DRB: “avoir une forme sphérique”), a-bālalay “objet qcq. ayant la forme d’une sphère”, EWlmd. ta-bəluləq and Ayr tə-bluleq “1. globe, boule, sphère, 2. motte (de beurre), grumeau (de bouillie/lait), 3. brique (pour la construction)” [PAM 2003: 26] (SBrb.: DRB, bl̥y/q1: isolated in Brb.) ||| Sem.: Tigrinya ḥabaläqä (C₁ root ext. ḥ-) “1. bouleverser, renverser, 2. mélanger, confondre” [DRS 1973: 819] < CAA *√bl̥k “to move circularly (?)” [GT], a number of root varies of which are known:

89.1. CAA *√br̥k “to turn round (?)” [GT] > SCu. *biriḳ- “to turn over” [Ehret]: Dahalo ḥiriḳ- “to turn over”, ḥiriḳ-ēḏ- “to turn (sg.) over” (SCu.: Ehret 1980a: 142, §I.A.70)⁴⁶ ||| CCh.: Lame ḥürkú “faire rouler qqch. de lourd et massif” [Sachnine 1982: 265].

89.2. CAA *√blk “1. to turn round (?), 2. change (???)” [GT] > Sem. *√blk [DRS]: Ar. balaka “mêler, mélanger” || ES *√blk: Tigre bäläk belä “bouillir fortement”, Tigrinya bäläš bälä “déborder (vase)” (Sem.: DRS 57), cf. its quadrilateral variety with a C₁ root ext. ḥ- in ES *√ḥblk: Tigre ḥabläka “confondre”, Tna. ḥabläkä “tourner, tordre”, ḥəbluk “embrouillé”, täḥabläkä “être embrouillé” (Sem.: DRS 819) ||| (???) SCu. *balak- “to move house” [Ehret] < * “to change dwelling (???)” [GT]: Ma’ a -bäle [Ehret: loss of -C# regular] “to move house”, -balé-ti (caus.)⁴⁷ “to cause to emigrate” | DhI. ḥalak- “to move house” (SCu.: Ehret 1980a: 134, §I.A.8).

89.3. CAA *√blkt (?)⁴⁸ “to turn around, roll” [GT]: Sem.: Akk. √blkt, used in the N stirp: nabalkutu “9. sich umwenden: a) im Schlaf, b) von Eingeweideteilen, c) von verdrehten Augen, d) von Zunge, e) von Hand, f) von der Erde bei Beben” [AHW 695] ||| CCh.: perhaps Mofu-Gudur -pətkwal- [met. < *√plk^wt?] “(se) rouler à terre (de douleur, en jouant)” [Brt. 1988: 222] || ECh.: Lele bīlgēdé ~ bīlgīdī ~ bīlgūdū ~ bīlgādī “tourner” [WP 1982: 5]. Cf. EDE II 396 (with further possible root vars.); EAAN I 94, #302.

89.4. NAA *√l̥bk (Eg. var. *√l̥bh̥?) “to mix, mingle” [GT] > SBrb.: EWlmd.-Ayr ə-lbək “2. se fondre, se diluer (dans l’eau)”, EWlmd. ləbək̥-ət “être mouillé” [PAM 2003: 447] ||| Eg. 3bh̥ (regular < *√l̥bh̥ with an irregular -ḥ) “vermischen” (MK, Wb I 8, 8-20) ||| Sem.: Ar.

⁴⁵ Thence, on the analogy of Hbr. gal and Talmudic Aram. gal(ə)lā “Welle” < Sem. *√gl “(sich) wälzen, rollen (Wasser)” (GB 141; Eilers 1987: 514), cf. also Hgr. beleybeley “former des vagues” treated in DRB, s.v. bl̥y/q3, as isolated in Brb.

⁴⁶ Ehret l.c.: equated with false SCu. *comparanda*: ~ Irq. burq-os- and Alagwa buruq-us- “to winnow” | Qwd. bel-et- “to winnow”, bel-as- “to fold”.

⁴⁷ Ehret l.c.: stem + modern -ti caus. suffix, added since C# → Ø had taken place.

⁴⁸ Some of the labial, velar, and dental correspondences are apparently irregular. But the Akk.-Lele match indicates that the rare type quadriconsonantal verbal root with a second “sonant” was not limited to Semitic.

labaka I “1. mêler (p.ex. du froment avec du miel), 2. tasser et pétrir un mets moitié liquide, moitié solide, 3. (em)brouiller (une affaire)”, II “mêler, mélanger, brouiller”, IV “2. être embrouillé, en désordre, pêle-mêle (se dit des choses)”, VIII “être embrouillé, en désordre” [BK II 961].

89.5. CAA *√plk (Eg. var. *√plg?) “1. to turn around (?), 2. change” (orig. *‘to turn into’ or sim.) [GT]: Sem. *√plk “to be round (?)” [GT]: Akk. pilakku (a/jB, nA) “Stilett, Spindel”, (a/jB, nA) pilku “Gebiet” [AHW 863] || Hbr. pélek “1. Kreis, Bezirk, 2. Spindel (urspr. wohl der Wirtel, Wertel)” [GB 643] | Ar. falak- “etwas rundes”, falk-at- “Spindel” [GB] || perhaps Eg. p3ḏ [if < *plg with an irreg. *-g] (ball det.) “Kugel: 1. von der Kugel, zu der man Weihrauch formt, 2. ein Gebäck, runder Kuchen” (OK, Wb I 501, 9-13) || ECu.: Yaaku -pelk- (intr.), pelk-is- (tr.) “to shift” [Heine 1975: 133] || ECh.: Mubi fèlègé (fílík, fíléek), pl. fàlàgé (félík, fíláak) “échanger, troquer, modifier” [Jng. 1990b MS: 15]. Cf. EDE II 410; EAAN I 94, #449.

● **90. WDangla ḡàlàny ~ ḡḡàlàny** “évoque qqch. rempli jusqu’au bord ou qui déborde” [Fédry 1971: 105]: the C₃ seems to be a suffix, while the biradical root *√ḡbl (preserved in West Chadic also, cf. below) evidently appears to issue from the regular erosion of CAA *√ḡbl “full” [GT], cf. CSem. *√ḡbl “concevoir, être enceinte” [DRS 818, ḡbl3]: esp. Ar. ḡḡbl I: ḡabila “1. être rempli, se remplir (de boisson, d’eau), 2. concevoir, devenir enceinte, grosse (d’un foetus), ḡubāl- “état de grossesse, ou état de tout ce qui est rempli et comme gros de qqch.”, ḡa/ubl-ān- “1. rempli (de boisson), 2. lourd de, (r)empli de colère, 3. (au fém. ḡabl-ān-at-) grosse (femme femelle)”, ḡubāl- “état de grossesse, ou état de tout ce qui est rempli et comme gros de qqch.” [BK I 370-371] || perhaps Eg. ḡb3 [regular < *√ḡbl] “ein guter Zustand des Bieres” (Med., Wb III 62, 15) = “(unfermented?) freshly-mixed beer-mash (seems a reasonable translation)” (Ward 1978: 23, §32, 137, §§273-274, 193)⁴⁹ = “*Schaum” (GHWb 522) = “stage in beer fermentation” (HSED 289-290, #1317)⁵⁰ || WCh.: Angas-Sura

⁴⁹ The hapax “occurs in an incantation to drive out demonic influence, which begins ...: ‘Spell for the beer. The *ḡsr.t*-beer of Horus of Chemmis, strained (*ḡḡ*) in Pe and mashed (*ḡbb*) in Buto, you should drink it *ḡb3*” (Ward 1978: 137, §273), which is why Ward (1978: 138) guesses that “Helck is therefore probably right in placing these two stages (*ḡḡ*, *ḡbb*) together in the brewing process, after the dough has been made and partially baked. This is then broken up and mixed with water (*ḡbb*) and strained (*ḡḡ*) through a basket-sieve by pouring date-juice out into a large jar. This mixture is allowed to set for a few days before the final stages are undertaken”. As a result, it is “this mixture which is to be drunk to remove evil influence” (Ward 1978: 193). Ward thoroughly examined this context. Henceforth, he concluded that Eg. ḡb3 “describes a stage in which the beer exists at some time during the brewing process, the state of the ingredients after being mixed with water and strained but before the brewing is finished” (Ward 1978: 23, §32), thus, in his view, it appears to describe “beer at that stage where all the ingredients have been mixed together and await the final stages of brewing” (Ward 1978: §§273-274, 137).

⁵⁰ Equated by V. Orel and O. Stolbova (HSED 289-290, #1317) with their ill-founded Sem. *ḡabur- based solely on Akk. ḡabburu “kind of wine” and derived from their AA *ḡabur- “wine” (as possible cultural loanword?). Irregular Eg. ḡ- vs. Akk. ḡ-, let alone for the substantial semantical difference from Akk. (nA) ḡabburu “eine Weinsorte” [AHW 305a] = “(a qualification of wine)” [CAD ḡ 14b]. Ch. Ehret (2000 MS: 298, #2401), in turn, combined the Egyptian term with Sem.: Ar. ḡa/ibab- “bubble” and LECu.: Oromo hubbo “earthen pot for boiling” derived from AA *ḡub- “to bubble, froth”.

*γəβəl⁵¹ “1. to swell (in gen.), 2. be filled with food, be sat(isfi)ed” > PAngas *γəl, pl. *γāl⁵² vs. PSuroid *γəβəl > *γəl ~ *βəγəl⁵³ vs. PGoemay *həβəl, pl. *haβal⁵⁴ [GT] (AS: Takacs 2004: 150-151).

● **91. Migama βèlîlû** (f) “lézard sp.” [JA 1992: 73] || CCh.: Boka βılaŋa “lizard” [Kraft] || WCh.: AS *-bu₂l (> Goemay *-βel) ~ *-bu₂l > *-bəl (mostly with prefix *ti-/tə-, in Suroid with suffix *-ak) “lizard (in gen.)” [GT] = *ti-bAla[k] “lizard (ящерица)” [Stolbova]: Gerka boel [β/bə] “lizard” [Ftp. 1911: 218], Sura tibilák ~ tóbəlák [suffix -ak] “Eidechsenart” [Jng. 1963: 85] = tibilak “lizard” [Kraft], Mupun tóblák ~ tóbùlák “lizard” [Frj. 1991: 62], Kofyar doebel (so, -e! Goemay influence?) “lizard” [Netting 1967: 7], Mushere tibuul (so, plain b-, false long -uu-) “lizard” [Diyakal 1997 MS: 227] = sim-bul (so, plain b-) “lizard” [Jng. 1999 MS: 18], Montol tubul (so) “lizard” [Ftp. 1911: 218], Goemay tibbel [-e- regular < *-u₂-] “lizard” [Ftp. 1911: 218] = toeβel “a lizard” [Sirlinger 1937: 249] = tìβul (so, -t-) “lizard” [Kraft] = təβel “lizard” [Hellwig 2000 MS: 36]⁵⁵ (AS: Stolbova 1987: 158, #123; Takacs 2004: 37-38) | Sha βòlès “Mauergecko” [Jng. 1970: 283] | Geji βàlìkìŋ “lizard” [Kraft], Sa/eya βəlìh “lizard” [Kraft] || CCh.: Boka βılaŋa “lizard” [Kraft] (Ch.: Kraft 1981 q.v.) < (W/P?)Ch. *√βl (*β- probably contracted from *Hb-) “lizard” [GT]. This (West) Chadic root (so far unparalleled elsewhere in AA) may have retained the very simplex of the Common AA term (AA **√βl) which is only attested with a velar root extension in the other branches (below).

91.1. CAA *√βhl “some creeping creature” [GT], if it was a metathesis of CAA **√βhl, might be regarded as a quadrilateral extension: cf. (???)⁵⁶ Eg. βnh</> βhn “Frosch” (Med., Wb I 178, 16) = “frog” (FD 41) || NBrb.: Beni Menacer (DRB: Central Algerian) buylal,

⁵¹ The originally triconsonantal proto-Angas-Sura root has been best preserved in Suroid.

⁵² Hence Angas ril (r- for γ-) [act. γəl] “to be satisfied” [Ormsby 1914: 314] = γül [act. γəl] “to be satisfied”, γääl (generally used reduplicated) ~ γäl ~ gwäl (so, gw-, obscure) [different ablaut grade? perhaps *γäl?] “a swelling, an abscess, a blister (such as is caused by a first working with an unaccustomed tool), skin eruptions, such as pimples, etc.” [Foulkes 1915: 186-187] = (Kabwir dialect) γəl (verbal noun γəl) “1. to be satisfied, 2. swell (intr.)” [Jng. 1962 MS] = həl (sg.), həl (pl.) “to swell” [ALC 1978: 21] = γil [act. γəl], pl. γäl “to swell”, γil [act. γəl] (no pl.) “to be belly-full with food” [Gochal 1994: 39, 74, note 2]. In Angas, in turn, the regular loss of AS *-β- has been accompanied by the compensatory lengthening of *-ə-.

⁵³ Hence Sura γəβəl “1. anschwellen, 2. sattwerden” [Jng. 1963: 67], Mupun əβəl [< *γəβəl] ~ βəəl [from *βəγəl, met. of *γəβəl] “to be well fed, satisfied (only about food)”, also βəəl “to swell up, be filled up (e.g. with food)” [Frj. 1991: 8, 70], Kofyar oegoel [əgəl reg. both < *əγəl and from *γəβəl] “to swell, be full of food” [Netting 1967: 30]. Note that Kofyar -g- < AS *-β- is regular. The Mushere cognate is highly dubious: cf. perhaps Mushere wuul [irreg. < *γubul via *γuwul?] “to swell” (Hausa kumbura) [Diyakal 1997 MS: 305]?

⁵⁴ Hence: Goemay hool [reg. < *həβəl] (sg.) vs. haβal (pl.) [irreg. h-] “1. to make full, be full (with food or drinks), 2. be swollen” [Sirlinger 1937: 73, 78, 79] = hool “to be satisfied, replete” [Hellwig 2000 MS: 13]. Goemay *hōl, pl. *haβal “to be full, sated” is an irregular cognate, since Goemay h- does not correspond to AS *γ- as a rule. Goemay *-ō- < AS *-əβə- is, however, normal (cf. e.g., AS *kəβəŋ “buffalo”).

⁵⁵ Goemay *β- due to the cluster *mb- (i.e., *tə-βel < *tim-bu₂)?

⁵⁶ The Egyptian term might alternatively be equated with SBrb.: EWlmd. a-βəgəŋəŋ “lézard (qçq.)” [PAM 1998: 6] || NOm.: Male fan̄ko “frog” [Siebert 1994-5: 8] || SOM.: Ari (Galila) fan̄qá, Hamer (Karo) fan̄ka “frog, toad” (SOM.: Bender 1994: 150) || WCh.: Miya əbàngu “lizard” | Burma bəŋgàlà “lizard” || CCh.: Ngwahyi bənžà “frog” (Ch.: Kraft 1981 q.v.), whose areal parallel appears in PKoman *βanko “frog” [Bender 1983: 281]. This cognate set, by the way, supplies further evidence for the semantical dispersion of “lizard” vs. “frog”.

pl. i-buyɫal-en “escargot” [Basset 1885: 163], Senhazha a-beryɫal “escargot” [DRB 116: isolated, with an inner etymology]⁵⁷ | Tamazight a-buyɫal, pl. i-buyɫal-n “1. escargot, 2. limaçon” [Taïfi 1991: 12] (NBrb.: DRB 83) ||l WCh.: Geji ɓuyɫɫul “chamaeleon” [Kraft 1981].

● **92. Migama ɓiliw ~ ɓiliwníçè (m), pl. ɓiliw ~ ɓiliwnígèè** “loup” [JA 1992: 73]: the initial ɓ- may be here due to a former prenasalization, cf. WCh.: Siri mbəli “hyena” [Skinner 1977: 27]. The simplex root, viz. CAA *√bl “jackal, hyena” [GT], is more widespread in Chadic, cf. Sem.: Geez ʔabbəl “jackal” [Leslau 1987: 3: isolated in Sem.] ||l CCh.: Gude bóolà “tan colored dog” [Hoskison 1983: 162] | Bata bóloke “hyena” [Mouchet 1950: 25] || ECh. *bōl- “jackal” [GT] > EDangla bóolóló (f) “le chacal” [Dbr. & Mnt. 1973: 50], WDangla bóllɓ “espèce de chat sauvage au pelage fauve (il creuse des galeries en terre, aboie comme un chien, se bat avec l’hyène)” [Fédry 1971: 93] | Ubi boolè “hyène” [Alio 2004: 268, #38], Jegu báló, pl. bálê & balan “Fuchs” [Jng. 1961: 110]. Cf. also ECh.: Jegoid *bolond- (?) [GT] > Jegu bólónnó, pl. bólán ~ bólónnân “Hyäne”, bolonne “weibl. Hyäne” [Jng. 1961: 111], Kofa bōlódè (m), pl. bōlódân “hyena” [Jng. 1977 MS: 12]. Cf. EDE II 20 (with further discussion); EAAN I 64, #271.

Dangla-Migama *ḃ- and semi-vowels

● **93. Migama ɓàawò (ɓàawé, ɓàkáa)** “séquestrer une femme” [JA 1992: 73]: apparently isolated in the DM group and its AA etymology is equivocally puzzling:

93.1. Perhaps a tr. reflex of CAA *√bw? “to enter” [GT] from a primary sense *“(to put into (a closed room, i.e., seclusion?))” Cf. Sem. *√bw? “to enter” [GT] (Sem.: GB 86; Aro 1964: 176; DRS 50; Leslau 1987: 114-115) ||l (?) Eg. bb (redupl.?) “entrer dans, pénétrer” (CT III 98g, AL 78.1312, cf. Osing 1978: 187) = “eindringen in” (GHWb 251) = “to wade in (m)” (DCT 120) ||l SCu. *bu?- “to put into” [Ehret]: Irq. -bú?u “to enter”,⁵⁸ -bú?-iža⁵⁹ (-j-) “to put into”, -bú-tu “to apply, put”⁶⁰ | Dahalo ɓuw-aɫ- “to descend (of sun in afternoon)” [Ehret 1980a: 142, §I.A.69]⁶¹ = ɓu?- “1. to put into, 2. pour, 3. plant”, ɓu?-um- “to go in” [EEN 1989: 34] = ɓu?- “1. to put into, 2. plant”, ɓu?-ud- “to enter” [Tosco 1991: 130] (SCu.: Ehret 1980a: 141, §I.A.67) ||l ECh.: Kwang-Mobu báyé “entrer” [Lenssen 1984: 63]. Sem.-Mobu: HSED #157. The rest of the AA *comparanda* was added in EDE II 186 and EAAN I 71, #317.

⁵⁷ Ignoring the cognates deriving from Brb. *√byll, K. Naït-Zerrad (DRB 116) segmented it into two juxtaposed terms, viz. *√br (unexplained which one of the multiple homophonous roots is meant) + *a-ɣlal “coquille”.

⁵⁸ Ehret l.c.: “-bu?u consists of the original stem plus the stative extension added before C# > Ø.”

⁵⁹ Ehret l.c.: “-bu?ija is back-formation from -bu?a ‘to enter’ by addition of the causative -ija, adopted from Bantu.”

⁶⁰ Ehret l.c.: “-butu consists of the stem plus -tu extension after C# > Ø; -tu was apparently added for continuative sense.”

⁶¹ Ehret l.c.: ~ Irq. busi “cow obtained in Mbugwe” < SCu. *buw- “to go down” [Ehret].

93.2. Alternatively, it might be rendered from the primary sense “*to arrest”, i.e., “to make stop”, cf. Sem.: Thamudic bw (for bw?) “faire halte (?)” [DRS 50], Ar. \sqrt{bw} I: bawā “faire halte” [DRS 51: isolated].

● **94. PDangla *ḃaw-** “to go” [GT]: WDangla ḃáàwè “aller (jamais dans le sens de venir /àsè/)” [Fédry 1971: 104], Mawa (close to Dangla) ḃeḃ (ḃê, ḃa) “gehen (aller), weggehen (partir)” [Jng. 1978 MS: 2; 1980 MS: 28] | Muboid *ḃaw- “to go” [GT]: Mubi ḃau “gehen, laufen” [Lukas 1937: 180] = ḃów (ḃâ, nḃáà) “partir, aller, se promener” [Jng. 1990b MS: 7], cf. also Mubi ḃa “gehen” [Lukas 1937: 180], Masmaje ḃo “aller” [Alio 2004: 280, #34] | Sokoro ḃëy “to go” [Saxon in JI 1994 II: 163] || CCh.: Tera ḃá “to come” [Newman 1964: 47] < PCh. *ḃV “идти, уходить” [Dlg.] = *ḃ- “to go” [NM] = *b₂- “to come, go (out)” [JI] || Om. *bV “gehen” [Sasse]: extended Wolayta cluster (EWC) *b- (mono-consonantal) “to go, walk” [Bender 2003: 17, #59] > COMeto *b- and EOMeto *ba(y) “to go” [Fleming] | SEOMeto *ba “to go” [Bender 2003: 117, #59] > Kachama bā “to go, walk” [Conti Rossini in Bender 2003: 87, #59] || ECu. *baḃ- “to go out” [Bender] || SCu.: Ma’a bḃḃḃ “gehen” [Meinhof 1906: 308] = bu? ~ buh “to go” [Fleming] = -buhe ~ -bu “to go” [Ehret 1980a: 139, #50] < CAA *ḃḃ “to go” [GT], which is otherwise a well-known root.⁶²

● **95. Bidiya ḃiw** “idéo. évoquant un coup de poing sur le dos” [AJ 1989: 62] || WCh.: Miya ḃáá- “to beat (in gen.)” [Skinner in JI 1994 II: 14] < Ch. *ḃḃw “to beat” < AA *ḃḃwH [GT]? Part of a large root family existing in a few root varieties:

95.1. SAA *ḃḃh “to pound” [GT] > SCu.: WRift *puh-um- (dur.) “to smash grains, pound grains” (cf. Sandawe pùè “to pound”) > WRift *puh-uru “smashing, pounding” > (via irregular loss of *h) Piraqw *pūrú “flour” [KM 2004: 226-227] || WCh.: Bokkos fayî “to beat (in gen.)” [Jng.] || CCh.: Buduma (Yedina) fó “to pound (in mortar)” [Cyffer] (Ch.: JI 1994 II: 14, 269) || ECh.: Kera épé “to pound (in mortar)” [Ebert].

95.2. SAA *ḃḃḃ “1. to strike, hit (orig. by shooting), 2. sting” [GT]: SCu. *paḃ- [GT]: Dahalo paḃ- “to hit, strike” [Ehret 1980: 144] = paḃ- “to hit, shoot” [EEN 1989: 7] = paḃ- “to beat” [Tosco 1991: 145] || NOM.: Mao: Hozo pā ~ pā? “to stab, pierce”, Sezo pe, pē? “to stab, pierce”, EMao piy-a “1. to stab, pierce, 2. kill”⁶³ (Mao: Fleming 1988: 38) || WCh.: Tangale peyî “to kick, shoot, sting” [Jng. 1991: 131] | Ngizim vāu “1. to shoot, 2. sting (scorpion)” [Schuh 1981: 167] || CCh.: Bura pwa “to strike (in shooting)” [BED 1953: 177] | (?) Mofu-Gudur vāv ~ vév [redupl.?] “piquer (insecte)” [Brt. 1988: 251]. Eventually identical with AA *ḃḃḃ “1. to find, 2. get, obtain” [GT in EAAN I 82, #380] (as shown by the semantic dispersion of Eg. ḃḃ?)? Cf. EDE II 488; EAAN I 81, #379.

⁶² See Greenberg 1955: 56; Fleming 1969: 25; 1974: 89; Dlg 1973: 318; Sasse 1981: 152, #4; SISAJa I #129; JI 1994 I: 38; HSED #157; HCVA II #143; Voigt 1998: 609-610. The Mubi with Ometo reflexes have already been affiliated by M.L. Bender (1975: 165) with ECu. *baḃ- “to go out” and/or Sem. *ḃḃw? “1. to enter, 2. return”. Bender (2003: 117, #59), in turn, equated the Ometo root with Ch. *b₂ “to go” [JI 1994 I: 78].

⁶³ The EMao form in the sense “to kill” may be a contamination, cf. AA *ḃḃḃ “1. to hurt, 2. be sick, 3. destroy” (below).

● **96. Migama ḥàayò (ḥàayé, ḥàyáa)** “jouer (à un jeu spécial)” [JA 1992: 73] III Sem. *√by^ɸ [DRS] > JPAm. beyā^ɸā, bīy^ɸātā “joie, allégresse” [DRS 63, by^ɸ2: isolated in Sem.]⁶⁴ < PAA (???) *√by^ɸ “to have fun (???)” [GT]. Perhaps the metathesis of the otherwise unattested biliteral PAA simplex of a multiply strangely triradicalized CAA (?) root, viz. *√^ɸb “to play” [GT],⁶⁵ which only occurs with diverse additional C₁- root extensions (namely, NAgaw *w-, Eg. ḥ-, Sem. *l-, neither of which can regularly correspond), cf. NAgaw: Bilin wa^ɸab ~ wā^ɸab ~ wā^ɸeb, Nebenform mā^ɸeb “1. spielen, lachen, 2. sich ergötzen”, wa^ɸab-d “1. zum spielen auffordern, 2. zum lachen reizen”, cf. mā^ɸeb “1. spielen, lachen, 2. verlachen, verhöhnen” [Reinisch 1887: 262, 352] = wā^ɸab “to pass the time in conversation, be free from work” vs. mā^ɸab “to rest, sitting down, and mingle conversation and laughter”, mā^ɸab “game, conversation” [Kiflemariam Hamde apud Apl.] = wā^ɸab ~ mā^ɸab “1. to play, 2. game” [Apl.] (Appleyard 2006: 73, 110: no Agaw/AA cognates) III Eg. ḥ^ɸb (Wb III 62: also var. ḥb^ɸ) “(ein Spiel) spielen (alt mit Objekt des Spiels, später auch mit m, noch später mit r des Spiels)” (OK-, Wb III 42, 6-8) = ḥ^ɸb “to play (draughts)” (CT, DCT 313) = ḥb^ɸ (sic: read -b^ɸ) “spielen”, ḥb^ɸ (m) zn.t “das Senet-Brettspiel spielen” (late OK: Dyn. V-VI, ÄWb I 795a) III Sem. *√l^ɸb: OHbr. √l^ɸb hitpael “verspotten” [GB] = hifil “to make sport of, deride with” [KB], MHbr. √l^ɸb “to encourage, mischief” [KB], NHbr. √l^ɸb hifil “verspotten” [GB] | Syr. √l^ɸb etpael “seine Lust an etwas haben, gierig sein” [GB] = “to long for, be covetous” [KB] | Ar. √l^ɸb I: lu^ɸiba “2. jouer, badiner, folâtrer, 3. jouer à un jeu de hasard, 4. jouer d’un instrument de musique, 5. faire des exercices à cheval avec des javelots”, II “se livrer aux jeux (de hasard ou autres), se divertir, s’amuser”, III “jouer, folâtrer, badiner avec qqn.”, la^ɸb- “2. jeu, badinage, divertissement”, la^ɸb-at- “1. un jeu, une partie de jeu, de divertissement, 2. tout ce qui sert à jouer, hochet, joujou, dé, ou tout instrument de musique, 3. fig. plastron, celui que tout le monde prend pour objet de ses plaisanteries”, lu^ɸb-at- “1. jeu d’échecs ou espèce de trictrac, 2. homme avec lequel on joue, partenaire, 3. pl. lu^ɸab-: jeu, divertissement, partie de jeu, de plaisir”, la^ɸüb- “gai, enjoué, qui folâtre” [BK II 999] = √l^ɸb “scherzen, spielen, mutwillig behandeln, quälen” [GB] = la^ɸiba I “to play, cheat” [KB] = la^ɸiba I “spielen, scherzen, spaßen, sein Spiel treiben, Possen reißen (to play games, joke, jest, fool around, play the fool)” [WKAS 779] (Sem.: GB 388; KB 532b). Bilin-Sem.: Reinisch 1887: 262. The old Eg.-Sem. match (mentioned already in the GB l.c.) with their strangely alternating first radicals was preferred by J.H. Greenberg (1950: 180) too, who wrote on Eg. ḥ^ɸb: “I don’t think we can keep apart from” Sem. *√l^ɸb.

● **97. Migama ḥàytà** (adj.) “vert (pas mûr)” [JA 1992: 73], cf. Bidiya ḥaràč (ḥarčí, ḥarčèn), pl. ḥaràč (ḥaràáčí, ḥaràáčèṅ) “verdir, bleuir”, ḥaràáčí (pl.) “verdure, légumes”, ḥaràčga “vert” [AJ 1989: 62] < DM *ḥarč/t- “green” [GT]?

⁶⁴ SCu.*bo/ō^ɸ- “to be good, be in good or proper condition” [Ehret]: Alagwa bo^ɸ “better, superior”, bo^ɸ-ot “beautiful”, rawa-bo^ɸ- “to be pleased” (cf. rawa “above”) (SCu.: Ehret 1980a: 139, §I.A.48). Ehret l.c.: “This root must be reconstructed for proto-Southern Cushitic because its derivative is reconstructed in #49 following.”

⁶⁵ I wonder if the underlying PAA *√^ɸb “to play” [GT] is reflected in its original biradical shape by SEOmeto *ʔēb-a “fool(ish)” [Bender 2003: 109, #33], attested, in fact, in Zayse ʔēwa [Siebert & Hoefl] = ʔēba [Hayward], Zergulla ʔēba [Siebert & Hoefl] “fool(ish)” (SEOmeto: Bender 2003: 333, #33).

*

Special symbols

P: any labial stop (f, p, b, p̄), T: unspecified dental stop (t, d, t̄), S: any voiceless sibilant and/or affricate (s, š, ś, c, č, ê), Z: unspecified voiced sibilant and/or affricate (z, ʒ, ž), K: any velar stop (k, g, k̄), Q: unspecified uvular or postvelar etc. (q, g, q̄, ḥ), H: any of the pharyngeals or laryngeals etc. (ʕ, ɣ, ḥ, h, ʔ). The vertical strokes signify the degree of closeness of the language groups (e.g. Kotoko | Masa), subbranches (e.g. North Berber || East Berber), and branches (Semitic ||| Egyptian), from which the individual lexical data are quoted.

Abbreviations of languages and other terms

(A): Ahmimic, (A₂) = (L): sub-Ahmimic = Lycopolitan dialect, aA: Old Assyrian (altassyrisch), aAk: Old Akkadian (altakkadisch), AA: Afro-Asiatic (Afrasian, Semito-Hamitic), Akk.: Akkadian, Alg.: Alagwa, Amh.: Amharic, Ar.: Arabic, Aram.: Aramaic, AS: Angas-Sura, Ass.: Assyrian, (B) Bohairic, b/Bab.: Babylonian, BAram.: Biblical Aramaic, Bed.: Bed'awye (Beja), Brb.: Berber (Libyo-Guanche), Brg.: Burunge, BT: Bole-Tangale, C: Central, CAA: Common Afro-Asiatic, Can.: Canaanite, Ch.: Chadic, Cpt.: Coptic, CT: Coffin Texts, Cu.: Cushitic, Dem.: Demotic, Dhl.: Dahalo, DM: Dangla-Migama, E: East, Eg.: Egyptian, ES: Ethio-Semitic, ESA: Epigraphic South Arabian, Eth.: Ethiopian, Eth.-Sem.: Ethio-Semitic, (F): Fayyumic, GR: Ptolemaic and Roman period, Grw.: Gorowa, H: Highland (in Cushitic), Hbr.: Hebrew, Hgr.: Ahaggar, Hrs.: Harsusi, jB: younger Babylonian (jungbabylonisch), Jbl.: Jibbali, L: Late, L: Low(land), (L) = (A₂): Lycopolitan dialect = sub-Ahmimic, lit.: literature, LP: Late Period, M: Middle, Mag.: magical texts, Med.: medical texts, MK: Middle Kingdom, MSA: Modern South Arabian, MT: Mubi-Toram, N: New, N: North, nA: Neo-Assyrian, NE (or NEg.): New Egyptian, NK: New Kingdom, Nslm.: Taneslemt, O: Old, OK: Old Kingdom, Om.: Omotic, Omt.: Omoto, OSA: Old South Arabian, OT: Old Testament, P: Proto-, PB: Post-Biblical, PT: Pyramid Texts, reg.: regular, S: South, (S): Sahidic, Sem.: Semitic, Sgt.: Soqotri, Syr.: Syriac, Ug.: Ugaritic, W: West, Wlmd.: Tawlemmet.

Abbreviations of author names

Abr.: Abraham, AJ: Alio & Jungrathmayr, Akl.: Aklilu, Alm.: Alemayehu, Apl.: Appleyard, Ast.: Aistleitner, BK: Bieberstein & Kazimirski, Bnd.: Bender, Brg.: Bargery, Brq.: Burquest, Brt.: Barreteau, Cpr.: Caprile, CR: Conti Rossini, Crl.: Cerulli, Csp.: Cospes, Dbr.: Djibrine, Djk.: D'jakonov, Dkl.: Diyakal, Dlg.: Dolgopolsky, Drn.: Doornbos, Ehr.: Ehret, Fcd.: Foucauld, Flk.: Foulkes, Flm.: Fleming, Frj.: Frajzyngier, Ftp.: Fitzpatrick, GB: Gesenius & Buhl, Grt.: Grottanelli, GT: Takács, Hds.: Hudson, Hfm.: Hoffmann, Hsk.: Hoskison, Hyw.: Hayward, Ibr.: Ibrizimow, IL: Institute of Linguistics, IS: Illič-Svityč, JA: Jungrathmayr & Adams, JI: Jungrathmayr & Ibrizimow, Jng.: Jungrathmayr, Jns.: Johnstone, JS: Jungrathmayr & Shimizu, KM: Kießling & Mous, Lmb.: Lamberti, LS: Lamberti & Sottile, Lsl.: Leslau, Mch.: Mouchet, Mkr.: Mukarovsky, MM: Majzel' and Militarev, Mnt.: Montgolfier, Mts.: Matsushita, NM: Newman & Ma, Ntg.: Netting, Nwm.: Newman, OS: Orel and Stolbova, PAM: Prasse, Alojaly, Mohamed, PG: Pillinger & Galboran, PH: Parker & Hayward, Prd.: Paradisi, Prh.: Porhomovskij, RB: Rapp and Benzing, Rn.: Reinisch, Rsg.: Rossing, Rsl.: Rössler, Sbr.: Siebert, Skn.: Skinner, Smz.: Shimizu, Srl.: Sirlinger, Stl.: Stolbova, TC: Taïne-Cheikh, Tf.: Taïfi, TG: Takács, Trn.: Tourneux, TSL: Tourneux, Seignobos, Lafarge, Vrg.: Vergote, Wdk.: Wedekind, WP: Weibgué and Palayer, Zbr.: Zaborski.

References

- Abraham, R.C. 1962. *Dictionary of the Hausa language*.² London: University of London Press.
- AHW = Soden, W. von. 1965-1981. *Akkadisches Handwörterbuch*. Vols. I-III. Wiesbaden: Otto Harrassowitz.
- Aistleitner, J. 1948. Untersuchungen zum Mitlautbestand des Ugaritisch-Semitischen. In Löwinger, S. & Somogyi, J. (eds.), *Ignace Goldziher memorial volume*, part I, 209-225. Budapest: Globus.
- Ajello, R. & Karyo, M. & Melis, A. & Dobio, Ou. 2001. *Lexique comparatif de six langues tchadique central (Gizey, Ham, Lew, Marba, Masa, Musey)*. Pisa: Edizioni Plus, Università di Pisa.
- AL I = Meeks, D. 1977. *Année lexicographique: Égypte ancienne*. Tome 1. 2^{ème} édition, 1998, Paris: Cybele.
- AL II = Meeks, D. 1978. *Année lexicographique: Égypte ancienne*. Tome 2. 2^{ème} édition, 1998, Paris: Cybele.
- AL III = Meeks, D. 1979. *Année lexicographique: Égypte ancienne*. Tome 3. 2^{ème} édition, 1998, Paris: Cybele.
- Albright, W.F. 1919. Notes on Assyrian lexicography and etymology. *Revue d'Assyriologie* 16(4), 173-194.
- ALC 1978 = Angas Language Committee (in Cooperation with Nigeria Bible Translation Trust). 1978. *Shàk nkary kè shàktok mwa ndàn Ngas. Ngas–Hausa–English dictionary with Appendix showing some features of Ngas grammar*. Jos, Nigeria: Nigeria Bible Translation Trust.
- Alio, Kh. 2004. Préliminaires à une étude de la langue kajakse d'Am-Dam, de Toram du Salamaat, d'ubi du Guéra et de masmaje du Batha-est. In Takács, G. (ed.), *Egyptian and Semito-Hamitic (Afro-Asiatic) studies in memoriam Werner Vycichl*, 229-285. Leiden: E. J. Brill.
- Alio, Kh. & Jungraithmayr, H. 1989. *Lexique bidiya*. Frankfurt am Main: Vittorio Klostermann.
- Applegate, J.R. 1958. *An outline of the structure of Shilha*. New York: American Council of Learned Societies.
- Appleyard, D. 1977. A comparative approach to the Amharic lexicon. *Afroasiatic Linguistics* 5(2).
- Appleyard, D. 1984. The internal classification of the Agaw languages: A comparative and historical phonology. In Bynon, J. (ed.), *Current progress in Afro-Asiatic Linguistics*, 33-67. Amsterdam – Philadelphia: John Benjamins.
- Appleyard, D. 1991. *A comparative Agaw wordlist*. MS. London. 13 p.
- Appleyard, D. 2006. *A comparative dictionary of the Agaw languages*. Köln: Rüdiger Köppe Verlag.
- Aro, J. 1964. *Die Vokalisierung des Grundstammes im semitischen Verbum* (Studia Orientalia Fennica 31). Helsinki: Societas Orientalis Fennica.
- ÄWb I = Hannig, R. 2003. *Ägyptisches Wörterbuch I. Altes Reich und Erste Zwischenzeit* (Hannig-Lexica 4). Mainz am Rhein: Verlag Philipp von Zabern.
- ÄWb II = Hannig, R. 2006. *Ägyptisches Wörterbuch II. Mittleres Reich und Zweite Zwischenzeit*. Bde. I-II (Hannig-Lexica 5). Mainz am Rhein: Verlag Philipp von Zabern.
- Barreteau, D. 1988. *Description du mofu-gudur: Langue de la famille tchadique parlée au Cameroun*. Livre II. *Lexique*. Paris: Éditions de l'ORSTOM.
- Barreteau, D. 1995. Vowel and tonal variations within the consonantal framework of the verbal system in Central Chadic languages. In Ibrizimow, D. & Leger, R. (eds.), *Studia Chadica et Hamitosemitica*, 197-228. Köln: Rüdiger Köppe Verlag.
- Barreteau, D. & Bléis, Y. 1990. *Lexique mafa: Langue de la famille tchadique parlée au Cameroun*. Paris: ORSTOM, Librairie Orientaliste Paul Geuthner.
- Barreteau, D. & Brunet, A. 2000. *Dictionnaire mada*. Berlin: Dietrich Reimer Verlag.
- Barreteau, D. & Newman, P. 1978. Les langues tchadiques. In Barreteau, D. (ed.), *Inventaire des études linguistiques sur les pays d'Afrique Noire d'expression française et sur Madagascar*, 291-330. Paris: Conseil International de la Langue Française.
- Basset, R. 1885. Notes de lexicographie berbère. *Journal Asiatique*. Ser. VIII, vol. 5, 148-198.
- BED = Anonymous. 1953. *Bura-English dictionary*. (Place unknown: publisher unnamed). Master copy in the library of the Seminar für Afrikanische Sprachen und Kulturen der Universität Hamburg (inv. no.: 15 748 / JT 1526).
- Bender, M.L. 29 January 1970a. *Xamta 100-item basic word list* (Investigator: M.L. Bender). MS. Carbondale, Illinois. 6 p.
- Bender, M.L. 1 June 1970b. *Kunfel 100-item basic word list* (Investigator: T. Birru & Z. Adal). MS. Carbondale, Illinois. 6 p.
- Bender, M.L. 1971. The languages of Ethiopia: A new lexicostatistic classification and some problems of diffusion. *Anthropological Linguistics* 13(5). 165-288.
- Bender, M.L. 29 August 1973a. *Awiya basic elicitation form for linguistic fieldwork in Ethiopia* (Investigator: R. Hetzron). MS. Carbondale, Illinois. 12 p.

- Bender, M.L. 29 August 1973b. *Kimant basic elicitation form for linguistic fieldwork in Ethiopia* (Investigator: H.-J. Sasse). MS. Carbondale, Illinois. 12 p.
- Bender, M.L. 1975. *Omotic: A new Afroasiatic language family*. Carbondale, Illinois: Southern Illinois University.
- Bender, M.L. 1983. Proto-Koman phonology and lexicon. *Afrika und Übersee* 66. 259-297.
- Bender, M.L. 1994. Aroid (South Omotic) lexicon. *Afrikanistische Arbeitspapiere* 38. 133-162.
- Bender, M.L. 2003. *Omotic lexicon and phonology*. Carbondale: SIU Printing / Duplicating, Southern Illinois University.
- Biberstein Kazimirski, A. de. 1860. *Dictionnaire arabe-français*. Paris: Maisonneuve & Co. Editeurs.
- Biella, J.C. 1982. *Dictionary of Old South Arabic*. Chico: Scholars Press at Harward.
- Blachère, R. & Chouémi, M. & Denizeau, C. & Pellat, Ch. 1967-1976. *Dictionnaire arabe-français-anglais (Langue classique et moderne)*. Tomes I-III. Paris: Maisonneuve et Larose.
- Blažek, V. 1989. Lexica Nostratica: Addenda et corrigenda I. *Archív Orientální* 57. 201-210.
- Blažek, V. 1994. Review of Jungrauthmayr, H.: Lexique mokilko. *Journal of African Languages and Linguistics* 15. 92-94.
- Bomhard, A.R. July 1990. *A sample of the comparative vocabulary of the Nostratic languages*. Revised Version. MS. 610 p. Published later in Bomhard, A.R. & Kerns, J.C. 1994. *The Nostratic macrofamily: A study in distant linguistic relationship*. Berlin – New York: Mouton de Gruyter.
- Bow, C. 1997. *A description of Moloko phonology*. Yaoundé, Cameroun: SIL (<https://www.sil.org/resources/archives/47672>).
- Breasted, J.H. 1930. *The Edwin Smith Surgical Papyrus*. Vol. I. Chicago: The University of Chicago Press.
- Bross, M. & Ibrizimow, D. etc. 1993. Pots, potters and their language among the Hausa and the Bole: A contrastive analysis. *Berichte des Sonderforschungsbereichs* 268(2). 75-93.
- Burquest, D.A. 1971. *A preliminary study of Angas phonology* (Studies in Nigerian Languages 1.) Zaria: Institute of Linguistics; Kano: Centre for the Study of Nigerian Languages.
- CAD = *The Assyrian dictionary of the Oriental Institute of the University of Chicago*. Since 1956. Glückstadt & Chicago: J.J. Augustin, The Oriental Institute of the University of Chicago.
- Caïtucoli, C. 1978. Schèmes tonals et morphologie du verbe en masa. In Caprile, J.-P. & Jungrauthmayr, H. (eds.), *Préalables à la reconstruction du proto-tchadique*, 67-87. Paris: SELAF.
- Caïtucoli, C. 1983. *Lexique masa*. Paris: Agence de Coopération Culturelle et Technique.
- Calice, F. 1936. *Grundlagen der ägyptisch-semitischen Wortvergleichung*. Wien: Selbstverlag des Orientalischen Institutes der Universität Wien.
- Camino, R. 1972. Another hieratic manuscript from the Library of Pwerem Son of Kiki (Pap. B.M. 10288). *JEA* 58. 205-224.
- Caprile, J.-P. & Jungrauthmayr, H. 1973. Inventaire provisoire des langues "tchadiques" parlées sur le territoire de la République du Tchad. *Africana Marburgensia* 6(2). 31-48.
- CD = Crum, W.E. 1939. *A Coptic dictionary*. Oxford: Oxford University Press.
- CED = Černý, J. 1976. *Coptic etymological dictionary*. London, Cambridge: Cambridge University Press.
- Cerulli, E. 1929. Note su alcune popolazioni sidāmā dell'Abissinia meridionale II: I Sidama dell'Omo. *Rivista degli Studi Orientali* 12. 1-69.
- CLD I = Stolbova, O.V. 2005. *Chadic lexical database*. Issue I. L, N, NY, R. Kaluga: Poligrafiya.
- Cohen, M. 1947. *Essai comparatif sur le vocabulaire et la phonétique du chamito-sémitique*. Paris: Librairie Ancienne Honore Champion.
- Colizza, G. 1887. *Linga 'Afar nel nord-est dell'Africa*. Wien: Alfred Hölder.
- Conti Rossini, C. 1937. Contributi per la conoscenza della lingua Haruro (Isole del Lago Margherita). *Rendiconti della Reale Accademia Nazionale dei Lincei, Classe di Scienze morali, storiche e filologiche*, ser. VI, vol. XII, fasc. 7-10. 621-679.
- Cooper, K.N. 1984. *Lexique zime-français. Vūn tārī*. Sarh (Tchad): Centre d'Études Linguistiques.
- CT = Buck, A. de. 1935-1961. *The Egyptian Coffin Texts*. Vols. I-VII. Chicago: The University of Chicago Press.
- DAFA = Blachère, R. & Chouémi, M. & Denizeau, C. & Pellat, Ch. 1967-1976. *Dictionnaire arabe-français-anglais (Langue classique et moderne)*. Tomes I-III. Paris: Maisonneuve et Larose.
- Dallet, J.-M. 1982. *Dictionnaire qabyle-français: Parler des At Mangellat (Algerie)*. Paris: SELAF (Société d'études linguistiques et anthropologiques de France).
- Dalman, G.H. 1922. *Aramäisch-neuhebräisches Handwörterbuch zu Targum, Talmud und Midrasch*. Frankfurt a/M: J. Kaufmann Verlag.

- DCT = Molen, R. van der. 2000. *A hieroglyphic dictionary of Egyptian Coffin Texts*. Leiden: E.J. Brill.
- DELC = Vycichl, W. 1983. *Dictionnaire étymologique de la langue copte*. Leuven: Peeters.
- Delheure, J. 1984. *Dictionnaire mozabite-français*. Paris: Société d'Études Linguistiques et Anthropologique de France (SELAF).
- Delheure, J. 1987. *Dictionnaire ouargli-français*. Paris: Société d'Études Linguistiques et Anthropologique de France (SELAF).
- DG = Erichsen, W. 1954. *Demotisches Glossar*. Kopenhagen: Ejnar Munksgaard.
- Diakonoff, I.M. 1970. Problems of root structure in Proto-Semitic. *Archiv Orientalní* 38. 453-480.
- Diyakal, Ph. 1997. *Mushere-English dictionary*. Collection of words carried out by Mr. Ph.I. Diyakal started on September 10th, 1997 under the supervision of Herrmann Jungraithmayr (Univ. of Frankfurt). MS. 390 p.
- Djibrine, B.A.Z. & Montgolfier, P. de (etc.). Around 1973 (deduced by G. Takács). *Vocabulaire dangaléat: Kawo dajla*. (Place not indicated: publisher not indicated).
- DLE = Lesko, L.H. 1982, 1984, 1987, 1989. *A dictionary of Late Egyptian*. Vols. I, II, III, IV. Berkeley: B.C. Scribe Publications.
- DLU I = Olmo Lete, G. del & Sanmartín, J. 1996. *Diccionario de la lengua ugarítica*. Vol. I. [?](a/i/u)-l. Barcelona: Editorial AUSA.
- DLU II = Olmo Lete, G. del & Sanmartín, J. 2000. *Diccionario de la lengua ugarítica*. Vol. II. m-z. Barcelona: Editorial AUSA.
- Dolgopol'skij, A.B. 1966. Materialy po sravnitel'no-istoričeskoj fonetike kušitskijh jazykov: Gubnye i dental'nye smyčnye v načal'nom položenii. In Uspenskij, B.A. (ed.), *Jazyki Afriki: Voprosy struktury, istorii i tipologii*, 35-88. Moskva: Nauka.
- Dolgopolski, A.B. 1967a. La permutation des *m et *b initiaux dans les racines couchitiques. In *Il Congrès International des Africanistes: Communications de la délégation de l'URSS*, 3-17. Moscou: Nauka.
- Dolgopol'skij, A.B. 1967b. Struktura semitohamitskogo kornja v sravnitel'no-istoričeskom osveščeenii. In *Problemy jazykoznanija*, 278-282. Moskva: Nauka.
- Dolgopol'skij, A.B. 1973. *Sravnitel'no-istoričeskaja fonetika kušitskijh jazykov*. Moskva: Nauka.
- Dolgopolsky, A. 1983. Semitic and East Cushitic: Sound correspondences and cognate sets. In Segert, S. & Bodrogligeti, A.J.E. (eds.). *Ethiopian studies dedicated to Wolf Leslau*, 123-142. Wiesbaden: Otto Harrassowitz.
- Dozy, R. 1881. *Suppléments aux dictionnaires arabes*. Tomes I-II. Leiden – Paris: E. J. Brill – Maisonneuve.
- DRB = Nait-Zerrad, K. Since 1998. *Dictionnaire des racines berbères (formes attestées)*. Paris & Louvain: Peeters. [Continuous pagination in the subsequent fascicles.]
- DRS = Cohen, D. Since 1970. *Dictionnaire des racines sémitiques ou attestées dans les langues sémitiques*. Paris & La Haye: Mouton. Fascicule 3-: Leuven (1993-): Peeters. [With continuous pagination.]
- DUL = Olmo Lete, G. & Sanmartín, J. 2003. *A dictionary of the Ugaritic language in the alphabetic tradition*. Part One [[?](a/i/u)-k]. Part Two [l-z]. Leiden: E.J. Brill.
- EAANI = Takács, G. 2016. *Eryma Afroasiatica nova: Roots with initial labials (*b-, *p-, *f-, *m-)*. Berlin: Dietrich Reimer Verlag.
- Ebbell, B. 1939. *Die alt-ägyptische Chirurgie: Die chirurgischen Abschnitte des Papyrus E. Smith und Papyrus Ebers* (Skrifter utgitt av det Norske Videnskaps-Akademi (Oslo), II, Hist. Filos. Klasse, Nr. 2).
- Ebert, K.H. 1976. *Sprache und Tradition der Kera (Tschad)*. Teil II. Berlin: Dietrich Reimer.
- Ebobisse, C. 1979. *Die Morphologie des Verbs im Ost-Dangaleat (Guera, Tschad)*. Berlin: Dietrich Reimer Verlag.
- Ebobisse, C. 1987. *Les verbaux du dangaléat de l'est (Guera, Tschad): Lexiques français-dangaléat et allemand-dangaléat*. Berlin: Dietrich Reimer Verlag.
- EDE I = Takács, G. 1999. *Etymological dictionary of Egyptian*. Volume One: *A phonological introduction*. Leiden: E.J. Brill.
- EDE II = Takács, G. 2001. *Etymological dictionary of Egyptian*. Volume Two: *b-, p-, f-*. Leiden: E.J. Brill.
- Ehret, Ch. 1980a. *The historical reconstruction of Southern Cushitic phonology and vocabulary*. Berlin: Dietrich Reimer Verlag.
- Ehret, Ch. 1980b. *Kw'adza vocabulary*. MS. Los Angeles, California, IV + 17 p.
- Ehret, Ch. 1987. Proto-Cushitic reconstruction. *Sprache und Geschichte in Afrika* 8. 7-180.
- Ehret, Ch. 1995. *Reconstructing Proto-Afroasiatic (Proto-Afrasian): Vowels, tone, consonants, and vocabulary*. Berkeley – Los Angeles, California: University of California.
- Ehret, Ch. & Elderkin, E.D. & Nurse, D. 1989. Dahalo lexis and its sources. *Afrikanistische Arbeitspapiere* 18. 5-49.

- Eilers, W. 1978. Semitische Wurzeltheorie. In *Atti del Secondo Congresso Internazionale di Linguistica Camito-Semítica, Firenze, 16-19 aprile 1974*, 125-131. Firenze: Istituto di Linguistica e di Lingue Orientali, Università di Firenze.
- Eilers, W. 1987. Die zweiradikalige Basis der semitischen Wurzel. In Jungraithmayr, H. & Müller, W.W. (eds.), *Proceedings of the Fourth International Hamito-Semitic Congress*, 509-524. Amsterdam – Philadelphia: John Benjamins.
- Ember, A. 1926. Several Egypto-Semitic etymologies. *Oriens. The Oriental Review* 1. 5-8.
- ESS = Ember, A. 1930. *Egypto-Semitic studies*. Leipzig: The Alexander Cohut Memorial Foundation.
- FD = Faulkner, R.O. 1962. *A concise dictionary of Middle Egyptian*. Oxford: Clarendon Press.
- Fédry, J. (avec la collaboration de Khamis, J. & o/Nedjei, M.). 1971. *Dictionnaire dangaleat (Tchad)*. Thèse de 3^{ème} cycle, Institut National des Langues et Civilisations Orientales. Lyon: Afrique et Langage.
- Fitzpatrick, J.F.J. 1910-1911. Some notes on the Kwolla District and its tribes. *Journal of the Royal African Society* 10. 16-52, 213-22.
- Fleming, H.C. 1969. Asa and Aramanik: Cushitic hunters in Masai-Land. *Ethnology* 8(1). 1-36.
- Fleming, H.C. 1974. Omotic as an Afroasiatic family. *Studies in African Linguistics. Supplement* 5. 81-94.
- Fleming, H.C. 1976. Omotic overview. In Bender, M.L. (ed.), *The non-Semitic languages of Ethiopia*, 299-323. East Lansing: Michigan State University.
- Fleming, H.C. 1988. Mao's ancestor: Consonant phonemes of Proto-Mao. Stage one. In Gromyko, A.A. (ed.), *Proceedings of the Ninth International Congress of Ethiopian Studies (Moscow, 26-29 August 1986)*, vol. 5, 35-44. Moscow: Nauka.
- Fleming, H.C. 2000. *The eight 'blood' etymologies in Afrasian**. MS. (Paper presented at NACAL 28 = 28th North American Conference on Afroasiatic Linguistics, Portland, Oregon, 10-12 March 2000.)
- Foucauld, Ch. de. 1951-2. *Dictionnaire touareg-français, dialecte de l'Ahaggar*. Vols. I-IV. Paris: Imprimerie Nationale de France.
- Foulkes, H.D. 1915. *Angass manual: Grammar, vocabulary*. London: Kegan Paul, Trench, Trübner and Co.
- Frajzyngier, Z. 1985. *A Pero-English and English-Pero vocabulary*. Berlin: Dietrich Reimer Verlag.
- Frajzyngier, Z. 1991. *A dictionary of Mupun*. Berlin: Dietrich Reimer Verlag.
- Fronzaroli, P. 1965. Studi sul lessico comune semitico. III. I fenomeni naturali. *Rendiconti delle Sedute dell'Accademia Nazionale dei Lincei. Classe di scienze morali, storiche e filologiche*. Ser. VIII, vol. XX, fasc. 3-4. 135-150.
- Fronzaroli, P. 1971. Studi sul lessico comune semitico. VII. L'alimentazione. *Rendiconti delle Sedute dell'Accademia Nazionale dei Lincei. Classe di scienze morali, storiche e filologiche*. Ser. VIII, vol. XXVI, fasc. 7-12. 603-642.
- Fronzaroli, P. 1977. West Semitic toponymy in Northern Syria in the third millennium B.C. *Journal of Semitic Studies* 22(2). 145-166.
- GAG = Soden, W. von. 1952. *Grundriss der akkadischen Grammatik*. Roma: Pontificium Institutum Biblicum.
- Gasparini, A. 1983. *Sidamo-English dictionary*. Bologna: E.M.I.
- GÄSW = Calice, Graf F. von. 1936. *Grundlagen der ägyptisch-semitischen Wortvergleichung*. Wien: Selbstverlag des Orientalischen Institutes der Universität Wien.
- GB = Gesenius, W. (bearbeitet von Buhl, F.). 1962. *Hebräisches und aramäisches Handwörterbuch über das Alte Testament*. Unveränderter Neudruck der 1915 erschienenen 17. Auflage. Berlin – Göttingen – Heidelberg: Springer-Verlag.
- GHWb = Hannig, R. 1995. *Grosses Handwörterbuch Ägyptisch-Deutsch (2800-950 v. Chr.)*. Mainz: Verlag Philipp von Zabern.
- Gochal, G. 1994. *A look at Shik Ngas*. Jos: Jos University Press.
- Gordon, C.H. 1955. *Ugaritic manual*. Roma: Pontificium Institutum Biblicum.
- Gragg, G. 1982. *Oromo dictionary*. East Lansing, Michigan: Michigan State University.
- Grapow, H. 1914. Über die Wortbildungen mit einem Präfix m- im Ägyptischen. *Abhandlungen der Kgl. Preussischen Akademie der Wissenschaften*. 3-33.
- Greenberg, J.H. 1950. The patterning of root morphemes in Semitic. *Word* 6. 162-181.
- Greenberg, J.H. 1955. *Studies in African linguistic classification*. Branford, Connecticut: Compass Publishing Company.
- Greenberg, J.H. 1963. The languages of Africa. *International Journal of American Linguistics* 29.
- Hayward, R.J. 1982. Notes on the Koyra language. *Afrika und Übersee* 65. 211-268.
- HCVA I-V = Diakonoff, I.M. & Belova, A.G. & Militarev, A.Ju. & Porhomovskij, V.Ja. & Stolbova, O.V. 1993-1997. Historical comparative vocabulary of Afrasian. Parts 1-5. *St. Petersburg Journal of African Studies* 2-6.

- Heine, B. 1973. Vokabulare ostafrikanischer Restsprachen. Teil I. *Afrika und Übersee* 56. 276-283.
- Heine, B. 1975. Notes on the Yaaku language (Kenya). *Afrika und Übersee* 58(2). 119-138.
- Hellwig, B. 2000. *Goemai – English – Hausa dictionary*. MS. Draft. Printed out on 20 August 2000. 42 p.
- Hetzron, R. 1969. *The verbal system of Southern Agaw*. Berkeley, Los Angeles: University of California Press.
- Hodge, C.T. 1966. Hausa-Egyptian establishment. *Anthropological Linguistics* 8(1). 40-57.
- Hodge, C.T. 1976. An Egypto-Semitic comparison. *Folia Orientalia* 17. 5-28.
- Hodge, C.T. July 1978. *Hausa and English: Related languages*. MS. (Paper presented at the International Conference on Hausa Language and Literature, Bayero University, Kano, Nigeria). 3 p.
- Hodge, C.T. 1981a. Lislakh labials. *Anthropological Linguistics* 23(8). 368-382.
- Hodge, C.T. 1981b. Comparative evidence for Egyptian historical phonology. In Young, D.W. (ed.), *Studies presented to Hans Jakob Polotsky*, 401-413. East Gloucester: Pirtle and Polson.
- Hodge, C.T. 1988. Consonant ablaut in Lislakh. In Arbeitman, Y.L. (ed.), *Fucus: A Semitic/Afrasian Gathering in Remembrance of Albert Ehrman*, 267-276. Amsterdam – Philadelphia: John Benjamins.
- Hodge, C.T. 1991. Etymological reassessment. In Mukarovskiy, H.G. (ed.), *Proceedings of the Fifth International Hamito-Semitic Congress*, Band II, 95-105. Wien: Afro-Pub.
- Hoffmann, C. 1971. On the classification of Nancere. *Journal of West African Languages* 8(1). 5-12.
- Hoskison, J.T. 1983. *A grammar and dictionary of the Gude language (Chadic)*. The Ohio State University. (Doctoral dissertation.)
- HSED = Orel, V.É. & Stolbova, O.V. 1995. *Hamito-Semitic etymological dictionary*. Leiden: E.J. Brill.
- Hudson, G. 1989. *Highland East Cushitic dictionary*. Hamburg: Buske
- Huehnergard, J. 1991. Further South Semitic cognates to the Akkadian lexicon. In Kaye, A.S. (ed.), *Semitic studies in honor of Wolf Leslau on the occasion of his eighty-fifth birthday, November 14th, 1991*, vol. I, 690-713. Wiesbaden: Otto Harrassowitz.
- Illič-Svityč, V.M. 1966. Iz istorii čadskogo konsonantizma: Labial'nye smyčnye. In Uspenskij, B.A. (ed.), *Jazyki Afriki: Voprosy struktury, istorii i tipologii*, 9-34. Moskva: Nauka
- Illič-Svityč, V.M. 1971. *Opyt sravnenija nostratičeskikh jazykov (semitohamitskij, kartvel'skij, indoevropejskij, ural'skij, dravidijskij, altajskij)*. Vvedenie. *Sravnitel'nyj slovar' (b-K)*. Moskva: Nauka.
- JEA = *Journal of Egyptian Archaeology* (London).
- Johnstone, T.M. 1981. *Jibbāli lexicon*. London: Oxford University Press.
- Johnstone, T.M. 1987. *Mehri lexicon*. London: University of London.
- Jungraihtmayr, H. 1961. Beobachtungen zur tschadohamitischen Sprache der Jegu (und Jonkor) von Abu Telfan (Republique du Tchad). *Afrika und Übersee* 45. 95-123.
- Jungraihtmayr, H. 1962. *Wörterbuch der Angas-Sprache*. MS. Marburg.
- Jungraihtmayr, H. 1963. Die Sprache des Sura (Maghavul) in Nordnigerien. *Afrika und Übersee* 47. 8-89, 204-220.
- Jungraihtmayr, H. 1968. A comparative word list of the Ron languages (Southern Plateau, N. Nigeria). *Africana Marburgensia* 1(2). 3-12.
- Jungraihtmayr, H. 1970. *Die Ron-Sprachen: Tschadohamitische Studien in Nordnigerien*. Glückstadt: Verlag J.J. Augustin.
- Jungraihtmayr, H. 1971/1972. *Mulwi* (S. 1-13), *Masa* (S. 15-161). Wordlists. MS.
- Jungraihtmayr, H. 1973. *Dictionnaire birgit-français*. MS. Marburg.
- Jungraihtmayr, H. 1977. *Kofa wordlist*. MS. 18 p.
- Jungraihtmayr, H. 1978. *Wörterverzeichnis Mawa-Deutsch-Französisch: Index Deutsch-Mawa. Index Französisch-Mawa*. MS. 49 p.
- Jungraihtmayr, H. 1980. *Über die Mawa (Guera, Tschad): Ethnographische und linguistische Notizen*. MS. März 1980. 75 p.
- Jungraihtmayr, H. 1981. Inventaire des langues tchadiques. In Perrot, J. (ed.), *Les langues dans le monde ancien et moderne*. Paris: Éditions du Centre National de la Recherche Scientifique. 407-413.
- Jungraihtmayr, H. 1990a. *Lexique mokilko*. Berlin: Dietrich Reimer Verlag.
- Jungraihtmayr, H. 1990b. *Lexique mubi-français (Tchad oriental)*. MS. Frankfurt a/M. 50 p.
- Jungraihtmayr, H. (in collaboration with N.A. Galadima and U. Kleinewillinghöfer). 1991. *A dictionary of the Tangale language (Kaltungo, Northern Nigeria) with a grammatical introduction*. Berlin: Dietrich Reimer Verlag.
- Jungraihtmayr, H. 1993. *Lexique sibine (sumray)-français*. MS. Frankfurt a/M, versions of 20 April 1993 (?a-bákùgǝm̄), 7 June 1993 (bàlāwrān-gǝndārā), 17 June 1993 (gǝnfyn-sǝrā), 7 June 1993 (sǝr-?ywwāl). 67 p.

- Jungrauthmayr, H. 1999. *Mushere vocabulary*. Preliminary version composed on the basis of one part (the first 70 pages) of the material "Mushere Sprichwörter". MS. Frankfurt a/M. 20 p.
- Jungrauthmayr, H. 2004. Das Birgit, eine osttschadische Sprache – Vokabular und grammatische Notizen. In Takács, G. (ed.), *Egyptian and Semito-Hamitic (Afro-Asiatic) Studies in Memoriam Werner Vycichl*, 342-371. Leiden: E.J. Brill.
- Jungrauthmayr, H. & Adams, A. 1992. *Lexique migama*. Berlin: Dietrich Reimer Verlag.
- Jungrauthmayr, H. & Ibriszimow, D. 1993. *Sur les langues sarwa, gadang et miltu (Groupe sibine/sumray)*. MS. (Paper presented at the meeting of Groupe d'Études Tschadiques (Paris).)
- Jungrauthmayr, H. & Ibriszimow, D. 1994. *Chadic lexical roots*. Vol. I. *Tentative reconstruction, grading, distribution and comments*. Vol. II. *Documentation*. Berlin: Dietrich Reimer Verlag.
- Jungrauthmayr, H. & Shimizu, K. 1981. *Chadic lexical roots*. Vol. II. *Tentative reconstruction, grading and distribution*. Berlin: Verlag von Dietrich Reimer.
- KB = Koehler, L. & Baumgartner, W. 1994-2000. *The Hebrew and Aramaic lexicon of the Old Testament*. Vols. I-V. Leiden: E.J. Brill.
- KHW = Westendorf, W. 1977. *Koptisches Handwörterbuch*. Heidelberg: Carl Winter Universitätsverlag.
- Kidda, M.E. 1985. *Tangale phonology: A descriptive analysis*. Urbana, Illinois: University of Illinois at Urbana-Champaign. (Doctoral dissertation.)
- Kießling, R. & Mous, M. 2004. *The lexical reconstruction of West-Rift Southern Cushitic* (Kuschitische Sprachstudien 21). Köln: Rüdiger Köppe Verlag.
- Kogan, L.E. 1995. O nereguljarnyh refleksah protosemitskih laringalov v akkadskom jazyke. *Vestnik Drevnej Istorii* 2. 156-162.
- Kossmann, M. 1999. *Essai sur la phonologie du proto-berbère*. Köln: Rüdiger Köppe Verlag.
- Kraft, Ch.H. 1981. *Chadic wordlists*. Vols. I-III. Berlin: Dietrich Reimer Verlag.
- Lamberti, M. 1993. The Ari-Banna group and its classification. *Studi Italiani di Linguistica Teorica e Applicata* 22(1). 39-87.
- Lamberti, M. & Sottile, R. 1997. *The Wolaytta language*. Köln: Rüdiger Köppe Verlag.
- Lane, E.W. 1863-93. *An Arabic-English lexicon*. Vols. I-VIII. London & Edinburgh: Williams and Norgate.
- Lanfray, J. 1973. *Ghadames*. II. *Glossaire*. Alger: Le Fichier Periodique.
- Laoust, E. 1931. *Siwa*. I. *Son parler*. Paris: Librairie Ernest Leroux.
- Leger, R. 1992. Sprachproblem aus dem Westtschadischen. Kupto- und Kwamitexte. *Afrikanistische Arbeitspapiere* 28. 5-32.
- Lenssen, T. 1984. Studien zum Verb im Kwang (Tschad). *Africana Marburgensia*, Sonderheft 8.
- Leslau, W. 1938. *Lexique soqofri (sudarabique moderne), avec comparaisons et explications étymologiques*. Paris: Librairie C. Klincksieck.
- Leslau, W. 1945. *Gafat documents: Records of a South-Ethiopic language. Grammar, text and comparative vocabulary*. New Haven, Connecticut: American Oriental Society.
- Leslau, W. 1959. *A Dictionary of Moča (Southwestern Ethiopia)*. Berkeley, Los Angeles: University of California Press.
- Leslau, W. 1979. *Etymological dictionary of Gurage (Ethiopic)*. Vol. III. *Etymological section*. Wiesbaden: Otto Harrassowitz.
- Leslau, W. 1987. *Comparative dictionary of Ge'ez (Classical Ethiopic)*. Wiesbaden: Otto Harrassowitz.
- Levy, J. 1924. *Wörterbuch über die Talmudim und Midraschim nebst Beiträgen von Heinrich Leberecht Fleischer*. Zweite Auflage mit Nachträgen und Berichtigungen von Lazarus Goldschmidt. Bde. I-IV. Berlin & Wien: Benjamin Harz Verlag.
- Lienhard, R. & Giger, M. 1975. *Daba (parler de Pologozom): Description phonologique*. Yaoundé: Société Internationale de Linguistique.
- Lukas, J. 1936. Die Logone-Sprache im Zentralen Sudan. *Abhandlungen für die Kunde des Morgenlandes* 21(6).
- Lukas, J. 1937. *Zentralsudanische Studien*. Abhandlungen aus dem Gebiet der Auslandskunde, Hansische Universität, Reihe B, Band 45/24.
- Lukas, J. 1941. *Deutsche Quellen zur Sprache der Musgu in Kamerun*. Berlin: Dietrich Reimer Verlag.
- Lukas, J. 1971. Die Personalien und das primäre Verb im Bolanci (Nordnigerien). Mit Beiträge über das Karekare. *Afrika und Übersee* 55. 114-139.
- Majzel', S.S. (additions by and edited by Militarev, A.Ju.). 1983. *Puti razvitija kornevogo fonda semitskih jazykov*. Moskva: Nauka.

- Matsushita, Sh. 1972. *An outline of Gwandara phonemics and Gwandara-English vocabulary*. Tokyo: Tokyo Press.
- MDAIK = Mitteilungen des Deutschen Archäologischen Instituts, Abteilung Kairo (Wiesbaden).
- Meinhof, C. 1906. Linguistische Studien in Ostafrika: Fortsetzung. *Mitteilungen des Seminars für Orientalische Sprachen* 9. 278-333.
- Moreno, M.M. 1937. Appunti sulla lingua darasa. *Rendiconti della R. Accademia Nazionale dei Lincei. Classe di scienze morali, storiche e filologiche*. Ser. VI, vol. XIII, 211-240.
- Moscatti, S. & Spitaler, A. & Ullendorf, E. & Soden, W. von. 1964. *An introduction to the comparative grammar of the Semitic languages. Phonology and morphology*.² Wiesbaden: Otto Harrassowitz.
- Mouchet, J. 1950. Vocabulaires comparatifs de quinze parlers du Nord-Cameroun. *Bulletin de la Société d'Études Camerounaises* 29-30. 5-74.
- Mouchet, J. 1966. *Le parler daba: Esquisse grammaticale précédée d'une note sur l'ethnie daba, suivie de lexiques daba-français et français-daba*. Yaoundé: R.E.C.
- Mukarovskij, H.G. 1959. Altmediterranes Wortgut in Westafrika. *Wiener Zeitschrift für die Kunde des Morgenlandes* 55. 1-48.
- Mukarovskij, H.G. 1981. Einige hamitosemitische und baskische Wortstämme. In Jungraithmayr, H. & Mische, G. (eds.), *Berliner Afrikanistische Vorträge XXI: Deutscher Orientalistentag, Berlin 24.-29. März 1980*, 105-118. Berlin: Verlag von Dietrich Reimer.
- Mukarovskij, H.G. 1987. *Mande-Chadic common stock: A study of phonological and lexical evidence*. Wien: Afro-Pub.
- NBÄ = Osing, J. 1976. *Die Nominalbildung des Ägyptischen*. I-II. Mainz/Rhein: Verlag Philipp von Zabern.
- Netting, R.M. 1967. *Kofyar vocabulary*. MS.
- Newman, P. 1964. A word list of Tera. *Journal of West African Languages* 1(2). 33-50.
- Newman, P. 1977. Chadic classification and reconstructions. *Afroasiatic Linguistics* 5(1). 1-42.
- Newman, P. 1996. *Hausa and the Chadic language family: A bibliography* (African Linguistic Bibliographies 6). Köln: Rüdiger Köppe Verlag.
- Newman, P. 2022. *Comprehensive bibliography of Chadic and Hausa linguistics*. Fifth Edition. Bloomington: Indiana University IU Scholarworks.
- Nöldeke, Th. 1910. *Neue Beiträge zur semitischen Sprachwissenschaft*. Strassburg: Karl J. Trübner.
- Orel, V.É. 1995. From Hamito-Semitic to Ancient Egyptian: Historical phonology. *Folia Linguistica Historica* 16/1-2. 143-155.
- Orel, V.É. & Stolbova, O.V. 1989. Čadsko-egipetskie izoglossy v oblasti kul'turnoj leksiki. In *Lingvističeskaja rekonstrukcija i drevnejšaja istorija Vostoka*, čast' 1, 131-136. Moskva: Nauka.
- Orel, V.É. & Stolbova, O.V. 1990. K rekonstrukcii praafrazijskogo vokalizma. 3-4. *Voprosy Jazykoznanija* 2. 75-90.
- Orel, V.É. & Stolbova, O.V. 1992. On Chadic-Egyptian lexical relations. In Shevoroshkin, V. (ed.), *Nostratic, Dene-Caucasian, Austric and Amerind*, 181-203. Bochum: Brockmeyer.
- Ormsby, G. 1912-1913 & 1913-1914. Notes on the Angass language. *Journal of the Royal African Society* 12 (1912-1913). 421-424 & 13 (1913-1914). 54-61, 204-210, 313-315.
- Osing, J. 1976. *Die Nominalbildung des Ägyptischen*. I-II. Mainz/Rhein: Verlag Philipp von Zabern.
- Osing, J. 1978. Review of CED. *Journal of Egyptian Archaeology* 64. 186-189.
- Paradisi, U. 1960. Il berbero di Augila: Materiale lessicale. *Rivista degli Studi Orientali* 35(3-4). 157-177.
- Parker, E.M. & Hayward, R.J. 1985. *An Afar-English-French dictionary (with grammatical notes in English)*. London: School of Oriental and African Studies, University of London.
- Porhomovskij, V.Ja. & Stolbova, O.V. 1991. Čadskie jazyki. In Solncev, V.M. (ed.), *Jazyki Azii i Afriki*. IV, kniga 2, 323-383. Moskva: Glavnaja Redakcija Vostočnoj Literatury.
- Prasse, K.-G. 1969. *A propos de l'origine de h touareg (tahaggart)*. Det Kongelige Danske Videnskabernes Selskab. *Historisk-filosofiske Meddelelser* 43(3).
- Prasse, K.-G. & Alojaly, Gh. & Mohamed, Gh. 1998. *Lexique touareg-français*. Copenhagen: Museum Tusulanum Press, Université de Copenhagen.
- Prasse, K.-G. & Alojaly, Gh. & Mohamed, Gh. 2003. *Dictionnaire touareg-français (Niger)*. Copenhagen: Museum Tusulanum Press, University of Copenhagen.
- PT = Sethe, K. 1908, 1910. *Die altägyptischen Pyramidentexte*. Bde. I-II. Leipzig: J.C. Hinrichs'sche Buchhandlung.
- Rapp, E.L. & Benzing, B. 1968. *Dictionary of the Glavdá language*. Frankfurt am Main: Bible Society Frankfurt am Main.

- RdE = *Revue d'Égyptologie* (Paris).
- Reinisch, L. 1884. Die Chamirsprache in Abessinien. II. Chamir-deutsches Wörterbuch. *Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften. Phil.-hist. Classe* 106. 330-450.
- Reinisch, L. 1885. Die Quarasprache in Abessinien. II. Quarisch-deutsches Wörterbuch. *Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften. Phil.-hist. Classe* 109(1). 3-152.
- Reinisch, L. 1886. Die Ḳafar-Sprache. II. *Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften. Phil.-hist. Classe* 113(2). 795-916.
- Reinisch, L. 1887. *Wörterbuch der Bilin-Sprache*. Wien: Alfred Hoelder.
- Reinisch, L. 1895. *Wörterbuch der Bedawye-Sprache*. Wien: Alfred Hölder Verlag.
- Reinisch, L. 1902. *Die Somali-Sprache*. II. *Wörterbuch*. Wien: Alfred Hölder Verlag.
- Reinisch, L. 1904. Der Dschäbärdialekt der Somalispache. *Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften* 148(5). 1-88.
- Reutt, T.E. & Kogan, E.Z. 1973. Materialy po leksike jazykov margi i bura. In *Bespis'mennye i mladopis'mennye jazyki Afriki*, 83-147. Moskva: Nauka.
- Rossing, M.O. 1978. *Mafa-Mada: A comparative study of Chadic languages in North Cameroun*. Wisconsin: University of Wisconsin-Madison. (Doctoral dissertation.)
- Rössler, O. 1971. Das Ägyptische als semitische Sprache. In Altheim, F. & Stiehl, R. (eds.), *Christentum am Roten Meer*, Band I, 263-325. Berlin – New York: Walter de Gruyter.
- Rössler, O. 1981. Review of Ward, W.A.: The four Egyptian homographic roots b3. *Zeitschrift der Deutschen Morgenländischen Gesellschaft* 131. 384-386.
- Sachnine, M. 1978. Liste lexicale en Lamé du Cameroun. In Caprile, J.-P. & Jungraithmayr, H. (eds.), *Préalables à la reconstruction du proto-tchadique*, 195-201. Paris: SELAF.
- Sachnine, M. 1982. *Dictionnaire lamé-français. Lexique français-lamé*. Paris: SELAF.
- Sasse, H.-J. 1979. The consonant phonemes of Proto-East-Cushitic (PEC). *Afroasiatic Linguistics* 7(1). 1-67.
- Sasse, H.-J. 1980. Textproben der Boni-Sprache. *Afrika und Übersee* 63. 79-101.
- Sasse, H.-J. 1981. Neue Perspektiven im Afroasiatischen? In Jungraithmayr, Herrmann & Mieke, Gudrun (eds.), *Berliner Afrikanistische Vorträge. XXI. Deutscher Orientalistentag, Berlin 24.-29. März 1980*, 145-165. (Marburger Studien zur Afrika- und Asienkunde, Serie A, Band 28). Berlin: Verlag von Dietrich Reimer.
- Sasse, H.-J. 1982. *An etymological dictionary of Burji*. Hamburg: Helmut Buske Verlag.
- Schuh, R.G. 1978. *Bole-Tangale languages of the Bauchi area (Northern Nigeria)*. Berlin: Dietrich Reimer.
- Schuh, R.G. 1981. *A dictionary of Ngizim*. Berkeley, California: University of California.
- SD = Beeston, A.F.L. & Ghul, M.A. & Müller, W.W. & Ryckmans, J. 1982. *Sabaic dictionary (English-French-Arabic). Dictionnaire sabéen (anglais-français-arabe)*. Louvain-la-Neuve – Beyrouth: Peeters – Librairie du Liban.
- Sethe, K. 1959. *Ägyptische Lesestücke zum Gebrauch im akademischen Unterricht. Texte des Mittleren Reiches*. Dritte unveränderte Auflage. Hildesheim: Georg Olms Verlagsbuchhandlung.
- Shimizu, K. 1978. The Southern Bauchi group of Chadic languages: A survey report. *Africana Marburgensia*. Special Issue 2. 1-50.
- Siebert, R. 1994-5. A survey of the Male language. *Survey of Little-Known Languages of Ethiopia (S.L.L.E.) Reports* 24. 1-12.
- Sirlinger, E. 1937. *Dictionary of the Goemay language*. Jos, Nigeria: Prefecture Apostolic of Jos.
- SISAJA I = D'jakonov, I.M. & Belova, A.G. & Četveruhin, A.S. & Militarev, A.Ju. & Porhomovskij, V.Ja. & Stolbova, O.V. 1981. Sravnitel'no-istoričeskij slovar' afrazijskich jazykov. Vypusk 1. p-ḡ-b-f. In *Pis'mennye pamjatniki i problemy istorii kul'tury narodov Vostoka. XV godičnaja naučnaja sessija Leningradskogo Otdelenija Instituta Vostokovedenija Akademii Nauk SSSR*, 3-127. Moskva: Nauka.
- Skinner, N. 1977. North Bauchi Chadic languages: Common roots. *Afroasiatic Linguistics* 4(1). 1-49.
- Skinner, N. 1996. *Hausa comparative dictionary*. Köln: Rüdiger Köppe Verlag.
- Stolbova, O.V. 1987. Sravnitel'no-istoričeskaja fonetika i slovar' zapadnočadskih jazykov. In Porhomovskij, V.Ja. (ed.), *Afrikanskoe istoričeskoe jazykoznanie. Problemy rekonstrukcii*. Moskva: Nauka. 30-268.
- Stolbova, O.V. 1996. *Studies in Chadic comparative phonology*. Moscow: "Diaphragma" Publishers.
- Stolbova, O. 2016. *Etimologičeskij slovar' čadskih jazykov*. Moscow: Institute of Oriental Studies of the Russian Academy of Sciences.
- Taïfi, M. 1991. *Dictionnaire tamazight-français (parlers du Maroc central)*. Paris: L'Harmattan-Awal.
- Takács, G. 1994. Egyptian sb3 "star" and sb3 "to teach". *Lingua Posnaniensis* 36. 173-181.

- Takács, G. 1999a. *Development of Afro-Asiatic (Semitic-Hamitic) comparative-historical linguistics in Russia and the former Soviet Union*. München, Newcastle: Lincom Europa.
- Takács, G. 1999b. The “Aleph problem” in Ancient Egyptian. *Rocznik Orientalistyczny* 52(1). 101-122.
- Takács, G. 1999c. Recent problems of Egyptian historical phonology at the present stage of comparative-historical Afroasiatic linguistics. In Lecarme, J. & Lowenstamm, J. & Shlonsky, U. (eds.), *Studies in Afroasiatic grammar 2. Papers from the Third Conference on Afroasiatic Languages, Sophia Antipolis, 1996*, 345-378. The Hague: René Moulter.
- Takács, G. 2000. South Cushitic consonant system in Afro-Asiatic context. *Afrikanistische Arbeitspapiere* 61. 69-117.
- Takács, G. 2003. Aegyptio-Afroasiatica XVIII. *Cahiers Caribéens d'Égyptologie* (Schœlcher, Martinique) 5. 187-202.
- Takács, G. 2004. *Comparative dictionary of the Angas-Sura languages*. Berlin: Dietrich Reimer Verlag.
- Takács, G. 2009a. Aegyptio-Afroasiatica IX (old version). In Shevoroshkin, V.V. & Sverdrup, H.U. (eds.), *Bygone voices reconstructed: On language origins and their relationships. In honor of Aharon Dolgopolski*, 189-210. Copenhagen: Privatforlaget: Underskov Publishers ApS.
- Takács, G. 2009b. Mubi-Toram lexicon in Chadic and Afro-Asiatic perspective I: Initial *b-. *Acta Orientalia Acad. Scient. Hung.* 62(3). 315-336.
- Takács, G. 2011. Semitic ghayin in an Afro-Asiatic perspective. In Pennacchietti, F. & Mengozzi, A. (eds.), *Proceedings of the 3rd Meeting of the IACS (Torino, Oct. 2008)* published in: *Aula Orientalis* 29. 139-154.
- Tosco, M. 1989. *The classification of Dahalo: Another perspective*. MS. (Paper presented at the 2nd International Congress on Cushitic and Omotic Languages, Turin.)
- Tosco, M. 1991. *A grammatical sketch of Dahalo*. Hamburg: Helmut Buske Verlag.
- Tourneux, H. 1978a. *Le mulwi ou vulum de Mogroum (Tchad): Langue du groupe musgu – famille tchadique*. Paris: Centre National de la Recherche Scientifique (CNRS).
- Tourneux, H. 1978b. Racine verbale en mulwi. In Caprile, J.-P. & Jungraithmayr, H. (eds.), *Préalables à la reconstruction du proto-tchadique*, 89-93. Paris: SELAF.
- Tourneux, H. 1991. *Lexique pratique du munjuk des rizières: Dialecte de Pouss*. Paris: Librairie Orientaliste Paul Geuthner.
- Tourneux, H. & Seignobos, Ch. & Lafarge, F. 1986. *Les Mbara et leur langue (Tchad)*. Paris: Société d'Études Linguistiques et Anthropologiques de France.
- Trombetti, Alfredo. 1923. *Le origini della lingua basca* (Memorie dell'Accademia delle Scienze dell'Istituto di Bologna, classe di scienze morali, serie II, tomi 8-9, 1923-5). Bologna: Arnoldo Forni Editore.
- Venberg, R. 1975. Phonemic statement of the Peve language. *Africana Marburgensia* 8(1). 26-43.
- Voigt, R.M. 1998. Vergleichende Tschadistik heute – Fortschritte in der tschadischen und semitohamitischen Komparatistik. Besprechung von Jungraithmayr, H. & Ibriszimow, D.: *Chadic Lexical Roots*. Vols. I-II. *Orientalistische Literaturzeitung* 93(6). 607-619.
- Vycichl, W. 1934. Hausa und Ägyptisch: Ein Beitrag zur historischen Hamitistik. *Mitteilungen des Seminars für Orientalische Sprachen an der Friedrich-Wilhelms-Universität zu Berlin* 37. 36-116.
- Vycichl, W. 1958. Grundlagen der ägyptisch-semitischen Wortvergleiche. *Mitteilungen des Deutschen Archäologischen Instituts, Abteilung Kairo* 16. 367-405.
- Vycichl, W. 1983. *Dictionnaire étymologique de la langue copte*. Leuven: Peeters.
- Vycichl, W. 1990. *La vocalisation de la langue égyptienne*. Tome I^{er}. *La phonétique*. Le Caire: Institut Français d'Archéologie Orientale.
- Ward, W.A. 1975. The biconsonantal root *b3 and remarks on bilabial interchange in Egyptian. *Zeitschrift für Ägyptische Sprache* 102. 60-67.
- Ward, W.A. 1978. *The four Egyptian homographic Roots b3*. Rome: Biblical Institute Press.
- Wb = Erman, A. & Grapow, H. 1957-1971. *Wörterbuch der ägyptischen Sprache*. Bde. I-V.² Berlin: Akademie-Verlag.
- Wedekind, K. 1976-9. Sidamo, Gedeo (Derasa), Burji: Phonological differences and likenesses. *Journal of Ethiopian Studies* 14. 131-176.
- Weibegué, Ch. & Palayer, P. 1982. *Lexique lele-français*. Sarh, Tchad: Centre d'Études Linguistiques.
- WKAS I = Kraemer, J. & Gätje, H. & Spitaler, A. & Ullmann, M. 1970. *Wörterbuch der klassischen arabischen Sprache*. Bd. I: k. Wiesbaden: Otto Harrassowitz.
- WMT = Deines, H. von & Westendorf, W. 1961-1962. *Wörterbuch der medizinischen Texte*. Bde. I-II. Berlin: Akademie-Verlag.
- Wölfel, J.D. 1955. Eurafrikanische Wortschichten als Kulturschichten. *Acta Salamanticensia. Filosofia y letras* 9(1).

- WUS = Aistleitner, J. 1963. *Wörterbuch der ugaritischen Sprache*. Berichte über die Verhandlungen der Sächsischen Akademie der Wissenschaften zu Leipzig. Phil.-hist. Klasse 106(3).
- Zaborski, A. 1971. Biconsonantal verbal roots in Semitic. *Zeszyty Naukowe Uniwersytetu Jagiellońskiego. Prace językoznawcze* 5. 51-98.
- Zaborski, A. 1975. Material for a comparative dictionary of Cushitic languages: Somali-Galla comparisons. In Bynon, J. & Bynon, Th. (eds.), *Hamito-Semitic*, 321-331. The Hague: Mouton.
- Zadok, R. 1991. Notes on the West Semitic material from Emar. *Annali, Istituto Universitario Orientale di Napoli* 51(2). 113-137.

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**Semito-Hamitic or Afro-Asiatic consonantism and lexicon:
Episodes of a comparative research I
(Part 1: The long century of Semito-Hamitology
until the middle of the 20th century)¹**

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A retrospective account on past comparative research on Afro-Asiatic (AA) or Semito-Hamitic / Hamito-Semitic (SH/HS, resp.) phonology (first of all consonantism, also root structure) and lexicon, segmented into episodes according to diverse trends (often overlapping in time) is now under way and will be presented part by part in a series of papers. The present paper contains the first ever direction of this research, labelled “Semito-Hamitology” covering studies seeking, in their conception, the “African”, i.e. “Hamitic” kinship of Semitic, without a permanent *communis opinio* over the whole century of this ‘trend’ (better: amalgamate era) regarding the limits of the family.

Keywords: Afro-Asiatic, comparative linguistics, phonology, lexicon, science history.

Introduction

The whole history of Afro-Asiatic comparative linguistics, examined in all its aspects, would demand a whole of a heavy monograph. Even merely the (perhaps most neglected and evidently most controversial) segment of comparative consonantism and root etymology, systematically only studied since the late 19th cent., may well result in a thin

¹ This paper has been completed in the frames of my research project “Micro-reconstructions in the Southern Afro-Asiatic (Semito-Hamitic) lexical root stock” facilitated by the research grant “Advanced Research in Residence” (ARR) of the University of Łódź (UŁ), which I gratefully acknowledge in this place. My special thanks go to Prof. K.T. Witzczak (Dept. of Classical Philology, UŁ) for selflessly supporting my ARR project facilitating my ongoing research on the AA root stock. To Prof. em. W.G.E. Watson (Morpeth, UK), the doyen of Ugaritic philology, I am equally indebted for his friendly favour of reading the draft version of this paper and improving its English style.

volume, for which the present author has already released a number of pilot studies.² The reader is invited to a longer journey throughout trends, phases, chapters of a by far not uniform, rather eclectic and utmost controversial and so hardly explored gigantic field of research on the comparative-historical phonology and lexicon of Afro-Asiatic (Semitic-Hamitic), the oldest and perhaps most puzzling linguistic family in world history (supposed to have sprung from one of the earliest neolithic communities) – guided but not led by me as my aim has been by working out these Episodes, by revealing approaches and tendencies, to make the wider readership also think about these facts of our scholarly literature and be conscious of the origins, background, reasons underlying the rather strangely retarded state-of-the-art of this endangered domain. By offering typical lines of thoughts formulated by the diverse authors *expressis verbis*, the linguistic mentality and attitude are hoped to be revealed and manifested. May the readers eventually judge themselves and form an own opinion by this guidance.

More than two decades ago (1999), I offered an all too sketchy and all too Egyptian-oriented historical overview of this immense, albeit undeservedly little cultivated, domain where I only isolated three trends (EDE I 1-8). Albeit its periodization and segmentation structure elaborated therein³ can be maintained two decades later also, an overall survey of the whole AA domain must comprise by far more directions of comparative research phonology and lexicon. The enormous diversity, and a turbulent co-existence of trends and directions of research, and, sometimes, even, so to say, an all too menacing evolution of certain tendencies have altogether given me sufficient reasons for preparing a comprehensive retrospective evaluation thereof in the period of the past almost one and a half century.

This paper too, is purely and only dealing with the history of that segment of research where the root stock and consonantal inventory of the cognate branches have been subject to a comparative analysis. Other segments of comparative grammar are excluded, all the more since the history of the relatively more coherent research requires a pretty much different segmentation. Not wishing to reproduce here all those details of my old, primarily Egypto-centric, overview available in EDE I, but keeping the periodization suggested by me in 1999, beside surveying purely the underlying taxonomies *ohne Anspruch auf die Vollständigkeit*, I would like to focus here better on the typical tendencies and stress certain emphases in these trends which are specially and only examined in the little-frequented domain of comparative AA phonology and lexicon, including AA root structure,

² Cf. the volume on the Russian story of comparative AA studies (Takács 1999a), also the studies on the three decades of Muscovite Chadic comparative linguistics (Takács 2009b: 211ff.; 1999b: 361ff.) as well as his series of a critical evaluation of the activities and individual output by some of the most fruitful (mostly either Viennese or Muscovite) authors of our field over the past century or so like F. von Calice (Takács 2006a: 139), A. Ember (Takács 2005: 78ff.; 2006b: 145ff.), W. Vycichl (Takács 2002: 19ff.: his bibliography: Takács 2004: ix-xi: his life; Takács 2006c: 154ff.: his research), I.M. Diakonoff (Takács 2003a: v-vii, bibliography: Takács 2003b: ix-xii), O. Röessler (Takács 2006d: 90ff.; 2007: 5ff.), V.M. Illič-Svityč (Takács 1999b: 361ff.), A.B. Dolgopolskij (Takács 2009a: 9-10; 2012: 19ff.).

³ This is part of the author's long-range project (ongoing since 1997) for a comprehensive *wissenschaftliche* survey of the research on Afro-Asiatic comparative phonology and lexicon. The special grouping of the authors in the trends, which the individual episodes are devoted to, represents the intellectual property of the author.

without a wish to present and cover here the full spectrum of comparative activities in all kinds of AA grammar by the authors, let alone for the gigantic output by well-known authors like Rössler, Greenberg or Diakonoff. Thus, some outstanding works may well be touched upon briefly and only with reference to comparative consonantism and lexicon, while sometimes perhaps more emphasis is laid upon some lesser-known or out-dated segments of our domain if these have an impact on the evolution of a trend.

What this series of papers is not at all intended to yield is encyclopaedically presenting the whole inventory of the works ever published in the chosen research field, which should be the objective of a separate volume. Although the entire literature of comparative AA is not in target zone of my series of papers and will be, as a rule, left unconsidered here, still, certain views pertaining to the reconstruction problems appear within works on theoretical issues, on AA comparative morphology, on the individual AA branches, which will thus be quoted here. Otherwise, these issues are going to be subject to a separate monograph on the history of the whole comparative AA domain. Instead, what I have had in my mind is an as complete as possible presentation of the extreme plurality of approaches and views, however astonishing these may look, especially placed beside each other in one overview where I did my best to reduce my own subjective opinion on the minimum by quoting directly as many as possible of thoughts considered typical or essential for a trend. The only task herein has been to present the trends as full as possible with all their pros and cons, irrespective of and often against the conviction of the present author, trying not to actively take part in these debates in a comprehensive overview like this – in the hope that even if not in every single detail, but at least sometimes, it may be more revealing, rather than “what?”, better to see the “how?”. All this is done, on the one hand, to awaken, in a way, the attention of the remaining and potential authors of our all too divided, atomized, little-cultivated orphan domain and, on the other hand, in order to make the wider scientific audience conscious of how close or distant the state-of-the-art of this comparative linguistic field stands to that of neo-grammarians Indo-European research, say, a century before.

What this study on the history of inter-branch comparison is not going to offer either is, a beyond doubt highly urgent and long desirable retrospective survey of the state-of-the-art in reconstructing the consonantal systems and root stock of the individual AA branches (such as Cushitic, Omotic, Chadic) which should be subject to other extensive follow-up studies.

Previous overviews in general

“Eine umfassende Geschichte der Semitoamitistik gibt es bislang nicht, nur kurze Abrisse, die höchstens einige Schlaglichter und einzelne Epochen in der Entwicklung... werfen” as rightly stated about the state of the affair more than three decades ago (which is valid, by the way, until now) by R.M. Voigt (1988: 155), whose general survey, however, instead of offering a comprehensive survey of all the trends and periods by his day, also entailed just part of them. So will it remain with this paper too, which focuses,

as specified above, just on the most neglected and controversial segments of comparative phonology and lexicon in our vast Afro-Asiatic research domain.

M. Cohen (1947) offered an almost exhaustive annotated bibliography and history of AA researches in general, which F. Hintze (1951) has neatly complemented in his very thorough and sharp-minded review. In the following half of century or so, a number of partial overviews were published: e.g., Hodge 1970, 1971, 1976, Köhler 1975, Burrini 1978-9, Mukarovsky 1981, Petráček 1984 (on the research in the 3rd quarter of the 20th cent., where, typically and unfortunately, comparative phonology had hardly any echo among many other theoretical issues).⁴ The lengthy chapter on the state-of-the-art of AA studies (“Stav hamitosemitských studií”) from the only available university course on AA, written in Czech, by K. Petráček (1989: 10-83, §1.) contains a number of useful sections.⁵ R.M. Voigt (1988: 155-164; 2001: 1318-1323) has offered perhaps the most original and fairly (albeit not in every detail) objective survey of some selected older episodes of the comparative SH research (with an original, albeit somewhat different periodization), which is especially useful as for the 19th century research and gets all the more unilateral, neglectful as for its progress in the 20th century. Less detailed is “le bilan de la linguistique chamito-sémitique des derniers cinquante ans” examined (since the

⁴ Segmented by him into chapters like “La parenté des langues chamitosemitiques” (pp. 426-427), “Les types de comparaison” (pp. 427-428), “La reconstruction interne” (pp. 428-429), “Le système du développement diachronique” (pp. 434-435), “D’autres problèmes du comparativisme” (pp. 438-439).

⁵ Petráček’s (1989: 10-17, §1.1) all too general “survey of results in SH comparative linguistics” (“Hamitosemitská srovnávací jazykověda. Přehled výsledků”) yields no more than a discussion of some AA works by C.T. Hodge (pp. 10-11), followed by a short list of the AA conferences and *Festschriften* up to date (Petráček 1989: 12-14), a very short summary of some studies by W. Vycichl (1978) and H.-J. Sasse (1981) as for “evaluating the perspectives” of comparative AA (Petráček 1989, 14: “Zhodnocení a perspektivy”), an enumeration of studies dealing with the comparative methodology (Petráček 1989: 14-15), a small list of works on the history of our research – with a few gaps, unfortunately (Petráček 1989: 15), a brief and incomplete section on the very few periodical series of our comparative domain like GLECS sessions, the AAL (ed. by R. Hetzron), and the African Marburgensia (ed. by H. Jungrathmayr) (Petráček 1989, 15: “Rozvoj výzkumu”), list of countries where AA studies were pursued (Petráček 1989: 16: “Centra studií”), and an account on the past of AA research in Czechia (Petráček 1989: 16-17: “Tradice v našich zemích”). Then, Petráček (1989: 18-22, §1.2.) surveyed the history of AA comparative studies since Meinhof 1912 up to his day roughly and very little annotated (“Souborná spracování hamitosemitských jazyků (HS) a rekonstrukce prajazyka (P-HS)”). After a list of linguistic maps in the AA domain (Petráček 1989: 23-25, §1.3.): “Mapy hamitosemitských jazyků”) and a “Bibliografie hamitosemitské jazykovědy” (Petráček 1989: 26-27, §1.4.), Petráček singled out the overviews of the state-of-the-art of internal comparison in the individual AA branches, like that of Semitic (Petráček 1989: 28-44, §1.5.): “Semitská srovnávací jazykověda”), which is out of our scope in this paper, except for his section on Egyptian which offers in fact “Egyptština a hamitosemitská srovnávací jazykověda” (Petráček 1989: 45-64, §1.6.) hiding in itself, i.e., a noteworthy section on “Egyptština a hamitosemitské jazyky ...” (Petráček 1989: 49-54, §1.6.2.1.) with precious lightly annotated lists of studies comparing Egyptian with the AA branches, followed by “Egyptština a africké jazyky” (Petráček 1989: 54-55, §1.6.2.2.), “Egyptština a asijské jazyky (nostratické, makroboreální, Nilal, Lislakh, indoevropské)” (Petráček 1989: 55-56, §1.6.2.3.), a very exciting, inspiring section on the impact of AA comparison on the research of Egyptian prehistory (Petráček 1989: 56-58, §1.6.2.4.: “Srovnávací jazykověda a egyptské dějiny”). Similarly, the special section within Cushitic is devoted to “Význam kušitské jazykovědy pro srovnávací hamitosemitskou jazykovědu” (Petráček 1989: 66-67, §1.7.2.), whereas, after a very brief Omotic section (Petráček 1989: 72-73, §1.8.) and a poor one on Berbero-AA (Petráček 1989: 74, §1.9.1.), the Chadic one (Petráček 1989: 80-88, §1.10.) contains a precious overview of the research on the external ties of Chadic (“Vnější vztahy čadských jazyků”, Petráček 1989: 82-83, §1.10.2.).

publication of Cohen 1947) by A. Zaborski (1998: 23) presenting rather the tendencies in our research field. In spite of the promising title of his paper, H. Satzinger (1999: 367-374) released a by far incomplete survey of SH/AA comparative phonological and lexical research of certain episodes, which is pretty detailed as for what had happened over the first century of comparative SH/AA studies up to M. Cohen's 1947 *magnum opus* (pp. 367-370), but suddenly gets rather taciturn (in less than 17 lines!) as to the details about how "seit Greenbergs grundlegender Arbeit ist die Forschung auf verschiedenen Wegen weitergeschritten" in the comparative-historical study of the AA branches, where Satzinger, having briefly mentioned a few homeland theories, immediately switched to a pure reproduction of the copied-in AA family tree models (pp. 371-372), then again one further entry (p. 373) deals with some *Gemeinplätze* about Chadic and Cushito-Omotiic lexical reconstruction. A very brief history of the research was offered by P. Vernus (2000: 169-172, §1-§2) too, focusing on the affiliation of Egyptian retrospectively. Then, in the epochal vol. 20 of the IOS, in his chapter on the "1. History of the discipline" (p. 265), R.M. Voigt (2002) gave us just a brief survey of the minimal items of what he called comparative "Semitohamitic".

I. "Hamitology" vs. "Semitic-Hamitology"

The long out-dated and ambiguous label of "Hamitology" is used here for the (in many ways long outdated) dubious amalgamate (better than to be called trend) of pre-Greenbergian comparative researches (running parallel to the "old school" of Egypto-Semitic comparison) on the kinship of the supposed African branches of AA identified as cognates to Semitic. This is not to mean all the authors of this era to have been misguided by the Semitic vs. Hamitic dichotomy implied by this term. H.-J. Sasse (1981a) distinguished between the authors of this long period as the adherents of "Die hamitische These" (Sasse 1981a: 132-135, §2.2) vs. "Die Schwesterfamilien-These" (Sasse 1981a: 135-136, §2.3), but we do not wish to segment this era that way, since we consider some other traits (better: controversies) more essential from the standpoint of phonology and lexicon regarding this very vague and long beginning of the comparative AA research over the century from the mid-19th century up to M. Cohen's *Essai comparatif*, namely: (1) no agreement on the limits of "Hamitic"⁶ and thus also of Semitic-Hamitic or Afro-Asiatic, (2) lack of convincing and sufficient comparative wordlists, hence: (3) failure in establishing regular consonantal correspondences among the examined languages. I regard Cohen 1947 as a pioneering, albeit highly disputable attempt at overcoming these deficiencies and so it can only be the culmination of this eclectic era.

⁶ C. Brockelmann (1950: 59) speaks about the "von R. Lepsius zuerst sogenannten hamitischen Sprachen Nord- und Ostafrikas" suggesting that he was the first to use this term. At any rate, already R. Lepsius (1863) classified Egyptian, Berber and Cushitic as part of "Hamitic" as opposed to Semitic, whence, as concluded by M. Bechhaus-Gerst (1998: 112), it appears that "Lepsius was one of the few who did not believe in the close relationship between Semitic and Egyptian." Later, though, R. Lepsius (1880) conceived "die Sudansprachen als Misch-Negersprachen aus den Bantu-Negersprachen und den hamitischen Sprachen" (Satzinger 1999: 367). G. Maspero, in turn, "did not challenge the Semitic bias, but ... laid particular stress on the relationship to the Berber languages of North Africa" (Bechhaus-Gerst 1998: 111).

Since as an etymologist I feel not prepared as yet for discussing some hard theoretical issues around “Hamitic” in general (done by others) that lie beyond the scope of this overview strictly targeting the history of research on AA comparative phonology and lexicon, I do not consider it as my task as yet, even *wissenschaftsgeschichtlich*, to encyclopaedically survey and elaborate here all the controversies and problems with the often misused term “Hamitic” leading sometimes to darker pages of racism in the history of European science with impact even to certain segments of the “modern” research.⁷ But this sensitive issue will not be avoided either in a brief retrospective survey below⁸ or

⁷ Sasse (1981a: 135, §2.2) on the racial impact of “Hamitic”: “Die Hamitenhypothese hat nicht nur auf das vergleichende Studium der afroasiatischen Sprachen, sondern auf die gesamte Afrikanistik einen außerordentlich schädlichen Einfluß ausgeübt. Die Vorstellung des hochgewachsenen kaukasoiden Hamiten, der aufgrund seiner überlegenen geistigen Disposition und seiner effektiveren Waffen einen großen Teil des von negroiden Bevölkerung bewohnten Kontinents unterwirft, ging in zahlreiche ethnologische und afrikanistische Handbücher und enzyklopädische Lexika ein und setzte sich nachhaltig in den Vorstellungen der gelehrten Welt über die Vorgeschichte Afrikas ein.”

⁸ The diverse nuances of the term it used to be mentioned by the diverse authors would be worth a special study. To evaluate all these aspects is not our task here. At any rate, some sample quotations from works by some leading authors are offered here as to how the sense of “Hamitic” changed over the reviewed period. It was first used in Adelung’s *Mithridates* (1806: 300, cf. Burrini 1978-9: 114f., quoted in Newman 1980, 7, fn. 10 too with a vague reference; Kaye and Daniels 1992: 430) and then by A. d’Abbadie (1845, cf. Köhler 1975: 277). Voigt (2001: 1319): “Der später so gängige Begriff ‘hamitisch’ taucht in der frühen Zeit noch nicht bzw. noch nicht in der späteren Bedeutung auf. A. d’Abbadie scheint diesen Terminus zum ersten Mal verwendet zu haben. Er nennt ‘the important family of Ethiopian languages’ ‘Chamitic’ ... Wenige Jahre später faßt er unter der ‘famille kamitique’ neben den Agausprachen auch ‘Yamma, Pays des Janjaro’, Gonga, Kafa und viele andere Sprachen zusammen, während er das Kambata, Galla, Saho, ‘Afar, Somali, Hadiya u.a. einer ‘famille sous-kamitique’ zurechnet”. Then, Hamitic was applied by J.L. Krapf (1850, 1858) as a synonym of “schwarzafrikanisch” for the first (?) time as stated by H. Satzinger (1999: 367), who summed up the general use of this term “ansonsten speziell als Oberbegriff für diejenigen nichtsemitischen Sprachen Afrikas, die in ihrer Grammatik das Genus von Substantiven und Pronomina unterscheiden ... vielmehr wird der Begriff Hamitisch in erster Linie zur Abgrenzung gegenüber besser definierten Sprachgruppen verwendet, wie Semitisch und Bantu, aber auch gegenüber den ‘Sudansprachen’, die reziprok auf einer ähnlichen Abgrenzung beruhen”. Studying the “Divisions internes du chamito-sémitique”, Cohen (1934) followed how the limits of “Hamitic” were changing in this phase: “Plus tard, au xx^e siècle, des égyptologues, entraînés par leurs connaissances des faits sémitiques, ont tendu à constituer un groupement égypto-sémitique. Certains savants ont alors attribué le nom de chamitique à un groupement restreint fait des éléments restés en dehors de l’égypto-sémitique, à savoir les berbères et le couchitique (en y joignant parfois d’autres langues africaines).” What is meant by *historische Hamitistik* was determined by W. Vycichl (1935: 76) as follows: “Mit dem Terminus hamitisch im sprachwissenschaftlichen Sinne bezeichnet man seit Richard Lepsius eine Reihe afrikanischer Sprachgruppen, die charakteristische Erscheinungen mit dem Semitischen teilen.” This term, whose signification had undergone a few changes since the mid-19th cent., was defined by J.H. Greenberg (1962: 82): “Although the term Hamitic came into general linguistic usage, it was far from being well defined. On the one hand, the exact languages to be included differed from writer to writer, though in general all agreed on Egyptian, Berber and Cushitic. Even here usage differed, since some assigned Egyptian a separate status between Semitic and Hamitic. Further, in the presence of the rival hypothesis of a relation between Semitic and Indo-European ..., some scholars considered Hamitic to be a separate family whose relationship to Semitic must be regarded as unproven. Others, confident of this connection, used the hybrid Hamito-Semitic as a general designation for the entire family. It is beyond the scope of this article to consider the details of all the various opinions on what came to be the ‘Hamitic’ problem. One extreme point of view ... should be briefly mentioned, since by the reactions it evoked ..., it has colored discussion of the problem virtually up to the present. ... the thesis ... by Carl Meinhof ... In this work, the term ‘Hamitic’ was extended to include ... such other languages as that of the Fulani ..., the ... Masai ... and ... the Hottentots ...” In addition, after

whenever it occurs with the individual authors of this period, let alone the reasons of J.H. Greenberg for rightly reckoning with this ill-founded label (specified below).

Beside his (Cohen 1947: 3-22) immense and exemplary, albeit incomplete (extended in Hintze 1951: 66-67) bibliographical thesaurus of SH comparative studies, which has rightly been frequently quoted over the past decades, M. Cohen (1947: 23-26) also offered a rather eclectic analysis “des études chamito-sémitiques du dernier siècle”, i.e., the first half of the 20th century covering the “classical” and “post-classical” phases of “Hamitology”, in a not too consequent classification.⁹ A.S. Kaye and P.T. Daniels (1992: 430-432),

a profound discussion as to how the untenable racial aspect of the “Hamitic hypothesis” evolved over centuries in European science, E.R. Sanders (1969: 531) concludes that “It would be well-nigh impossible to point to an individual and recognize in him a Hamite according to racial, linguistic and cultural characteristics to fit the image that has been presented to us for so long. Such an individual does not exist. The word still exists, endowed with a mythical meaning: it endures through time and history, and, like a chameleon, changes its colour to reflect the changing light. As the word became flesh, it engendered many problems of scholarship.” Still, A.N. Tucker (1975: 473) stuck to the tradition: “Whatever shortcomings the term ‘Hamitic’ might have for philologists, the term ‘Hamite’ has been a major stand-by for students of race. It had long been known that Africa contained ethnic types completely at variance with the Negro type. The most outstanding (sic) of these types was to be found in the speakers of the so-called ‘Hamitic’ languages, who were regarded as early invaders from Asia Minor. ... The main characteristics of these invaders were that they were tall, dolichocephalic, straight-nosed, thin-lipped, ‘aristocratic’-looking, and kept cattle. It soon became apparent, however, that these characteristics were also to be found among speakers of other languages.” Describing in detail the theories by C. Meinhof and C.G. Seligman, Tucker asks: “As for the term ‘Hamitic’ – it has long satisfied the needs (sic) of historians, anthropologists, archaeologists, journalists and popular travel-book writers. Can anyone think of a suitable alternative?” (sic). A good overview of the Hamitic question was offered by H.G. Mukarovsky (1981: 511-514). On the multivalence of this term (pace Sanders 1969: 531 quoted a few lines above), W.A. Ward (1985: 242, §IV) also writes: see appendix. “... the term ‘Hamitic’ means different things to different writers (Rössler, 1952:123). To an older generation, ‘Hamitic’ meant the North African languages, ‘Semitic’ those of Western Asia, South Arabia and Ethiopia. The relation between them was thought to be that of a Hamitic substratum in North Africa strongly influenced by a Semitic superstratum which was said to account for the obvious connection between them. This somewhat simple scheme has now been replaced by others.” Finally, M. Bechhaus-Gerst (1998: 112) wrote of the “infamous ‘Hamitic hypothesis’ with its well-respected champions Carl Meinhof and C.G. Seligman”.

⁹ Organized on criteria that are not clear to me that I am not always able to comprehend. Thus, he distinguished among the following groups of scholars or trends of research, apparently sometimes according to their degree of involvement in SH comparison, sometimes along criteria I cannot precise. The categories set up by Cohen (1947: 23-26) may be outlined as follows: (1) “En général, les sémitisants comparatistes ont admis la parenté chamito-sémitique. Une partie d’entre eux ont accordé une certaine place dans leurs ouvrages aux données comparatives de l’ensemble du domaine (Th. Nöldeke, H. Zimmern, J. Barth);” (2) “d’autres n’ont fait que mentionner cette parenté ... (Lindberg, Pedersen, Bergsträsser);” (3) C. Brockelmann who took a “position théorique qui permet des rapprochements, mais écarte l’idée de la filiation.” (4) “Certains savants ont essayé des tableaux comparatifs ... faisant une espèce de propagande: de Lacy O’Leary, Lexa, Worrell, Barton.” (5) “D’abord Leo Reinisch, avec des recherches étymologiques au départ du couchitique, puis ses ouvrages plus généraux.” (6) “Ensuite la pléiade des constructeurs de la comparaison de vocabulaire égypto-sémitique (qui ont utilisé à l’occasion aussi des données berbères et couchitiques): Albright, Ember, Calice, etc. (voir II, A).” (7) “Enfin des comparatistes ont entrepris une prospection active des différentes parties de la question (sic): E. Zyhlarz, Marcel Cohen” – perhaps most puzzling category. (8) “En général les linguistes, notamment les auteurs de tableaux des langues du monde, ont considéré comme acquis un groupement chamito-sémitique (d’ailleurs pas toujours défini avec les mêmes limites).” (9) A separate entry is devoted to “les réserves de A. Meillet ...: il lui semblait que la parenté chamito-sémitique était beaucoup moins bien définie que la parenté indo-européenne, et au reste, il émettait l’idée que la notion de parenté linguistique avait des chances de ne pas être uniforme suivant les familles ...: «Les concordances entre les langues de ces deux

and then R.M. Voigt (2001: 1318-1322, §§3-5) also, released a longer and a by far more comprehensive survey of the history of Hamitic studies.

1.1. The beginnings of the lexical comparison of Semitic with the African members of what was later considered as the Semito-Hamitic/Afro-Asiatic family by the mid-20th cent., are going back as long as to medieval North African Jewish scholarship of the 10th cent. The earliest,¹⁰ namely the occasional Semito-Berber comparisons by **Yehuda Ibn-Quraish**,¹¹ as well as to the late 18th cent. in the European scholarship, when the *Mithridates* by **Johann Christoph Adelung** and **Johann Severin Vater** summarized some similarities of the Hebrew words with certain Berber, Cushitic, Chadic ones.¹² The works from the 19th century (family trees, sporadic isomorphs and isoglosses) are mostly un-systematic and therefore out of consideration here.¹³

1.2. The era of “pre-classical Hamitology” may have started around the mid-19th cent. as suggested by H.-J. Sasse (1981: 132).¹⁴ For J.H. Greenberg (1962: 81-82), the *entrée* was F.W. Newman’s (1844) work first suggesting to compare Hausa too with

groupes [sémitique et chamitique] sont du même ordre que celles qui ont été signalées entre les langues indo-européennes.»”

¹⁰ Unless we consider the hypothetic and pretty romantic, albeit by far not impossible, scenario presented by R.M. Voigt (1988: 156) for the earliest possible occasion of a linguistic comparison of the Northern Afro-Asiatic branches 3 millennia before “ist gut denkbar, daß bereits Šošenq (I.), der 945 v. Chr. den Pharaonen-thron bestieg, Ähnlichkeiten zwischen seinem Idiom, dem Berberischen und dem Ägyptischen aufgefallen sind; vielleicht bemerkte er sogar Gemeinsamkeiten mit dem Hebräischen, als er 925 v. Chr. vor Jerusalem erschien – wie die Bibel ... berichtet – und das Volk war nicht zu wählen, das mit ihm aus Ägypten kam, Libyer, Sukkijter und Kuschiter – eine ideale Vorbedingung für sprachvergleichende Beobachtungen. Leider ist aber nichts dergleichen auf uns gekommen!”

¹¹ Published by D. Cohen (1971-2: 121): “Dans l’épître, comparatiste avant la lettre, qu’il adressait aux Juifs de Fès, Yehūda ibn Qurayš de Tahert (fin du IX^e-début du X^e siècle), leur recommandait, pour la bonne compréhension des Textes Sacrés, non seulement l’étude de l’araméen et de l’arabe, mais ... le recours aussi aux langues romanes et au berbère. Cette dernière langue devait être familière à l’écrivain originaire d’une région alors berbérophone.”. Thence, Cohen (1971-2: 126) concluded: “... le passage d’Ibn Qurayš consacré au berbère ne vaut pas essentiellement par la technique comparative. Pour l’auteur ... il s’agissait, dans les rencontres lexicales, de phénomènes de diffusion d’une langue à l’autre, encore qu’il n’explique pas comment une telle diffusion a pu se produire entre berbère et hébreu.” Strangely, J.H. Greenberg (1962: 79) failed to mention the Berber segment in this early comparative work: “as early as the tenth century the Jewish grammarian Judah ibn Kuraish (sic) had already noted empirically the extensive resemblances of Hebrew, Aramaic and Arabic”.

¹² As shown by M. Cohen (1947: 5) and R.M. Voigt (2001: 1318, §2) in his section “Erste vergleichende Beobachtungen”.

¹³ For details see Cohen 1947: 3-14; Voigt 1988: 155ff., §I (“Erste sprachvergleichende Überlegungen”); Voigt 2001: 1318-1321, §3 (“Beginn der semitohamitischen Sprachwissenschaft”). Voigt also dealt with the subsequent works from the 19th century in detail, which we skip to reproduce here.

¹⁴ Sasse (1981a: 132): “Spekulationen über die Existenz einer Sprachfamilie, von der das Semitische nur einen Teil bildet verdichten sich um die Mitte des vorihen Jahrhunderts mit Lepsius (1844, vgl. ... 1863: 90), Beke (1845), d’Abbadie (1845) und Lottner (1860-61). Ungefähr gleichzeitig taucht die zu ‘Semitisch’ parallel ... gebildete Bezeichnung ‘Hamitisch’ bei Lepsius, Renan, Beke und d’Abbadie auf.”

Berber and Semitic etc., while J. Knapper's (1975-6) comprehensive account¹⁵ on this beginning phase of "Hamitology" starts from 1851 (until 1911). "The term 'Hamitic' was first proposed by the celebrated Ernest Renan in 1859 (sic, for 1855) as a general designation for the various African languages which showed significant resemblances to Semitic." This is also the era when the dichotomy of Semitic vs. all the rest of cognates in Africa was first doubted in 1845.¹⁶ Accordingly, the vision of equipotential branches in the SH family was first attested in the research by C.T. Beke (1845), followed by C. Lottner (1860-1).¹⁷ All this had been stated already a whole century prior to Cohen 1947 and Greenberg 1955! Unfortunately, this fact does not change a bit about the poor quality of lexical comparison from the whole era (if such was offered at all). The first half of this century-long period, until the end of the 19th century, is, however, beyond the range of this overview as the first considerable results of a lexical comparison were beginning to accumulate in its second half only. The only difference between the research in this first half vs. the second half (below) from our point of view is what is sometimes labelled as the "orthodox" conception of "Hamitology" or as simply summed up by H. Satzinger (1999: 367-368).¹⁸

A thorough retrospective historical analysis of the "Hamitistic" comparative researches throughout the aforementioned long century has been completed by G. Burrini (1978-9), H.-J. Sasse (1981a: 132-136) and then by R.M. Voigt (1998: 155-162, §§I-IV and 2001: 1318-1322, §§1-5).

1.3. "Classical Hamitology". I agree with R.M. Voigt (1988: 160, §III; 2001: 1321, §4) to a certain degree in that "Die klassische Periode" of the SH comparatist research started in the late 19th cent. with the fundamental comparative syntheses by F. Müller, L. Reinisch,

¹⁵ Burrini (1975-6: 114): "Utile come schizzo, il saggiaio offre tuttavia delle considerazioni molto generali, internamente slegate e non inquadrare in un organico profilo storico; nè mancano serie lacune, come la trattazione del periodo iniziale degli studi e dell'opera del Benfey."

¹⁶ Sasse (1981a: 132): "Im Jahre 1845 hielt Charles Beke vor der Philological Society in London einen Vortrag über die 'Sprachen ... Abessiniens und der südlich angrenzenden Länder' ... (Beke 1845: 94, zitiert nach Fleming 1976): 'M. d'Abbadie classes the Agau and Gonga languages together in one family, which he names the 'Chamitic'; to this classification and denomination I cannot object ... But ... I do not agree ... in the narrow sense in which he uses the term 'Chamitic' as opposed to 'Semitic'."

¹⁷ In Sasse's (1981a: 135, §2) view, it was the latter author "der ... Semitisch, Ägyptisch, Berberisch und Kuschitisch als gleichberechtigte, nebeneinanderstehende Unterfamilien einer großen Sprachfamilie ansah und an diesem Modell ein Konzept der genetischen Sprachverwandtschaft entwickelte, mit dem noch heute gearbeitet wird ...". As J.H. Greenberg (1962: 83) saw this matter a century later: "... the relationship between Semitic and Hamitic came up for fundamental reconsideration. In a remarkably prescient article in 1860, C. Lottner had not only decisively rejected the Indo-European relationship in favor of a connection between Semitic and Hamitic languages but had also denied any unity to Hamitic as such. [footnote omitted] Indeed, viewed objectively, Berber, for example, was as distant from Egyptian or Cushitic as it was from Semitic. In other words, Semitic was but one branch of a larger family in which the various 'Hamitic' languages ... constituted each a further separate branch."

¹⁸ Satzinger (1999: 367-368): "Zunächst umfasste das Hamitische Ägyptisch, Berberisch und die kuschitischen Sprachen sowie auch schon sehr früh das Hausa, die bestbekannte Sprache der Familie, die heute tschadisch heißt."

C. Meinhof.¹⁹ Unfortunately, however, a considerable part of the scientific fundament of this so-called “classical phase” of mainstream “Hamitology” was based on what has proven to be ill-founded and can by no means be maintained today.²⁰ Their ill-founded methodology, i.e., how the pre-classical or “orthodox” frames of “Hamitology” were extended in a confusing manner,²¹ was neatly described by H. Satzinger (1999: 367-368).²² Racial assessment was deeply involved in these classifications.²³ This is first of all why Hausa had long not been included in Hamitic, which was discussed by H. Satzinger (1999: 368-369) pace Jungraithmayr-Möhlig 1983: 105-106).²⁴ M. Cohen (1947: 24), who was also reluctant even as for accepting Chadic including Hausa, by the way, voiced only his reservations.²⁵

1.3.1. F. Müller is that scholar, as R.M. Voigt (2001: 1321, §4) states, whom we owe the first SH comparative grammar.²⁶ That this work doubtlessly opened a new era in

¹⁹ As Voigt (1988: 160, §III; 2001: 1321, §4) argues: “Den dritten Abschnitt möchte ich die klassische Periode nennen, weil in ihr grundlegende Werke geschaffen wurden, auf denen auch heute noch jede vergleichende semitohamitische Arbeit aufbaut.”

²⁰ Thus, their failure is perhaps best hallmarked by the statement of E. Zyhlarz (1936: 450), a prominent figure of post-classical (pos-Meinhofian) “Hamitology” (to use Voigt’s terminology): “Angesichts dieser Dinge wird es bereits klar geworden sein, dass gewisse ... naive Versuche, das Hamitische nach ein Paar lautlichen oder formativen Gesichtspunkten bald in das Bild von Negersprachen (sic), bald in das von Klassensprachen oder gar bis in den Rahmen des Indogermanischen einzubeziehen, überhaupt in gar keiner Weise mehr ernst zu nehmen sind.”

²¹ Which left its print even on the understanding of these issues by such an outstanding Oriental philologist and linguist as I. Gelb (1951: 61): “certain language families are well established and at the present time generally accepted. One of them is the Semitic-Egyptian group (sic), or rather a group including Semitic and all those languages which according to one scholar or another belong to Hamitic (Egyptian including Coptic, Berber or Libyan, Cushitic or (sic) Nilotic, and Hausa)”.

²² Satzinger (1999: 367-368): it was the inclusion of Hausa that started to pose the “Schwierigkeiten ..., dass nicht nur hamitisch die Sprachgruppe bezeichnete, sondern Hamiten auch ihre Sprecher meinte, und zwar sowohl im Sinn der physischen Anthropologie (Stichwort Rasse) ...” For mishandling further African phyla this way in this era, Satzinger (1999: 367-368) says: “Andererseits aber wurden bald auch Sprachen einbegriffen, die von andersartigem Typus sind. Nach heutigem Verständnis sind es Vertreter aller drei übrigen Makrophyla auf afrikanischem Boden: • Ful, die Sprache der Ful’be, ... eine westatlantische Klassensprache, somit ein Vertreter ... der Niger-Kongo-Familie bzw. des niger-kordofanischen Makrophylums ... • Nubisch und die nilotischen Sprachen ... Greenberg reiht sie in die ostsudanischen Sprachen, ... eine Unterfamilie der nilosaharanischen Untergruppe Chari-Nil ... • Mit dem Hottentottischen ..., heute Khoi(khoi) ... sind auch die Khoisan-Sprachen vertreten.”

²³ Thus, as described, e.g., by Satzinger (1999: 368): “Zu den Kriterien, die zum Einschluss dieser Sprachen führten, gehörte nicht nur das linguistische Moment ... Es spielte auch eine wesentliche Rolle, dass ihre Sprecher • zum Teil von heller Hautfarbe, allesamt aber typischerweise von nicht-negroider physischer Erscheinung sind; und dass sie • allesamt Rinder züchtende Nomaden sind, Vertreter einer angenommenen ‘hamitischen’ Großvieh züchterischen Kulturschicht.” Satzinger (1999: 369) touched upon the former distinction of the so-called “‘Subsemiten’ bzw. das Ergebnis einer Vermischung von ‘Semiten’ mit ‘Negervölkern’.” Diese Haltung ... ist typisch für das späte 19. und die ersten Jahrzehnte des 20. Jahrhunderts.”

²⁴ Satzinger (1999: 367-368): “Seine Sprecher sind typischerweise dunkel und von ‘negroider’ Erscheinung, und sie sind kein Rinder züchtendes nomadisierendes ‘Herrenvolk’, keine ‘Hirtenkrieger’”.

²⁵ Cohen (1947: 24): see appendix. Cohen (1947: 24): “pour les rapports avec les langues d’Afrique la question est plus complexe et plus irritante: il s’agit en effet de savoir si certaines de ces langues ou même le plus grand nombre d’entre elles ne devraient pas être comptées elles-mêmes comme faisant partie du chamito-sémitique, dont la définition devrait être révisée en conséquence.”

²⁶ Voigt (2001: 1321, §4): it is F. Müller whom “verdanken wir die erste vergleichende Grammatik der semitohamitischen Sprachen ... in seinem monumentalen sechsbändigen Grundriß der Sprachwissenschaft

Semitic-Hamitic comparative studies in general, was duly admitted by W. Vycichl (in his 1985 presentation at the Italian *Giornata ...*)²⁷ as well as by H. Satzinger (1999: 367 and fn. 2 pace Jungraithmayr & Möhlig 1983: 103) also.²⁸ Still, for our special interest in evaluating the history of research on AA comparative phonology and lexicon, Müller cannot take granted such a prominent position.

1.3.2. L. Reinisch, the monumental founding father of the Viennese *Doppelinstitut* of African studies and Egyptology (cf. §11.1 of Episode XI) was, in my view, beyond doubt, the epochal giant creating in the K.u.K. imperial capital the infrastructural frames of the first long enduring international cradle hosting “Semitic-Hamitic” comparison (like J.H. Greenberg and I.M. D’jakonov of “Afro-Asiatic” some half of a century after him). His field research on the Cushitic lexicon, on dictionaries abounding in SH etymologies represent a milestone of the era.²⁹ His gigantic *Lebenswerk* was deservedly celebrated and re-evaluated in 1987 in a whole volume published in Vienna (ed. by H.G. Mukarovsky). It is thanks to his extraordinary field research output and his Oriental philological background that this happy constellation of research directions had been concreted for a whole century to come in his Viennese *Doppelinstitut*, which then emitted generations of outstanding comparative researchers of our language family like F. von Calice, E. Zyhlarz, W. Czermak, W. Vycichl, W. Leslau, J. Lukas, O. Rössler, H. Jungraithmayr. The greatest merit of Leo Reinisch, from our point of view here, is the synchronic and comparative description of numerous Cushitic languages. Still, unfortunately, his omnicomparatistic³⁰ mass-comparative “methods” did not stand on firmly established rules of *Lautentsprechungen* between Cushitic, Semitic, Egyptian. So, his comparisons ended up with not being more decisive than those of his predecessors and contemporaries. With his authority, a chaotic way of affiliating the most diverse African groups became legitimate.³¹ In one of his first volumes, *Das einheitliche Ursprung*, Reinisch (1873) already gave a sample of his vision about the kinship of the diverse linguistic families when tried to combined SH + Indo-European (IE) on

(Wien 1876-1888). In der 2. Abt. ... des 3. Bandes (Die Sprachen der lockenhaarigen Rassen (sic)) werden auf 200 Seiten fast alle Gebiete der Grammatik miteinander verglichen (eine Kurzfassung liegt in Müller 1867 vor). ... Ein vergleichbares Werk ist erst 1965 mit Diakonoffs Semitic-Hamitic languages erschienen.”

²⁷ Vycichl (1987: 211): “Fra poco, nel 1987, celebreremo il centenario degli studi camito-semitici. Difatti, nel 1887, Federico Müller pubblicò nel suo ‘Grundriß der Sprachwissenschaft’ [footnote omitted] per la prima volta un capitolo sulle lingue ‘camito-semitiche’ (di più di 100 pagine) distinte chiaramente.”

²⁸ Satzinger (1999: 367 and fn. 2): his work on the “‘hamitic-semitischer Sprachstamm’ wurde innerhalb der Orientalistik zur Grundlage der Anerkennung der ‘hamitosemitischen Sprachwissenschaft’”.

²⁹ Voigt (2001: 1321, §4) on the output of Reinisch, “der Grammatiken und Wörterbücher von zehn kuschitischen Sprachen ... vorgelegt hat, behandelt in seinem Werk über Das persönliche Fürwort und die Verbalflexion in den hamito-semitischen Sprachen (1909) vor allem den Bau des Verbums in allen fünf Zweigen mit einem Material- und Ideenreichtum, der in der Geschichte dieser Wissenschaft einmalig ist. Er legte auch die erste etymologische Studie (über das Zahlwort vier und neun) vor (1890)”.

³⁰ He tried to include Egyptian in his “historische Hamitologie”, where, as E. Zyhlarz (1932-3: 27) also remarked: “nach der hamitischen Seite ... die Aussicht durch Reinisch’ liberale Allerweltsvergleich gründlich verbaut worden [wäre]”.

³¹ As stated by A.S. Kaye and P.T. Daniels (1992: 430-431), beside C. Meinhof (below), “D(iakonoff). (1988:14) also credits L. Reinisch for giving credibility to the term Ham(itic), a fact corroborated by Barton’s references to 7 of Reinisch’s books.”

the basis of Teda, on which R.M. Voigt (1999: 316) rightly notes: “Although his methodology does not correspond to the later achievements of this great scholar, [footnote omitted] this work marks an important step in the history of the discipline.” The latter thought is perhaps all too forgiving in the light of the former one, esp. in the age of the neo-grammarians. In his later comparative works, L. Reinisch ventured to extend the kindred of Hamitic onto a whole range of African languages like, e.g. Nubian languages, Nilotic,³² and even Bantu,³³ which would imply a kind of ill-founded ultimate African macrofamily,³⁴ and he has thus initiated a highly disputable way and frames of comparison in African linguistics.³⁵ It is perhaps easier to share the reservations voiced by W. Vycichl (1935: 76).³⁶

³² Reinisch (1911: 170) on the affinities of Cushitic with Nuba, Barea, Kunama: “... dass der Wortschatz des Nuba ... weit zahlreiche Übereinstimmungen mit den hamito-semitischen, als mit den nilotischen Sprachen aufweist, ist eine leicht begreifliche, weil ja das nubische Volk seit Jahrtausenden in unmittelbaren Beziehungen mit seinen nördlichen und östlichen Nachbarn gestanden hat: verwunderlich ist vielmehr die Tatsache, dass im nubischen Wortschatz verhältnismässig doch noch so viele Zusammenhänge mit demjenigen der südlichen Völker, der Dinka, Schilluk, Nuer, Bari usw. bestehen, ungeachtet von diesen die Nubier in Folge geschichtlicher Vorgänge seit so langen Zeiten örtlich abgeschnitten sind. Gerade diese Tatsache weist aber darauf hin, dass die Nubier aus dem Süden in ihre heutigen Wohnsitze eingezogen und ursprünglich mit den Neger-völkern der Dinka, Schilluk usw. gleicher Herkunft sind.” As commented by C. Meinhof (1921-2a: 242) on these ideas of Reinisch: “Er glaubte auch, dass ich ihm Unrecht getan hätte, er hätte das Nubische zu den Hamitensprachen gerechnet. Aber ich kann sein Buch ‘Die sprachliche Stellung des Nuba’ nicht anders verstehen.” H.G. Mukarovsky (1981: 515): “Zunächst erblickte Reinisch in den drei von ihm selbst erforschten nordostafrikanischen Sprachen Barea, Kunama und Nuba ‘protohamitische’ Sprachen. ... Die sogenannten Neger-sprachen seien zwar von anderem Bau, doch erkannte Reinisch: ‘Trotz ... von den hamito-semitischen Sprachen stark abweichenden Hauptzügen weisen jedoch sichere Tatsachen darauf hin, dass die sogenannten Neger-sprachen mit jenen gleichen Ursprunges sind, weil sie mit dem Hamito-Semitischen gemeinsame Elemente besitzen, welche deshalb nicht entlehnt sein können, da sie einen wesentlichen Bestandteil ihres Sprachbaues bilden ...’” H.G. Mukarovsky (1981: 516-517) labelled it as “durchaus realistisch” how “Reinisch selbst hat bereits bei der Verzweigung der hamitischen Sprachen die Bedeutung der Zeittiefe unterstrichen. So bereitet aber sein Versuch, Brücken zwischen den ostsudanischen Sprachen Nuba und Barea, ... Kunama und den kuschitischen Sprachen zu schlagen, Schwierigkeiten ... Reinisch hat so hinsichtlich der genetischen Zugehörigkeit des Nubischen tatsächlich eine durchaus moderne Auffassung vertreten.”

³³ H.G. Mukarovsky (1981: 515-516) on the “Urverwandtschaft des Hamito-Semitischen mit” Bantu suggested by L. Reinisch (1909: 319): “Dasselbe gilt ihm aber auch für die Bantusprachen, die nur ‘dem ersten Anschein nach völlig verschieden’ ... wären, während genauere Untersuchung zeige, ‘dass zwischen den Bantu und den Nordsprachen ein diametraler Gegensatz nicht besteht’ ” and on Reinisch 1909: 321: “Reinisch schließt daraus, ‘dass die hamito-semitischen, die Sudan- und die Bantusprachen auf eine gemeinsame Ursprache zurückführen und deshalb auch die Völker, welche diese Sprachen sprechen, aus ein und derselben Urheimat herstammen’ ...” Not all of these ideas gained acceptance, cf. the words by L. Homburger (1929: 150): “La théorie de Reinisch, qui formula en 1908 l’hypothèse d’une langue commune chamito-sémitique-bantoue, n’a rencontré que peu d’adhérents ...”

³⁴ Which echoed the *Zeitgeist*, cf. R. Hartmann (1879) who “held that Africans were an ethnic whole. He thought of the African continent as a ‘grand uniform physical creation’, which ‘hid in itself a great unitary stock’ of people”, but “as von Luschán remarks, ‘such a standpoint appears today really wonderful and scarcely to be conceived’ ” (Barton 1934: 9).

³⁵ What Mukarovsky (1981: 515) writes on Reinisch (1909: 315) in this respect: “Die Frage einer Urverwandtschaft des Hamito-Semitischen mit sonstigen afrikanischen Sprachen scheint vor Reinisch nicht gestellt worden zu sein. Das ist verständlich, da ja ‘Hamitisch’ eben die mit nichtafrikanischen, orientalischen Sprachen verwandten Idiome bezeichnen sollte.”

³⁶ Vycichl (1935: 76): “Demgegenüber ist Leo Reinisch, dessen hohe Verdienste in einer anderen Richtung liegen, nie zu einer Erkenntnis des inneren Gegensatzes zwischen dem Hamitischen, dem Nuba und den Nilotensprachen gekommen.”

1.3.3. C. Meinhof's genius was considered by H.-J. Sasse (1981a: 134) as most far-reaching within the whole history of "Hamitic" studies.³⁷ His epochal opus, *Die Sprachen der Hamiten* (Meinhof 1912), in which he tried to establish the so-called "Hamitic" features and traits,³⁸ contained in its attachment the famous and, for our present study most important, "Beigabe I. Vergleichendes Wörterverzeichnis" (Meinhof 1912: 230-240) with a precious comparative wordlist that was based on the comparison of Egyptian, Berber, Beja, Agaw, Oromo, Somali, Hausa. In spite of its imperfections admitted by Meinhof himself also,³⁹ this comparative list makes his work the first serious attempt of its kind to compare SH lexicon which carries the potential of becoming for the first time that extendable core material that might underlie a desired formulation of the *Lautgesetze* for later.⁴⁰ Nonetheless, the ill-founded inclusion of non-AA languages, such as Ful, Masai, Nama,⁴¹ was soon rightly criticized by both E. Zyhlarz⁴² and W. Vycichl⁴³ from the Viennese *Doppelinstitut* and then by others too.⁴⁴ Strangely, follow-

³⁷ Sasse (1981a: 134): "Der einflußreichste Vertreter der hamitischen Hypothese ... zweifellos".

³⁸ As stated by H.-J. Sasse (1981a: 134) on Meinhof (1912) where he "einen ersten umfassenden Versuch unternahm, die Gemeinsamkeiten der 'hamitischen' Sprachen herauszuarbeiten".

³⁹ Meinhof (1912: 230-231): "Natürlich bin ich mir über die Mangel dieser Liste ganz klar. Es wäre leicht im Anschluß an Reinisch viele Wörter zusammenzustellen, die den kuschitischen Sprachen gemeinsam sind. Das wird für ein vollständiges Stammwörterverzeichnis der Hamitensprachen wichtig sein, hier wäre es zwecklos. ... Auf Anklänge an das Urbantu und an sudanische Formen, die als Lehnworte zu den Hamiten kamen oder von ihnen ausgingen, habe ich mehrfach aufmerksam gemacht. Ich will damit nicht sagen, daß ich diese Worte für verwandt halte, sondern nur, daß es sich lohnt zu untersuchen, ob nicht eine Beziehung vorliegt."

⁴⁰ Meinhof (1912: 230-231): "... Außerdem muß aber an der Hand dieser Liste der Versuch gemacht werden, hypothetische Grundformen des Urhamitischen Wortschatzes aufzustellen. Das ist erst möglich, wenn uns die Lautverschiebung und andere Lautgesetze besser bekannt sind als heute. ..."

⁴¹ Nama grammar was identified as "Hamitic" (but with Bushman phonetics and vocabulary) by Meinhof (1930) much later.

⁴² Zyhlarz (1933: 81): "Die Sprachen der Hamiten' bedeuten für Meinhof linguistisch nicht dasselbe wie 'hamitische Sprachen' in unserem Sinn, sondern seine Bezeichnung umfasst vom ethnologisch-anthropologischen Gesichtspunkt aus eine Gruppe von vielfach stark diskrepanten Idiomen, welche aber deutlich eine historische Beeinflussung durch 'hamitische Sprachen' noch erkennen lassen, wengleich manches darunter ganz anderen Sprachstämmen angehört, wie Ful und Masai." Zyhlarz (1936: 434-435): "Erst Meinhof gelang es ... gewisse sprachtypische Gemeinschaftszüge im Bereich des als 'Hamitensprachen' geltenden Gewimmels von innerlich vielfach diskrepanten Idiomen Nord- und Ostafrikas herauszuarbeiten. ... Damit war einerseits eine geistige Verbindungslinie im Sinne gewisser Allgemeinmerkmale sprachlicher Art (Artikulationscharakter, grammatisches Geschlecht, Polarität, gemeinsame Formantien sowie Anzeichen von bestehender Wurzelgemeinschaft) hergestellt, andererseits aber wies Meinhof unter Beihilfe Luschans auf scheinliche Parallelen anthropologischer Typusmerkmale ... Versuche aber, die Beihilfe ägyptologischer oder semitistischer Spezialisten dazu zu erhalten, erfuhren entweder keine Beachtung oder höchstens negativ beratende Zurückweisung."

⁴³ So it was evaluated by Vycichl (1935: 76): "Die Basis der modernen Hamitenforschung bildet Carl Meinhofs Werk über **Die Sprachen der Hamiten**, das erstmalig eine Scheidung der Sprachenwelt des nigritischen Afrikas von den Sprachen der hellen, lockenhaarigen Afrikaner bietet; diesem Prinzip zuliebe wurde allerdings auch das Ful (von Meinhof selbst dem Urbantu nahestehend gedacht) und wegen des grammatischen Geschlechtes auch das Masai in den Kreis der Betrachtung miteinbezogen, wodurch der Rahmen als zu weit gefasst erscheint."

⁴⁴ Admitting the leading role of Meinhof in Bantu linguistics and in elaborating the "Hamitic" theory, D.A. Ol'derogge (1949: 157) rightly queried the method of Meinhof of affiliating languages purely for having grammatical genders (following in this, by the way, R. Lepsius). Ol'derogge (1949: 159-162) rightly pointed

ing W. von Soden (1965: 163)⁴⁵ in this regard, R.M. Voigt (1999: 316) partly defended this commonly refuted position.⁴⁶ For example, as R.M. Voigt (2001: 1322, §4) rightly says, “das Konzept des Semitoamitischen wird ... verwischt”, yet defending Meinhof at the same time.⁴⁷ Still, other authors were of a different opinion, e.g., both outstanding Viennese figures of post-classical “Hamitology” (E. Zyhlarz, W. Vycichl). From the standpoint of our special survey, the only substantial advantage of Meinhof’s (1912) attempt that its wordlist reckoned with the chaotic and amorphous omnicomparison by L. Reinisch and for the first time formulated partly linguistic criteria (even if, at a time, also ill-founded racial ones) of including an African language in the “Hamitic” phylum, as it was pointed out already by E. Zyhlarz two decades later.⁴⁸ Finally, a whole range of scholars, particularly AA linguists like D.A. Ol’derogge (1949, *passim*),⁴⁹ J.H. Greenberg

out a number of flaws in Meinhof’s classing of Ful as “Hamitic”. Ol’derogge (1949: 169) blamed at the same time Meinhof’s wider understanding of “Hamitic” for having been ill-founded – beside Berber, Beja, Somali, and Hausa – also on languages (Ful, Masai, Nama) misconceived as isolated relicts and picked out from the natural contexts of their closer kinship cotexts. *Pace* D. Westermann, E. Zyhlarz, W. Vycichl *et alii*, J.H. Greenberg (1955: 3) too, excluded Ful, Masai, Hottentot from Hamitic: “The basic criticism of Meinhof’s method is simply that it does not lead to genetic classifications. It is primarily typological with evolutionary overtones.” J.H. Greenberg (1962: 83) firmly maintained that “Semitic is probably related to the Hamitic languages of Africa and is thus part of the Semito-Hamitic family. The membership in Hamitic (sic) is not clearly defined, but Egyptian, Berber and Cushitic must certainly be included. The various further extensions of the family by Meinhof are to be rejected or are at best highly speculative. Of these additional languages, the strongest case can be made for Hausa, but its inclusion in Hamitic (sic) cannot be regarded as proved (sic).” Or, as it was formulated by A.S. Kaye and P.T. Daniels (1992: 430) as well: “It is Meinhof (1912) ..., more than any other work, which can take the credit for the more or less successful perpetration of the ‘Ham.(itic) myth’ for so long. Meinhof added unrelated l(an)g(uage)s.”

⁴⁵ Speaking of the poor production of “Hamitistik” that “über einige bescheidene Ansätze ... nicht weit hinausgekommen ist” (opposed to the so fruitful field of Semitic), W. von Soden (1965: 163), in turn, released a praise about “C. Meinhof’s grundlegendem Buch *Die Sprachen der Hamiten* (1912)”.

⁴⁶ Voigt (1999: 316): “Carl Meinhof (1912) ... has classed Ful, Masai and Nama among the Hamitic languages of Africa. Although this concept has been given up subsequently on the account of more detailed linguistic research, his linguistic arguments are sometimes not fully disproved by hinting at the real cognate relationship of the languages under question.”

⁴⁷ Voigt (2001: 1322, §4): “Wenn er das Nama als sh. Sprache bezeichnet, zeigt dies, daß bei ihm rassische Kriterien nicht die entscheidende Rolle spielen.”

⁴⁸ As the point of the matter was summarized by Zyhlarz (1936: 434-435): “Erst Meinhof gelang es, aus der Masse der Blickhemmenden heraus gewisse sprachtypische Gemeinschaftszüge im Bereich des als im ‘Hamitensprachen’ geltenden Gewimmels von innerlich vielfach diskrepanten Idiomen Nord- und Ostafrikas herauszuarbeiten. Auch er betonte dabei die Zugehörigkeit des Altägyptischen in den Rahmen des Begriffes ‘hamitisch’. Damit war einerseits eine geistige Verbindungslinie im Sinne gewisser Allgemeinmerkmale sprachlicher Art (Artikulationscharakter, grammatisches Geschlecht, Polarität, gemeinsame Formantien sowie Anzeichen von bestehender Wurzelgemeinschaft) hergestellt, andererseits aber wies Meinhof unter Beihilfe Luschan auf sichtliche Parallelen anthropologischer Typusmerkmale der betreffenden Spracheigner hin. So war der Begriff ‘hamitisch’ neuerlich als feststehendes Sprachproblem gestellt gemacht. Versuche aber, die Beihilfe ägyptologischer oder semitistischer Spezialisten dazu zu erhalten, erfuhren entweder keine Beachtung oder höchstens negativ beratende Zurückweisung.”

⁴⁹ Based upon a thorough review of Meinhof 1912 and the “Hamitic” theory of its followers (linguists, anthropologists and ethnographers) in Germanophone African studies (greatly inspired by the chapter by Seligman 1912 and his 1930 volume with subsequent editions in 1957 and 1966), already D.A. Ol’derogge (1949: 157-170), an authority of Soviet Africanistics (an élève of the Leningrad SH school from the 1930s

(1962: 82),⁵⁰ H.-J. Sasse (1981a: 134),⁵¹ and M. Bechhaus-Gerst (1998: 112),⁵² warned of the heavy racial impact explicit in Meinhof's (1912) SH conception, ominously far-reaching for the further evolution of the "Hamitic" hypothesis, whose wider context in the history of European science was masterfully analysed by E.R. Sanders (1969).⁵³

along with I.M. Diakonoff), rejected the artificial racial grouping of the alleged "Hamitic" peoples in general, followed by generations (not just of German science) of those days: "В результате можно сказать, что антропологическое понятие а хамитах у немецких антропологов-расистов чисто негативное. Все, что не негрское, то хамитское, ..., антропологически хамитов не существует" (O'derogge 1949: 163).

⁵⁰ Greenberg (1962: 82): "One extreme point of view ... should be briefly mentioned, since by the reactions it evoked ..., it has colored discussion of the problem virtually up to the present. This is the thesis ... by Carl Meinhof, the leading Bantu specialist of his time. [footnote omitted] ... In this work, the term 'Hamitic' was extended to include, beside (Egyptian, Berber and Cushitic) ... usually classified as Hamitic, such other languages as that of the Fulani of West Africa ..., the language of the cattle-raising Masai of East Africa and ... of the Hottentots ..., likewise a cattle people, but linguistically and culturally similar in other respects to the non-pastoral Bushmen. Meinhof's work displayed a but thinly disguised racist tinge and became the basis on which much of the cultural history of Africa was reconstructed in the absence of historical documentation. To cite but one example, Charles S. Seligmann, a well-known anthropologist, in a work widely used as a textbook in courses of anthropology of Africa less than a generation ago, followed Meinhof in matters of language classification. The racist implications ... from his book are obvious: '... the incoming Hamites were pastoral Caucasoids ... better armed as well as quicker-witted than the dark agricultural Negroes.' [footnote omitted]" Greenberg (1962: 85) states with full right: "Conscious and subconscious ideological factors undeniably played a role in delaying the recognition of the African as a against the Indo-European connections of Semitic. A century of scientific anthropology which has taught us that the cultures of peoples without a literary tradition may exhibit values which deserve our respect, and the recent political emergence of African nations may have prepared the ground for the emotional acceptance of what now seems undeniable on scientific grounds."

⁵¹ Sasse (1981a: 134): "Charakteristisch für Meinhofs Ansatz ist die implizit vertretene Auffassung (ein Erbe der Sprachwissenschaft des 19. Jahrhunderts ...), daß es primitivere (einfach strukturierte) und höherentwickelte (komplexere) Sprachen gibt, und daß dieser Unterschied in direkter Weise mit den geistigen Fähigkeiten (!) der diese Sprachen sprechenden Völker korreliert werden kann. ... die Überzeugung, daß flektierende Sprachen den höchsten erreichbaren Sprachzustand (!) darstellten. Dies zeige sich unter anderem darin, daß die Träger der Hochkulturen der alten Welt sich ... überwiegend flektierenden Sprachen bedient hätten. Zu dieser ... Bewertung sprachtypologischer Erscheinungen gesellte sich ein ebenfalls den Zeitgeist reflektierender Rassismus: Nur die kaukasoid Rasse verfüge über die geistigen Fähigkeiten, die die Ausbildung von Hochkulturen voraussetze. ... Wenn in Afrika inmitten von 'primitiven (sic!) Negersprachen' flektierende Sprachstrukturen auftreten, so kann dies nur darauf zurückzuführen sein, daß kaukasoid Bevölkerungsteile sie dort hineingetragen haben. Diese ... waren eben die 'Hamiten', eine hellhäutige, lockenhaarige Rasse, hochgewachsene, schlanke (sic!), kriegerische Nomaden, deren reinste (sic!) Erscheinungsform man im altägyptischen und äthiopiden Typ erblickte."

⁵² Bechhaus-Gerst (1998: 112): the "infamous 'Hamitic hypothesis' with its well-respected champions Carl Meinhof and C.G. Seligman".

⁵³ Having thoroughly discussed the general scholarly background of "modern racism evolved from earlier nineteenth-century national romanticism ... echoed in all Western nations, culminating finally in the ideology of Nazi Germany", E.R. Sanders (1969: 529-530) has offered useful ideas about the aberrant way of regarding the AA history through the racial perspective of the traditional SH hypothesis: see appendix. Sanders (1969: 529-530): "The beginning of the twentieth century saw the Caucasoid-Hamite solidly established. Science supplanted theology as the alpha and omega of truth. Racial 'scientific' classifications, which had to face the physical diversity of the various 'Hamites', established a separate Hamitic branch of the Caucasian race, closely following the creation of a linguistic entity called a family of Hamitic languages. Linguistic typologies were based on racial types and racial classifications on linguistic definitions. The confusion surrounding the 'Hamite' was steadily compounded as the terms of reference became increasingly overlapping and vague. ... Linguistic classifications were based on geography, racial characteristics and occupation, rather than on rigor-

The study by C. Meinhof and M. Schmidt (1916-7: 251) identified Ethiopian elements in Bantu (Cohen 1947: 25). Although a decade later Meinhof slightly modified the limits of his “Hamitic” conception (cf. Meinhof 1921-2a: 242),⁵⁴ this could hardly change a bit about the enormous effects of his original thesis from 1912 on the later research. From our point of view in this special study, however, more essential are some lesser-quoted minor papers by Meinhof with a few pioneering observations in the most neglected field of SH comparative phonology. In his review on an “Egypto-Semitic” volume by E. Naville (1920),⁵⁵ Meinhof (1920-1a: 73) rightly declined the affiliation of Egyptian with Sudanic (researched by D. Westermann) and reaffirmed its closest kinship with “Hamitic”⁵⁶ stressing the common apophonic nature of Semitic, Egyptian, Cushitic (Somali)⁵⁷ and designated the tasks of a comparative SH phonology and root dictionary among the unfulfilled agenda of egyptologists (!) such as a comparative SH phonology, grammar and root dictionary.⁵⁸ In this brief review, he confirmed the common inherited

ous methodology pertaining solely to language. Grammatical gender became the main diagnostic of the so-called Hamitic languages. Although the grammatical gender exists in many unrelated languages of the world, it was not found in the languages of the ‘true’ Negro (racial category again). Thus linguistic typologies had racial bases just as racial typologies were based on linguistics.”

⁵⁴ Voigt (2001: 1322, §5): “Meinhof schon 1921/2 seine Hamitentheorie deutlich modifiziert hatte: ‘Hottentottensprachen’, ‘nilotische Hamiten-Sprachen’, das ‘proto-hamitische Ful’ und das Hausa möchte er jetzt etwas ‘beiseite’ stellen, da sie ‘den Semitensprachen bereits ferner’ stünden”. As Voigt sums up here, “Das Modell, das er nun aufstellt, ist komplexer und methodisch klarer als das von 1912. Die aspektuelle Hauptopposition zwischen den Vokalen i und a, wie sie in der sekundären Konjugation des Kuschitischen auftritt, gilt danach auch in den Sprachen, die über Präfixkonjugationen verfügen. Man beachte: je eingehender die Untersuchungen werden, umso mehr tritt der ‘hamitische’ Gedanke zurück ...”

⁵⁵ A work abounding in strangely misoriented assumptions on the matters of this comparative domain = “Old School” (see Episode II of this series of studies), which was neatly reflected by Meinhof’s (1920-1a: 73) words: “Der Verfasser behandelt in fünf Abschnitten sein Thema: Die ägyptische Schrift, die Grammatik, das Demotische und das Aramäische, das Koptische, das Hebräische. Man wird zu diesem Buch von sehr verschiedenen Gesichtspunkten Stellung nehmen können, aber ich fürchte, daß es von allen Seiten Ablehnung erfahren wird – wenigstens ich selbst befinde mich immer im Widerspruch mit dem Verfasser.” All this is so much revealing about the attitude towards SH matters in egyptological “linguistics”, which is in a way typical of the current state-of-the-art also, I am afraid.

⁵⁶ Meinhof (1920-1a: 73): “Wenn er das Ägyptische für eine afrikanische Sprache hält und glaubt, daß die von Westermann bearbeiteten Sudansprachen damit verwandt sein können, so bin ich ganz anderer Ansicht. Ich stelle es zu den Hamitensprachen, die ähnlich wie die Semitensprachen nach Afrika eingedrungen sein werden und von den Sudansprachen sich völlig unterscheiden. Eine Sprache, die wie das Ägyptische das grammatische Geschlecht hat, gehört eben zu den flektierenden und nicht zu den isolierenden Sprachen. ... Von einer Anlehnung an die Behandlung der Sudansprachen ist eine Förderung nicht zu erwarten.”

⁵⁷ Meinhof (1920-1a: 73): “Außerdem ist im Koptischen der Wechsel des Stammvokals nachweisbar, also auch für das Ägyptische wahrscheinlich. Dieser Wechsel des Stammvokals ist eine weite Eigentümlichkeit der flektierenden Sprachen und dem Sudanischen fremd. Deshalb hat Leo Reinisch die Wörterbücher der Kuschitensprachen nach den Konsonanten anlegen müssen ohne Berücksichtigung der Vokale – ganz wie im Semitischen. Ich bin freilich der Ansicht, daß die Ägyptologen die Beziehungen des Ägyptischen zu den Hamitensprachen in Zukunft mehr als bisher heranziehen sollten.”

⁵⁸ Meinhof (1920-1a: 73): “Es fehlt uns noch immer eine vergleichende Lautlehre, vergleichende Grammatik und ein Stammwörterverzeichnis der Hamitensprachen. Einstweilen blieb den Ägyptologen gar nichts anderes übrig, als sich an die Semitistik anzulehnen, genau so, wie wir es bei Bearbeitung der anderen Hamitensprachen getan haben und weiter tun werden, bis die Wissenschaft der Hamitensprachen auf eigenen Füßen stehen kann.”

nature of their ʔ, ʕ, h, ḥ (Meinhof 1920-1a: 74-75), which was, however, not demonstrated by lexical matches. The long study with Meinhof's (1920-1: 81-106) analysis of Semitic emphatic consonants in comparison with Berber, Beja, Lowland East Cushitic and Hausa was one of the first remarkable attempts at composing a comparative SH phonology,⁵⁹ with a few correct sound shifts (*Lautverschiebungen*) even if it missed to report etymological evidence. Finally, we owe the striking Hausa, Ful and Bantu parallels for the traces of Semitic nominal classes (determined by F.R. Blake 1920)⁶⁰ partly to Meinhof (1921-2b: 305-306), including the most famous class marker *-b in Semitic zoonyms,⁶¹ which has later been so frequently associated with the name of I.M. D'jakonov (who too, overtook it, in fact from his Leningrad master, N.V. Jušmanov in the 1930s).

1.3.4. A. Drexel (1924-5) too followed C. Meinhof in extending the limits of Hamitic onto a number of African languages most of which are now not considered as AA.⁶²

1.3.5. A. Trombetti: the well-known omnicomparativist of that age dealt with the elements of Semito-Hamitic phonology too. In his letter to H. Schuhardt on the relationship of SH to other language families of Africa and Eurasia, Trombetti (1902: 184-185) outlined some common SH morphological features.⁶³ Then, he discussed the cognacy of Eg. *zwr* "to drink" (Trombetti 1902: 193) and the numerals 1-10 (Trombetti 1902: 196-199). His chapter surveying shared isomorphs in "Il gruppo Camito-Semitico" in his

⁵⁹ Promising prospects of future research were at least formulated by Meinhof (1920-1b: 106) who raised the *dilemmata*: "1. Läßt sich erweisen, daß Wortstämme mit emphatischen Kehlverschlußlauten der Semitensprachen unverwandt sind mit Wortstämmen in hamitischen Sprachen, in denen die emphatische bzw. Kehlverschlußartikulation stattfindet? ... 6. Welche phonetischen und etymologischen Beziehungen bestehen zwischen ʕ sowie ʕ und den emphatischen Lauten? 7. Die Artikulation der emphatischen und Kehlverschlußlaute in semitischen und hamitischen Sprachen ist mit den Hilfsmitteln der experimentellen Phonetik systematisch zu untersuchen", behind which the author's working hypothesis about an emphatization conditioned by the vocalism was hiding: "4. Besteht ein Zusammenhang zwischen der Entstehung der emphatischen Laute bzw. der Kehlverschlußlaut in Hamitensprachen und den u-haltigen Lauten, wie z.B. im Bedauye vorkommen? 5. Läßt sich ein Zusammenhang zwischen den semitischen emphatischen bzw. Kehlverschlußlauten und den u-haltigen Lauten des Äthiopischen ... nachweisen?" How one might correctly reply these, has not been shown, however.

⁶⁰ Whose offprint Meinhof (1921-2: 305, §3: "Zur Entstehung der Klassen beim Nomen") quoted in a vague and unprecise way: "Soeben geht mir ein Separatum zu von F.R. Blake, ... anscheinend aus dem *Journal of the American Oriental Society*, S. 36-48" (no vol., year).

⁶¹ Meinhof (1921-2: 305-306): "Aber noch größer wird die Ähnlichkeit mit afrikanischen Klassensprachen, wenn Bl(ake) darauf hinweist, daß Tiernamen im Semitischen häufig auf -b endigen, wobei -b gelegentlich geradezu als Suffix erscheint" (referring to Akk. šēlibu, Ar. taʕlab- vs. Hbr. šūʕāl "fox") and "Das läßt an das Suffix des Ful für große Tiere -ba denken ... Während hier -ba als Suffix von Tiernamen erscheint, so ist in einem anderen Fall n- im Anlaut in Anlehnung an andere Tiernamen entstanden. Vgl. assyr. *nimru* 'Panter', *našru* 'Adler', *nadru* 'starkes Tier' ... Sicher ist hier nun nicht an eine wirkliche Klasseneinteilung zu denken, sondern an eine Anlehnung des einen Wortes an andere. Aber auch manche Klassenpräfixe des Bantu entstammen vermutlich solcher Analogie, wie z.B. das n- der Tierklasse wohl der Anlehnung an *nama* 'Fleisch, Tier' und das mu- der Menschenklasse der Anlehnung an *mntu* 'Mensch' seine Entstehung verdankt ..., vgl. Hausa *nama* 'Fleisch, Tier', *mutum* 'Mensch'; Ful *nama* 'essen'. Diese Ansätze zur Klassenbildung sind im Semitischen aber nur von Bedeutung für die Wortbildung, während im Bantu die Klassen das ganze System der grammatischen Beziehung beherrschen."

⁶² As stated by M. Cohen (1947: 25) on Drexel (1928), "l'auteur conclut que le peul, parent au bantou, et surtout au haoussa, bornou et nouba, n'est pourtant pas à séparer entièrement du <chamitique>."

⁶³ Thus, Trombetti (1902: 184-185) lists, a.o., the "suffisso -b che io dimostrai altrove formare nel Semitico dei nomi di animali" (whose parallels he thinks to have found in IE, Nama etc.).

1923 volume (2nd ed. 1977) followed the omnicomparatistic track of L. Reinisch and C. Meinhof extended by him, besides Semitic, Egyptian, Berber, and Cushitic (including Gongon) also onto “Nilotico nord” (Nuba, Barea, Kunama) vs. “Nilotico sud” (Dinka, Shilluk, Bari, Masai) (Trombetti 1923: §§51-53) vs. “Camitico merid.” (Sandawe, Mbulunge, Ufiomi,⁶⁴ Hottentotan, Bushman, Trombetti 1923: §54, 42-44) with a comparative essay of the numerals (Trombetti 1923: 52-53, §71) and an extra chapter on “Bantu-Sudanese e Camito-Semitico” (Trombetti 1923: 53-55, §§72-72). A minor progress is signified by his section dealing with some questions of SH comparative phonology (Trombetti 1923: 338-354).⁶⁵ Playing endlessly with the alleged “consonantal alternations” instead of drawing regular correlations, Trombetti’s summary on SH/AA phonology is, however, utterly disappointing: “Concludendo: noi abbiamo trovato in tutto il Camito-semitico ... un’alternazione tra esplosive e fricative in ogni posizione della parola. ... L’evoluzione spontanea di *k t p* sembra che abbia dato in molti casi delle spiranti ...”. One can hardly disapprove of the rational position occupied about these uncertain ways by one of the greatest authorities, C. Brockelmann (1950: 58) demanding firm rules of the comparative phonology.⁶⁶

1.4. “Post-classical Hamitology”: it is characterized by a significant normalization of the standards of SH root comparison, a delimitation of the field with respect to the former omnicomparatistic demands by L. Reinisch and C. Meinhof by minimalizing the boundaries of the SH family restricted to the linguistic space represented later by the *Essai comparatif*. It is this phase when serious results in the inter-branch comparison (beside Egypto-Semitic) appeared for the first time (esp. Möller 1924, Zyhlarz 1932-3, Vycichl 1934). As for the definition of “Post-classical Hamitology”, R.M. Voigt (1988: 160ff.; 2001: 1321-2, §4) attributed the “classical period” solely to Müller, Reinisch, Meinhof, which, in his view, was followed by a further “intermediate phase” (Voigt 2001: 1322, §5) singled out to cover the decades until M. Cohen’s (1947) *Essai comparatif*, previous to Rössler’s new era. The only reason Voigt (2001: 1322, §5) adduced for this chronological sequencing is that “die Forschung nach Meinhof strebte nicht einen Aufbau

⁶⁴ Mbulunge and Ufiomi were the only right hits in this amalgamate list, both being members of Southern Cushitic (Burunge and Asa, resp.).

⁶⁵ Trombetti’s (1923: 338-350) sections on the SH comparative phonology: vocalism (Trombetti 1923: 338-339, §409), vowel coloring in Coptic and vowel conditioned by surrounding consonantism in Cushitic stems (Trombetti 1923: 339-340, §410), vocalic shifts in Semitic and Coptic (Trombetti 1923: 341, §412), diphthongs (Trombetti 1923: 341-342, §413), Berber stops (Trombetti 1923: 343-344, §415), consonantal alternations in Agaw (Trombetti 1923: 344-345, §§416-417), “alternazioni tra esplosive e fricative gutturali in altre lingue cuscitiche” (Trombetti 1923: 345-346, §418), dental alternation in Cushitic (Trombetti 1923: 346, §419), “le alternazioni *r:t e r:P*” in Cushitic (Trombetti 1923: 347, §420), “alternazione *r:l* del Bilin” (Trombetti 1923: 348, §421), “alternazioni tra dentali in altre lingue cuscitiche” (Trombetti 1923: 348-349, §422), *b ~ f* interchange in Agaw (Trombetti 1923: 349, §423), and an interchange of *b ~ f* treated as the “frequentissima in tutto il Camito-semitico” (Trombetti 1923: 349, §424), *-b ~ -w-* in Nuba (Trombetti 1923: 350, §425).

⁶⁶ Brockelmann (1950: 58): “A. Trombetti wollte noch den einheitlichen Ursprung aller Sprachen nachweisen, musste dazu aber den eben von der Sprachwissenschaft erarbeiteten Begriff des Lautgesetzes durch die Annahme der Möglichkeit eines Wechsels aller Laute unter einander wieder aufheben.”

seines Systems an, sondern stellte Einzelprobleme und -vergleiche in den Mittelpunkt”, although just this phase witnesses M. Cohen’s research for his *Essai comparatif*, an epochal attempt for a first synthesis, which can hardly be labelled an “*Einzelproblem*”. Voigt (either in his 1988 or in his 2001 overview), in fact, has not discussed in detail those common features of the “Hamitological” research that made him isolate this alleged period as distinct in between Meinhof and Cohen/Rössler, he arbitrarily labelled it as “die Arbeit an Einzelproblemen” (Voigt 1988: 160, §IV)⁶⁷ or as the so-called “nachklassische Periode” or “Forschung nach Meinhof” (Voigt 2001: 1322, §5).⁶⁸ In my opinion, this segmentation is hard to follow, as the authors after Meinhof had been basically following his same track also, at least, in the field of comparative lexicon, i.e., they carried out *ad hoc* comparisons among the “Hamitic” branches, albeit luckily getting rid of including the non-SH satellites and with some occasional vague first attempts at drawing some phonetic rules in a non-systematic manner without synthetizing the whole system of rules. Well, perhaps this is what binds the below listed authors together. Unfortunately, in both versions of his overview, Voigt missed here any mention of works on phonological and lexical comparison where precisely this era witnessed the first serious results in the field of Egyptian, Berber, Beja and Hausa (with Semitic in the background) thanks to the outstanding efforts of two pragmatical Viennese giants, E. Zyhlarz and W. Vycichl. This kind of moderate approach then culminated in the *Essai comparatif*. Henceforth, contrary to Voigt’s assessment (who was silent about so many precious works of the “post-classical Hamitology” between Meinhof 1912 and Cohen 1947), this substantial “post-classical” phase was hallmarked by both dominant figures of the Viennese school who, luckily, abandoned the artificial “widened Hamitological” setting of the “classical” phase and so they returned to the more solid position of “pre-classical Hamitology” (to use Voigt’s labels). So may I set forth discussing the outstanding output of this “post-classical” trend:

1.4.1. M. Cohen: his presentation of the SH family (1924) in 4 distinct branches (where Hausa was fully excluded as yet) and the rejection of a separate Hamitic unity has renewed C.T. Beke (1845) and C. Lottner’s (1860-1) sister-branch theory.⁶⁹ Even

⁶⁷ Entitled still so by Voigt (1988: 160-162, §IV) because, in his view, “die Forschung nach Meinhof strebte nicht eines Aufbau seines – umstrittenen – Systems an, sondern stellte Einzelprobleme und -vergleiche in den Mittelpunkt der Bemühungen.” This chapter was practically restricted to Meinhof’s work after 1912 and Klingensheben, which by no means reflects the richness of these three decades. Curiously, in this 1988 study, Voigt discussed yet in the following chapter entitled “Erstellung von Systemen” (Voigt 1988: 162-164, §V) all the later great authors like Greenberg and Rössler, i.e., both classed in the very same trend (!), against which a whole number of arguments can be raised as will be seen in Episodes VII (Rösslerian trend) and VIII (Greenbergian era), resp., of this series of papers.

⁶⁸ The only argument Voigt (2001: 1322) adduced here is that allegedly dealing with “Einzelprobleme” was influenced by the fact that Meinhof himself abandoned his pan-African almost omnicomparatistic approach: “Dies fiel umso leichter, als Meinhof schon 1921/22 seine Hamitentheorie deutlich modifiziert hatte. “Hottentottensprachen”, “nilotische Hamiten-Sprachen”, das “proto-hamitische Ful” und das Hausa möchte er jetzt etwas “beiseite” stellen, da sie “den Semitensprachen bereits ferner” stünden (1921/22: 242). Das Modell, das er nun aufstellt, ist komplexer und methodisch klarer als das von 1912.” These thoughts were literally reproduced from Voigt (1988: 161).

⁶⁹ Describing C. Lottner’s hypothesis on denying the Hamitic unity and on the equipotential SH branches, J.H. Greenberg (1962: 83-84) put it this way: “... Semitic was but one branch of a larger family in which the

though he mostly examined isomorphs, he also contributed to SH root research before his *Essai comparatif*. Thus, Cohen (1928) focused on the semantic domain of “knee” and related items, while his presentation at the GLECS session of 3 May 1933 compared (mostly Ethiopian and IE) roots signifying “Le double sens ‘testicule’ et de ‘œuf’” (triradicalized with some root extension).⁷⁰ In his next GLECS talk (20 Dec. 1933) on Sem. *√*gy*? “valley”, Cohen remained within the limits of Semitic again (?) with just an outlook on IE. Cohen (1934-5: 68-69) only ventured to draw very sketchy outlines of a “Consonantisme chamito-sémitique”. In his paper for the GLECS session of 28 Nov. 1934, Cohen (1934-7a) surveyed the previous research on the disputed affiliation of Hausa (mostly using morphological data), in which, retaining his preservations against this, Cohen (p. 2) devoted particular attention to D. Westermann’s detailed argumentation about the Hausa-“Hamitic” kinship suggesting, on the one hand, a cognacy of the personal pronouns in Hausa vs. Berber (regarding the grammatical genders),⁷¹ and a Hausa-Berber lexicon inherited from common SH, on the other hand,⁷² while he allowed also a substantial non-SH influence in Hausa.⁷³ But Cohen’s (1934-7a: 3) final word on the matter was sceptical.⁷⁴ Reflecting according to the same line of thoughts at that GLECS session,

various ‘Hamitic’ languages ... constituted each a further separate branch. This view of Hamito-Semitic was first advanced in the modern period by the eminent Semitist Marcel Cohen in 1924. [footnote omitted] It is formulated again in his general work of 1947, *Essai comparatif* ...” M. Cohen reaffirmed his position the same way in a number of subsequent papers also. In his lecture on the “Divisions internes du chamito-sémitique” (1934), e.g., beside the 4 independent branches, he refutes “Hamitic” as such: see appendix. Cohen (1934): “Un examen du soi-disant chamitique, pris soit au sens large soit au sens étroit, montre qu’il ne peut pas être défini par des particularités communes nettes et nombreuses qui excluraient le sémitique. De même, les particularités communes de l’égyptien et du sémitique sont contrebalancées d’un côté par des divergences entre égyptien et sémitique, d’un autre côté par des ressemblances soit de l’égyptien, soit du sémitique avec les autres éléments de l’ensemble. Il y a donc lieu d’abandonner la notion de «chamitique»; **le terme chamito – dans chamito-sémitique – ne représente pas plus une réalité dialectale que européen dans indo-européen.** Il est sage de poursuivre l’étude des données linguistiques **chamito-sémitiques sans préjuger d’aucun groupement** particulier entre les quatre grandes composantes de cette famille ...”

⁷⁰ Cohen: extended “avec une consonne postpalatale ou vélaire, une liquide (généralement l) et un troisième élément y, w, ou h”.

⁷¹ Westermann’s observation on Hausa (made at the GLECS session of 28 Nov. 1934), quoted in the *Comptes rendus des séances de GLECS* 1 (1934-7), 2: “Die personalpronomen (sic: p-) des Hausa zeigen deutlich Verwandtschaft” esp. in the 2nd person sg. masc. and fem. (exx. quoted from Shillh), while „Besonders interessant ist das Pronomen der 3. p. fem. dessen dessen entscheidendes Element *t* ist. Es bildet im Schillh das Feminin des Substantivs”. He isolated here the genitival morph *n* in Hausa, Berber and Beja.

⁷² Westermann’s note on Hausa in the *Comptes rendus des séances de GLECS* 1 (1934-7), 2 (session of 28 Nov. 1934): “das Hausa hat ein (sic) erhebliche Anzahl von Wörtern gemeinsam mit den Berberdialekten, was auf enger Beziehungen zwischen den beiden hinweist”. He referred even to W. Vycichl’s (1934) first *magnum opus* on “Hausa und Ägyptisch” (then still forthcoming, described here as “travail à paraître prochainement sous le titre *Hausa* (sic) und *altaegyptisch*”).

⁷³ Westermann’s remark on Hausa in the *Comptes rendus des séances de GLECS* 1 (1934-7), 2 (session of 28 Nov. 1934): “Er is klar dass daneben das Hausa deutliche Züge der Sudansprachen trägt und nur in beschränktem Sinne eine Hamitensprache genannt werden kann.”

⁷⁴ Discarding even the common signification of the morphs *n* and *t* in Hausa and Berber, and claiming moreover that „certains autres [éléments] présentent une coïncidence curieuse avec des éléments pronominaux chamito-sémitiques”, Cohen (1934-7a: 3) hastily concluded: see appendix. Cohen (1934-7a: 3): “... les différences fondamentales du fonctionnement du haoussa et langues de son groupe d’une part, du chamito-sémi-

H. Labouret (GLECS 1, 1934-7, 3) too assumed here a wide range of loaning.⁷⁵ Cohen (1934-7b: 5-6), conducting an “Entretien sur la question des labio-vélaires en chamito-sémitique” at the GLECS session of 22 Dec. 1937, had a word on the issue from an IE perspective.⁷⁶ The joint paper by M. Cohen and W. Leslau (1934-7) focused solely on Amharic in discussing the palatalization shift of $k > \check{c}$ without an outlook on the AA parallelisms. Cohen (in the 1935-1941 issues of the *Annuaire de l'École pratique des Hautes Études, IV^e section*, also 1939) released a number of minor preliminary communications with “Études sur le vocabulaire chamito-sémitique”. Reflecting on the paper by R. Cotteville-Giraudet examining at the GLECS session of 22 June 1938 (published in vol. 3, 1937-40) the alleged equivalents of Eg. *bjn.t* “harp” in “négro-africain” and even Sumerian or Indonesian, Cohen better proposed to compare Geez *baganā* “nom de la grande lyre” but the match of the C_2 was not explained. The culmination of Cohen’s output in the domain of SH etymology was his *Essai comparatif* (1947) which, as a milestone concluding (even if not definitely closing) the era of post-classical Semitic-Hamitology, will be evaluated in a separate entry in Part 2 of this Episode I (§1.5).

1.4.2. G. Möller: beside his better-known egyptological studies, author of two papers (1921, 1924) on Berbero-Egyptian isoglosses exploiting the progress French progress in Berber lexicography.⁷⁷ Although several comparisons fail because of his ignorance about the Berber *Lautgeschichte*, he was perhaps the first pioneer to formulate some common Egypto-Berber *Lautgesetze* (Möller 1921: col. 196 and 1924: 42). One is disposed to agree with Möller (1924: 42) about a closer affinity of Egyptian and Berber.⁷⁸ But its reverse may also be true: Berber stands much closer to Semitic than to Egyptian. However, without having seen the lexical evidence, one can hardly approve the allegation of Möller (1924: 43) on the close cognacy of Egyptian, Berber and Cushitic.⁷⁹

tique de l’autre, et le manque de grandes séries de morphèmes communs, doivent faire écarter l’appartenance du haoussa à la famille chamito-sémitique. Y aurait-il eu, outre des emprunts de vocabulaire, des emprunts de certains pronoms? Ce serait un fait bien rare, presque inouï, de mélange morphologique; la question semble être à réserver.”

⁷⁵ As we read in the protocol of this GLECS session, Labouret “pense que les contacts intimes avec des populations nord-africaines ont pu amener dans le groupe du haoussa des emprunts très étendus.”

⁷⁶ Cohen (1934-7b: 5-6): “l’existence d’articulations labio-vélaires, qui jouent un rôle dans les oppositions morphologiques; mais, pas plus qu’en arabe, il ne s’agit d’une série de phonèmes indépendants s’opposant aux phonèmes non-labialisés”. It was in his reflection on Cohen’s paper where E. Destaing (1934-7: 7) confirmed the non-phonemic use of labiovelars in SH.

⁷⁷ Zyhlarz (1936: 435): “Liess man ja sogar die verdienstvollen Forschungen der französischen Berberologie unter Führung von René und André Basset seitens der Ägyptologen und Semitisten nahezu unbeachtet, und das obgleich der deutsche Ägyptolog G. Möller nach dieser Seite hin zur Sprachvergleichung aufgefordert hatte.”

⁷⁸ Möller (1924: 42): “Dass das ägyptische einst den libyschen Sprachen weit näher gestanden hat als den semitischen, würde gewiss klar in Erscheinung treten, wenn jene nicht nur in ihrer modernen Gestalt bekannt wären.”

⁷⁹ Möller (1924: 43): “Die Verwandtschaft des Ägyptischen mit den Sprachen der libyschen Berbern und der hamitischen Äthiopiens steht also fest ...”, which, by the way, led Möller to an assumption, conceived in the frames of the “Hamitological” hypothesis, that “Wir dürfen also annehmen, daß ganz Nordafrika einst von einer ziemlich homogenen hamitischen Bevölkerung bewohnt war, die sich erst im Laufe des dritten Jahrtausends erheblich differenziert hat, und zwar dadurch, daß sich südlich des ersten Katarakts wohnenden Stämme

1.4.3. A. Klingenheben's great merit for SH studies in general is formulating the necessity of reconstructing the common SH verbal morphology in his fundamental study (1929),⁸⁰ demonstrating the Hausa verbal morphology to be evidently of a "Hamitic" nature.⁸¹ But, first of all, for our overview specially focusing on the history of research of AA comparative phonology, Klingenheben's (1927/8) pioneering study on Hausa historical phonology which, indirectly, has great bearing on the questions targeted here.⁸²

1.4.4. C. Brockelmann: his epochal study "Gibt es einen hamitischen Sprachstamm?" (1932) offers a rigorous and critical survey of the grammatical and lexical affinities between Semitic and "Hamitic". Noteworthy is his treatment of the isoglosses and isomorphs in the manner of the sister-branch theory, individually among the Semitic, Egyptian, Berber, and Cushitic branches. He was rightly reluctant to accept the scarce evidence for the unity of the "Hamitic" languages and instead, he was disposed to assume with R. Lepsius a loose areal phylum,⁸³ which received considerable echo.⁸⁴

mit dunkelhäutigen Bevölkerungselementen vermischt habe, während die Libyer blonde, weißhäutige und blauäugige Zuwanderer in sic aufgenommen haben." Anyhow, already Meinhof (1912: 253) had rightly assumed Egyptian to have resulted from a socially-historically amalgamated penetration of diverse multi-lingual ethnic groups: "Produkt der gegenseitigen sozial-geschichtlichen Durchdringung mehrsprachiger Volkselemente".

⁸⁰ Klingenheben (1929: 244): "Wenn ... die Hamiten und Semiten Brüder sind, so dürfen wir uns ... nicht auf diese den Semitensprachen vielleicht besonders nahestehende Untergruppe der Hamitensprachen beschränken, sondern müssen auch andere Glieder dieser Sprachfamilie ... einbeziehen. Es ist etwa zu untersuchen, ob das heutige, mehr oder minder reichlich ausgebildete Verbalsystem auch anderer Hamitensprachen ein ursprünglich kompliziertes ist oder ob wir hier etwa ältere oder jüngere Schichten feststellen können und ... wie diese Schichten auch hinsichtlich ihrer Form und Bedeutung zu dem semitischen Verbum verhalten. Hierbei wird sich schon apriorisch annehmen lassen, dass wir, je ferner eine Hamitensprache heute dem semitischen Sprachtypus steht, mit umso grösserer Wahrscheinlichkeit das, was sich in ihr als ein mit dem Semitischen gemeinsamer Bestandteil herauschälen lässt, auch als wirklich alten, präsemitisch-hamitischen Besitz der beiden Sprachfamilien ansehen können ..." R.M. Voigt (1988: 161-164) devoted a long chapter to the long surviving dispute between A. Klingenheben and O. Rössler on the questions of a common Semito-Berber verbal morphology, which are, however, of no relevance here to the history of AA comparative phonology.

⁸¹ Klingenheben (1929: 264): "die älteste Verbalform" was in Hausa as Proto-Semitic "ein präfigierender, zeitloser Aorist".

⁸² Translated into English and provided with abundant up-to-date commentaries by P. Newman (2004).

⁸³ Brockelmann (1932: 817): see appendix. Brockelmann (1932: 817): "... gänzlich unverwandte Sprachen, deren Gebiete aneinanderstoßen, nicht nur Wörter austauschen, sondern auch Laute und Formen. So wird es auch in Afrika gewesen sein. Schon Lepsius nahm er mit Recht an, daß sich hier nicht verwandte Sprachen in weitem Umfang miteinander gemischt haben." Brockelmann (1932: 818): "Schuchardt, der selbst noch an einem 'hamitischen' Sprachstamm glaubte, hat doch einmal mit Recht betont, daß es niemals möglich sein werde, eine hamitische Ursprache zu rekonstruieren. Er meinte doch wohl, daß die jungen Entwicklungsstufen, in denen uns diese Sprachen allein vorliegen, kein gesichertes Material dafür bieten, er wird aber wohl in dem anderen Sinne recht behalten, daß eine solche Ursprache nie bestanden hat. In einer künftigen Geschichte der Sprachwissenschaft wird der hamitische Sprachstamm vielleicht ein ähnliches Schicksal haben, wie vordem der turanische, den Max Müller entdeckt zu haben glaubte."

⁸⁴ M. Cohen (1947: 23): "pour le principal auteur de manuels, C. Brockelmann, la position réservée et la non-utilisation des données ont finalement fait place à une prise de position théorique qui permet des rapprochements, mais écarte l'idée de la filiation." G.W. Tsereteli (1970: 271): C. Brockelmann arrived "zu der Schlußfolgerung, daß die Ähnlichkeit zwischen den genannten Sprachgruppen nicht durch gemeinsame Herkunft bedingt ist, sondern das Ergebnis von Kontakten zwischen ursprünglich gar nicht verwandten Sprachen darstellt, die ähnliche (sic) Wesenszüge im gegenseitigen Austausch untereinander und mit Substratvölkern entwickelt haben. Er weist darauf hin, daß, so wie in Amerika, gänzlich unverwandte Sprachen, deren Gebie-

1.4.5. E. Zyhlarz: among the *élèves* of the Viennese school, one of the most fruitful authors of the “post-classical Hamitology” in spite of all the shortcomings. After K. Sethe’s (1916) basic study on the Egyptian numerals, he re-examined the question but in a “Hamitological” context (1931), which had become the only etymological analysis of 1-10 for long decades to come. His fundamental study on the “Ursprung und Sprachcharakter des Altägyptischen” (1932-3), focusing on Egyptian’s cognacy with Berber and Cushitic,⁸⁵ listing 116 Egypto-Berber isoglosses and 113 Egypto-Beja matches, in spite of all its errors and untenable racial shade in his methods (leading him to exclude Hausa from “Hamitic”),⁸⁶ is still a by far more important contribution to SH comparative lexicon than any of the works of this kind by Meinhof and before him. Zyhlarz (1932: 72), who regarded himself as the first representative of the “historische Hamitologie” since the time of L. Reinisch, was perhaps the second one after C. Meinhof (1912) to give a larger list of 9 Hamitic distinctive features⁸⁷ which was misleadingly handled as an axiom.⁸⁸ It was here in this study, however, that he recognized the “Hamitic” nature of the “südwestkuschitische” Kafa language,⁸⁹ whereas he observed that among the

te aneinanderstoßen, nicht nur Wörter austauschen, sondern auch Laute und Formen, es ebenso in Afrika gewesen sein wird. Brockelmann meint deshalb, daß es richtig wäre, für die Bezeichnung von Beziehungen der semitischen Sprachen zu denen Nord- und Ostafrikas den von Trubetzkoy für solche Verhältnisse vorgeschlagenen Namen ‘Sprachenbund’ zu benutzen. Dieser Gesichtspunkt G. Brockelmanns fand in der Wissenschaft weder Anklang noch Beachtung. Gegenwärtig besteht die allgemein anerkannte Meinung, daß die semitischen Sprachen zusammen mit einer Reihe Sprachen Afrikas eine Gruppe verwandter Sprachen bilden, die sogenannte hamito-semitische oder semito-hamitische, afroasiatische (Greenberg), hamitische (Murdock) und eryträische (Tucker) Gruppe.”

⁸⁵ Zyhlarz (1932-3: 26): “... Bedawye, noch mehr ... Bilin und Agaw-Sprachen ... das völlig verfremdete Galla zeigen eine deutliche Modifizierung gegenüber dem ursprünglich wie das älteste Semitisch gearteten hamitischen Sprachcharakter. Im Niederkuschitischen ist das Saho in vielen Zügen gleichfalls von einer ähnlichen Fremdschicht unterwachsen; Somali dagegen hat auffallend starken Widerstand geleistet. Wortschatz und Syntax innerhalb der genannten mittleren Südgruppe war stark modifizierenden Faktoren unterworfen, so dass ein Vergleich in Bausch und Bogen ein völlig verwirrendes Bild vom Wesen des Hamitischen ergeben müsste”.

⁸⁶ E. Zyhlarz (1932-3: 27) labelled Hausa “Nigger-Hamitisch” (sic) which, in his vision, should be “erst in seinem hamitischen Fundament freigelegt”. In Satzinger’s (2002: 229) view, Zyhlarz (1932-3) “expressly attempts to counterbalance the predominance of Semitic in comparison with Egyptian by investigating various aspects of Egyptian and ‘Hamitic’ (Berber and Cushitic; Hausa – being what he termed ‘Niggerhamitisch’ (sic) – is not included”.

⁸⁷ As summarized by H.G. Mukarovsky (1981: 517): (1) emphatics, (2) “artikulatorische Raffung (unter dem Druck des Starktones)”, (3) “Sinnvokalismus (Innenvokale unterliegen sinngabendem Wechsel)”, (4) “strenge Unterscheidung des grammatischen Geschlechts”, (5) “dreifache historische Reihe des Personalpronomens”, (6) “zwei Genera verbi (Tätigkeits- und Eigenschaftsverba)”, (7) “Unterscheidung vollendeter und unvollendeter Verbalhandlung (Fiens/Faktum)”, (8) “Präfixkonjugation der Tätigkeits- und Suffixkonjugation des Zustandsverbum”, (9) “Stammerweiterungselemente des Verbum (s-Kausativ, n-Inversiv, m-Sozial, t-Reflexiv)”.

⁸⁸ Zyhlarz (1932: 72): “Jede Sprache Afrikas nichtsemitischen Ursprungs, welche sich historisch auf einen Sprachtyp mit allen hier genannten 9 Hauptmerkmalen zurückführen lässt, ist eine hamitische Sprache. Alle, bei denen dies nicht angeht, scheiden aus dem Vergleich aus”.

⁸⁹ Which, as assumed by Zyhlarz (1932: 72), had “seit Jahrtausenden das nichthamitische mittelländische und eryträische Sprach- und Völkergebiet überlagert ...”.

“Hamitic” branches displaying the clearest Semitic affinity is Berber,⁹⁰ which is essentially indeed true.⁹¹ Zyhlarz (1934) continued and multiplied G. Möller’s (1924) Berbero-Egyptian etymologies by far trying to set up common verbal root types becoming the first scholar ever to lay solid bases of a comprehensive comparative Egypto-Berber phonology even if some of his matches fail on the grounds of segmentation and some consonantal correspondences are no longer tenable. Zyhlarz (1934-5) discovered diverse layers of Egypto-Coptic (and even Berber) parallels also in Nubian, a considerable share of which, however, was not meant as genetic ones.⁹² Among his (1936: 438/9-446) further Berbero-Egyptian isoglosses some are false being erroneously segmented, where he (1936: 447) treated Berber as “nordhamitisch”, while Beja and Somali as “südliche Hamitensprachen”. In the same paper, Zyhlarz (1936: 446) proposed some Beja-Egyptian etymologies and finally (1936: 450) also Egypto-Berber-Beja isoglosses. Of course, Zyhlarz (1936: 450-451) put forward his own limited edition of the “Hamitic” theory correctly surmising „die grosse Entwicklungsferne zwischen den einzeln Gruppen der modernen Hamitensprachen”, viz. the enormous time depth in the separation of the African (i.e., “Hamitic”) branches.⁹³

⁹⁰ Or, as formulated by Zyhlarz, “Der historisch reinste (sic) Vertreter des hamitischen Sprachtypus ist Berberisch ...”

⁹¹ Cf. the paper by G. Takács (2015) on the classification of AA branches according to the isomorphs.

⁹² Whose idea was misconceived by Brockelmann (1932: 817) as maintaining cognacy and so it was by far not rightly refuted: “Auch im Nubischen erkennt ja Zyhlarz ... manche hamitischen Anklänge an, obwohl er den von Reinisch unternommenen Versuch, eine genealogische Verwandtschaft zwischen Nubisch und ‘Hamitisch’ zu erweisen, mit Recht nicht als gelungen erachtet.”

⁹³ Zyhlarz (1936: 450-451): “Klar wird ..., dass um die Zeit, wo das ... rekonstruierte libysche Altberberisch anzusehen ist, das gleichzeitige Osthorn-Hamitisch eine zwar verwandte, aber durchaus eigen gebaute Hamitensprache gewesen sein muss. Aus dieser ... Tatsache erklärt sich auch die grosse Entwicklungsferne zwischen den einzelnen Gruppen der modernen Hamitensprachen: der hamitische Sprachstamm hat sich sehr früh in durchaus eigengerichtete Einzelsprachen gespalten, deren allerletzte Ausläufer die heutigen Hamitensprachen darstellen. Die Dinge aber in dieser Weise erkennbar zu machen, darin liegt auch hier der Wert der etymologischen Transposition ins Ägyptische. Vorliegende kurze Skizze der für die historische Hamitistik unerlässlichen Konkordanz-Untersuchungen und ihre Vermittlung für das Bild historischer Grundlagen innerhalb dieses uralten Ablegers des Frühsemitischen, wie es sich über Nordafrika hin verbreitet hat, mag vorläufig zur Allgemein-Orientierung genügen. ... Das Hamitische als Sprachstamm hat es einmal gegeben. Derselbe gehört aber geschichtlich in das Entwicklungsbild des Semitischen. Dieser Zusammenhang mit dem Semitisch ist nun aber keineswegs in der Weise zu denken, dass da eine der heutigen asiatischen Semitensprachen als Aszendent in Betracht käme. ... Die Sache ist im Gegenteil sehr einfach: zur Zeit, wo das semitische Verbum noch seine älteste Gestalt hatte, nämlich die wie wir sie im alten Ostsemitisch (Akkadisch) vor uns haben, damals lagerte beduinisches Altsemitisch bereits weithin auf nordafrikanischen Boden. Naturgemäss bewirkte diese Isolierung enerseits und die zwangsläufige Symbiose mit Fremdstämmigen daselbst andererseits eine völlig von der asiatischen Entwicklung abweichende Richtung. ... Nunmehr aber, wo wir durch das im Ägyptischen erhaltene ... Material althamitisches Sprachgut zur Hand bekommen, ist es nur mehr eine detaillierte Kleinarbeit, ... durch die sich die einzelnen Gruppen des hamitischen Sprachgebietes als individuellen Varianten des einstigen frühsemitischen Gesamtzweiges kennzeichnen. Wenn wir also bei aller Betonung des semitischen Zusammenhanges die hamitischen Sprachen dennoch als eigenen Arttypus behandeln, so folgen wir dabei nur der geschichtlich-geographischen Gegebenheit. Das gemeinsame Abtrennungsschicksal vom alten frühsemitischen Ausgangsgebiet hat die afrikanischen Frühsemiten-Idiome zu einer historischen Sondergruppe gegenüber den unter anderen Bedingungen fortentwickelten asiatischen Semitensprachen gestempelt.”

1.4.6. E. Cerulli: beside his main field of interest, he research also Cushitic historical phonology and root structure theory on which he presented a number of lectures for the GLECS. Thus, his GLECS paper (1931-4a, session of 25 April 1934) restored ancient trilateral roots common to Semitic and Cushitic (either as inherits cognates or loans) which in the latter branch were *lautgeschichtlich* eroded to biliteral ones – his Semito-Cushitic comparative word-list was perhaps one of the first ones of its kind, at least, in the genre of the later inter-branch comparison evoking a number of comments at the session,⁹⁴ where especially remarkable is that by M. Cohen celebrating the Italian pioneer of Semito-Cushitic comparison.⁹⁵ Cerulli's talk at the GLECS session of 20 June 1934 surveyed the history of the Cushitic labiovelars, which, even if examined introverted within the frames of this branch, has resulted in some remarks from beyond these placing the matter in a SH context.⁹⁶ Cerulli's (1934-7b) lecture at the session of 22 May 1935 touched upon again a fundamental question, viz. the stable vocalism in Cushitic as opposed to the Semitic apophony which generated others' observations from global SH perspectives.⁹⁷ For the session of 28 April 1937, he elaborated the problem of trilateral roots in Cushitic with an original conclusion on a small Cushito-Semitic inherited share of original triradical roots.⁹⁸ Cerulli kept dealing with the Cushitic root structure at the

⁹⁴ Comptes rendus du GLECS 1 (1931-4), 45: "Il serait certes désirable d'avoir, surtout pour la comparaison sémitique-couchitique encore plus d'exemples que dans la liste de E. Cerulli, qui n'a pu être insérée entier" (J. Deny, M. Cohen); "Dans l'ensemble, ce qui est encore une confirmation, le copte, en face de nombreuses racines trilitères de l'égyptien ancien, a essentiellement un type analogue au couchitique" (J.-J. Clère); "De même le berbère a beaucoup de racines courtes, notamment à deux consonnes jointes: on peut quelquefois reconstituer une racine plus longue; par exemple on constate qu'une labiale tend à disparaître devant une consonne subséquente" (E. Destaing).

⁹⁵ Cohen (1931-4: 45): "**mais dès maintenant la preuve est suffisamment faite; l'obstacle théorique que certains voulaient opposer à la comparaison du couchitique et des autres langues chamito-sémitiques est franchi définitivement** par la démonstration de E. Cerulli, qui rend un service essentiel au comparatisme".

⁹⁶ Comptes rendus du GLECS 1 (1931-4), 49-50: "Les labiovélares sont instables dans beaucoup de langues; peut-être le couchitique, à qui le sémitique d'Éthiopie doit ses labiovélares, les doit-il lui-même à un substrat africain. L'on souhaiterait trouver moins de caprices et plus de correspondances systématiques dans le traitement des labiovélares à l'intérieur de chacun des dialectes" (M. Cohen); p. 50: "... l'on constate en berbère des phénomènes tout à fait semblables à ceux du couchitique" (E. Destaing).

⁹⁷ Thus, E. Dhome (1934-7: 27) compared the hollow roots in Akkadian and Hebrew "traitées morphologiquement comme des bilitères ... Les mots rattachés à ces racines expriment généralement des idées simples et élémentaires, ce qui ferait supposer un état très ancien du sémitique, où, comme en égyptien, le bilitéralisme n'avait rien d'anormal. Il fallait donc une voyelle stable entre les deux consonnes radicales pour prononcer le mot et lui faire exprimer exactement l'idée voulue." M. Cohen (1934-7: 27-28) too partly echoed this view: "à une époque ancienne du sémitique il y ait eu des racines bilitères à voyelle médiane ... Mais il n'est pas impossible que ces racines aient eu elles-mêmes une forme encore plus ancienne trilitère. Aussi bien peut-on observer en couchitique, comme l'a montré E. Cerulli la transformation d'anciens trilitères en bilitères; on observe le même fait dans le passage de l'ancien éthiopien à l'amharique. **Ce sera l'étymologie chamito-sémitique qui pourra éclairer mieux les différents états anciens auxquels on remonte historiquement.** D'autre part, l'évolution qui semble s'accomplir en couchitique de la présence à l'absence d'alternances vocaliques a son analogue dans l'évolution d'une partie des langues indo-européennes."

⁹⁸ Cerulli (1934-7b: 85-86, §1): "La diffusion du type trilitère est différente suivant les groupes de la famille couchitique. ... on peut dire déjà que le minimum de racines trilitères est dans les langues sidama et le maximum en bédja ... On peut donc dire provisoirement que le type trilitère de racine est mieux conservé dans les langues parlées au Bord de la Mer Rouge et de l'Océan Indien que dans les langues du plateau

GLECS session of 22 June 1938 (vol. 3, 1937-40) where he set up a number of Cu.-Om. isoglosses.

1.4.7. G.A. Barton (1934: 1) too, in his frequently quoted book yielding little for the comparative AA phonology and lexicon, represented better the “pre-classical” mainstream *communis opinio* of his age (in spite of his racial position due to a remarkable impact of C. Meinhof)⁹⁹ on a “Hamitic” unity in the narrower (Voigt’s “pre-classical”) sense, namely that of Egyptian, Berber and Cushitic,¹⁰⁰ whose common ancestors he also sought in Asia on a racial basis.¹⁰¹ Similarly to Zyhlarz, Barton also recognized the incomparable diversity of the branches he classed under “Hamitic” as contrasted with Semitic.¹⁰² He also surmised the background of Egyptian linguogenesis.¹⁰³ Surveying some common peculiarities of Semitic phonology, for Barton (1934: 17-18) “it is clear that Hamitic and Semitic possess in common very unusual articulation, and that this articulation is inseparable from primitive Hamitic and Semitic speech. It should be emphatically noted that this kindred phenomenon of the two groups of languages appears in its fuller and more primitive form in certain Hamitic languages and that its occurrence in the Semitic languages is best accounted for as a later narrowing of the early Hamitic usage.” He appears to have a pretty advanced vision of the originally predominantly biradical root stock of the “Hamitic” branches.¹⁰⁴ Here, Barton (1934: 20) surveyed the ways of

éthiopien.” Cerulli (1934-7b: 86, §4): “Le couchitique – surtout celui des groupes parlés au bord de la mer, au contact immédiat du sémitique – a conservé un certain nombre de racines trilitères à côté du type bilitère devenu historiquement le plus diffusé”.

⁹⁹ A.S. Kaye and P.T. Daniels (1992: 430-431): “Barton (1934) is excellent proof of the popularity of the Meinhofian point of view. ... In fact the Berbers are referred to as the ‘Hamites of purest blood’ (p. 11) whereas the ancient Egyptians were Hamites mixed with Semites, the Bedawye were Hamites mixed with Cushites and Nubians, the Somali and others were Hamites mixed with Cushites, while the Maasai were Hamites ‘mingled with a Negroid stock’ (pp. 11f.). As can be gleaned from Barton’s footnotes, the references are almost exclusively to Meinhof (1912).”

¹⁰⁰ Barton (1934: 1): “The term Hamite covers the ancient Egyptians and their descendants, ... Libyans and Berbers ..., certain tribes of Abyssinia and Somali Land, and some other tribes ...”.

¹⁰¹ Barton (1934: 9-10): “Most scholars ... have assumed that the Hamites developed in North Africa out of the Mediterranean race, after the last glacial epoch. This theory has received the endorsement of such ethnologists as Keane, Brinton, Sergi, Garland, Ripley, and von Luschan, and is accepted by philologists, such as Maspero, ... W. Max Müller, Meinhoff (sic: -ff), and Worrell. [footnotes omitted] ... It will appear, as we proceed, that this North African hypothesis best explains all the facts at present known to us, and is probably true.” Barton (1934: 10): “... Adolf Erman ... expressed his conviction that the so-called Hamitic race is simply Semites who migrated into Africa from southern Arabia, and who have been corrupted (sic!) by various admixtures of African (sic!) blood (sic!). ... scholars are not altogether agreed as to whether the ancient Egyptians should be classed with the Hamites or the Semites.”

¹⁰² Barton (1934: 13): “... the Hamitic languages ... present much greater differences among themselves than are seen in the Semitic languages.”

¹⁰³ Barton (1934: 14): “It is also well established that Egyptian was modified by contact with Semites. Of all the Hamitic languages, those in and north of the Sahara Desert have preserved the best what appears to have been the original Hamitic type. Here Hamites for many centuries came into less close contact with peoples of other races.”

¹⁰⁴ Barton (1934: 19): “Erman ... held that the roots of Egyptian and the Hamitic languages had also been trilateral [footnote omitted] – a view in which ... W. Max Müller then concurred [footnote omitted] ... Brockelmann ... in 1908 ... maintained this view, but ... in 1913, he abandoned it. [footnote omitted] The more

trilateralization, then he surveyed some elements of a common SH morphology (Barton 1934: 21-26). All this was done without discussing any linguistic evidence, however.

1.4.8. D. Westermann, in his preface to G.P. Bargery's (1934) Hausa lexicon (pp. ix-xix), analysed in chapter "2. Traditions concerning the origin of the Hausa people" (pp. xi-xii), where, among others, he mentions H. Barth¹⁰⁵ regarding Hausa as part of Berber which he appears to have also supported.¹⁰⁶

1.4.9. J. Lukas: the first field researcher of the Chadic languages to have isolated and distinguished the diverse language groups of the Lake Chad area (1934),¹⁰⁷ among which he found one akin to both Hausa and "Hamitic",¹⁰⁸ which he surmised to be due to an admixture,¹⁰⁹ so he has isolated "the Chado-Hamitic group" (Lukas 1936c: 344-346),¹¹⁰

complete and thorough study ... given to the Hamitic languages, especially by Reinisch [footnote omitted] and Meinhoff (sic), [footnotes omitted] has made it clear that the great majority of Hamitic roots – especially those which appear to be native, were bi-literal. Further study of the roots of the Semitic languages also tends to prove that probably a large number of its present tri-literal system ... were originally bi-literal. From these bi-literals, tri-literal roots have been built up."

¹⁰⁵ Whom Westermann (1934: xi-xii) claimed to be "convinced that they are a branch of the Berbers (Amazigh) in North Africa, that they lived for a long time in the region between Damerghu and Azben (Air) and immigrated into their present residences about A.D. 1000" which was based "not only on oral and partly written traditions, but also on linguistic affinities of the Hausa language with Logone and with the Berber dialects ..."

¹⁰⁶ Westermann (1934: xii): "But even if it is true that the **Hausin** of Ibn Said were the Hausas and they ... lived at that time near Lake Chad, this is not inconsistent with the presence of a Berber element in the Hausas of to-day. There can hardly be a doubt that this element exists, in the language as well as also in the physical appearance of many individual Hausas." Westermann, specifying in his section "4. The Hausa language" (pp. xiii-xiv), states first of all: "Hausa is a Hamitic language and belongs to the northern or Berber dialects of North Africa, although this relation is not a close one in point of etymology. The main proof of the Hamitic character of the Hausa language is its distinction of grammatical gender in noun and pronoun. This distinction ... shows ... clear affinities to the Berber dialects. This same characteristic ... is one of the connecting links between Hamitic and Semitic languages. ... The Hausa language is not, however, exclusively Hamitic in character. Just as the population has as a substratum a pure negro (sic) element, so the vocabulary as well as the grammatical peculiarities ... disclose definite connexions with surrounding Sudanic (Negro) languages. These relations need a close investigation, which has only recently been started."

¹⁰⁷ Ignoring Lukas' earlier publications on this matter, J.H. Greenberg (1962: 83) substantially postdated his discovery: "In 1938, Johannes Lukas pointed to the fact that Hausa could not be considered in isolation, but belonged to a much larger group of languages in West and Central Africa, to which he gave the name Chad-Hamitic."

¹⁰⁸ Lukas (1936c: 332): "... the existence of a Hamitic group in the Sudan is rather a surprise, and the inclusion of the respective languages in a special group, which seems to have resulted from a collision of a Hamitic and an older African world (the latter being perhaps to the Mandara Group of to-day) is a necessary adjustment ..."

¹⁰⁹ Lukas (1937-8: 181): "... um einen Ausdruck von Ernst Zylinder zu gebrauchen, diese Sprachen nicht als 'genuine' Hamitensprachen ansehen, sondern als Ergebnis einer Mischung hamitischen Sprachgutes mit älteren Sprachgütern, die nicht hamitisch gewesen sind, jedoch als solche Mischungen, deren 'tragende' Sprachschicht hamitisch ist."

¹¹⁰ Listed and classed by Lukas (1936c: 344-345) as **(1) "Western Sub-group"** (in the west of Bornu, east of Kano province): Bolewa, Karekare, Ngamo, Bade, Nəgzəm (= Ngizim), **(2) "Middle Sub-group"**: dialects of Kotoko (called Magəri by the Kanuri, today glossed as Makeri, "phonetically the most richly developed", its phonetic system was set in a table on p. 346), Buduma (lake Chadic islands dwellers), Muzgu, **(3) "Eastern Sub-group"**: Mubi, Kajagise (= Kajakse) and Masmaje (Lukas: "all three peoples can undersand

which has had an unfortunately sounding echo in modern AA linguistics,¹¹¹ along with the old “Hamitological” criteria (cf. Lukas 1936c: 345) in Chadic.¹¹² Lukas (1936d: 582-587; 1937-8) gave an even more detailed update of some common grammatical features of Chadic (as implosives, ejectives and laterals, grammatical genders, broken plural) shared with other SH branches, although neither of his papers launched into dealing with the lexical evidence.¹¹³ Curiously, M. Cohen (1947: 25) spared his words of recognition on Lukas’ (1936a and 1939a) significant discoveries.¹¹⁴ At any rate, it is in 1936 that Lukas practically founded the frames of later Chadic comparative linguistics, which, however, due to the decisive reluctance of M. Cohen in accepting its supposed SH bases, had to wait another two decades to come for its integration in comparative AA studies thanks to J.H. Greenberg (see Episode VIII of this series).

1.4.10. W. Vycichl: it is in his person (trained by L. Reinisch’s Viennese *Doppelinstitut*) that the most fruitful researcher and eminent figure of both the “Hamitic” common stock (luckily, mostly void of the usual far-fetched racial tones of his era)¹¹⁵ and the “old school” of Egypto-Semitic lexical comparison was brilliantly combined. It is just him whose extraordinary output may be regarded, in spite of all its shortcomings, as the culmination of both trends. From the very start of his enormously long career (1930es to 1990es) on, he had rigorously stuck to the neo-grammarians method of applying regular *Lautgesetze* in the ocean of his convincing etymologies. His very first study on the affinities of “Hausa und Ägyptisch” (1934) turned out to become epochal on the thorough comparison of both languages on almost the whole scale of the grammar, which, in the opinion of M. Bechhaus-Gerst (1998: 116) “did not evoke many positive reactions”¹¹⁶

one another”). From these “subgroups” Lukas has still separated (Lukas 1936: 347-348) the Mandara group (“languages spoken by old tribes south of Bornu”): Bura and Pabir (in and around Biu), Kilba, Margi, Chibbak, Gamargu, Bura.

¹¹¹ In their lengthy review of the 1983 SH Congress in Marburg/Lahn, A.S. Kaye and P.T. Daniels (1992: 430-431) critically evaluated L. Reinisch’s and C. Meinhof’s “Hamitology”, a.o.: “To add more fuel to the fire we have the misleading term ‘Chado-Ham(itic)’ coined by the German Africanist school of J. Lukas for what is now recognized as a sub-branch of Ch(adic).”

¹¹² Lukas: “Grammatical gender is common to all these languages. ... The pronominal elements show in many respects the known Hamitic forms. In the Middle and Eastern Subgroups broken plurals occur.”

¹¹³ Except for the word for “bone” in Chadic (Hausa *kaši*) vs. Eg. *qs* (misquoted as *krš*) (Lukas 1937-8: 292), the numeral “4” in Chadic (Hausa *fūḍu*, Muzgu *pudu*, Mubi *faḍa*) and Beja *faḍig*, Eg. *fd.w* (Lukas 1937-8: 298).

¹¹⁴ Cohen (1947: 25): Lukas “a envisagé avec le haoussa les langues apparentées de la région du Tchad et il a lancé le terme de tchado-chamitique. Tout en marquant des points de contacts septentrionaux, avec le berbère semble-t-il, il pose surtout la théorie d’une extension du couchitique vers l’Ouest ...”

¹¹⁵ His ideas on the Berber ethnogenesis were not restricted purely to racial arguments. Cf. Vycichl 1935: 79: “Zur Entstehung der modernen Berbersprachen haben neben dem hamitischen Element noch eine Reihe anderer mitgeholfen ... besonders ... die blonden, hellhäutigen und blauäugigen Cmḥ-w-Libyer ..., die sich von dem rotbraunen und schwarzhaarigen Čḥn-w nicht nur rassisch, sondern auch in ihren Kulturelementen scharf trennen. Die Čḥn-w haben sich in ältester Zeit (prädynastisch) kaum von den Ägyptern unterschieden ...”

¹¹⁶ Her words are not really in accordance with those by other outstanding experts of SH like M. Cohen (1947: 25): “W. Vycichl s’est attaché surtout (sic!) à la question du haoussa et lui aussi a porté surtout son attention sur les rapports avec l’égyptien.” His thesis from 1934 was listed by both I.M. D’jakonov (1965: 112) and V.M. Illič-Svityč (1966: 14) among the basic tools of common SH comparison. Etc.

until much later when in 1966 Carleton T. Hodge took up Vycichl's idea in his 'Hausa-Egyptian establishment' ". Vycichl (1935: 77) also returned to the puzzle of the two linguistic layers of Egyptian.¹¹⁷ His other sharp-sighted observation made here agrees perfectly with the common assumption proposed a few decades later by several authors:¹¹⁸ on the close position of these three branches in the NAA block (Semitic, Egyptian, Berber).¹¹⁹ Listing the "Hamitic" features of Hausa (implosive and glottalized stops, gender, 2nd person personal pronouns, Egyptian and Berber cognates to some anatomical terms), it turned out to be an equally correct intuition when Vycichl (1935: 80) literally immediately joined and approved J. Lukas' epochal exploration about including a number of West Chadic languages in the AA family beside Hausa.¹²⁰ Similarly valid was his assumption on the fossil nominal classes in Arabic¹²¹ which, in his basically right theory, was presumably due to external non-Semitic influence.¹²² Vycichl's (1935: 88-89) moderate vision of the (N)AA prehistory appears also to contain a few pretty realistic moments:¹²³ "core Semitic" developed later closely under a later PIE influence after part of "Semitic" left the Levant.¹²⁴ Vycichl's (1952) study on Punic lexical influence in Berber was commented on by J. Lecerf (1957-60: 71-72). As an élève of the old Viennese school of Reinisch, Vycichl remained faithful to the concept of the "Hamitic" unity (the only

¹¹⁷ Vycichl (1935: 77), on the one hand, isolated "Das Urägyptische ... dem Arabischen nahestehend, doch viel altertümlicher als dieses", whereas, on the other hand, the younger "altwestsemitische" layer seemed to him tightly close to Hebrew, but he found "Hamitic" correlates phonologically to match only the "Urägyptische" layer.

¹¹⁸ Like I.M. D'jakonov (1965: 99-102 in Russian; 1965: 102-105 in English), Ch. Ehret (1979; 2000, 292, §11.4.2 based on 1995), R.M. Blench (2006: 148, fig.4.8 and pp. 152-162) and G. Takács (2015).

¹¹⁹ Vycichl (1935: 77): "Der Wortschatz des Berberischen weist von allen Hamitensprachen die meisten Parallelen zum Ägyptischen und Semitischen auf."

¹²⁰ Vycichl (1935: 80): "Neben dem Hausa wären ferner die besser als 'hamitoid' zu bezeichnenden Sprachen Angas, Bolanci, Ankwe, Montol, und neben anderen auch das kürzlich von Lukas als hamitisch erkannte Logonē zu erwähnen."

¹²¹ Vycichl (1935: 87-88): "Für die Existenz von Nominalklassen (Individualis *-t*, Menschen *-n*, Sachen *-l*, &c.) sprachen bedeutungsähnliche Nomina mit gleichem Auslaut; hier seien nur einige arabische Beispiele der hypothetischen Tierklasse auf *-b* (schon von Möller vermutet) gegeben: *ʿarna-b*, Hase, *ʿandālī-b*, Lerche, *ʿakra-b*, Skorpion, *dab-b*, Eidechse, *dhiʿ-b*, Wolfschackal, *dhibā-b*, Fliege, *dīb-b*, Fisch, *dub-b*, Bär, *kal-b*, Hund, *ḥanṭa-b*, Hedschaz-Ziege, *ḥaufa-b*, Kalb, *ḥinṣā-b*, ein Vogel, *ḥillī-b* (u. Varr.), Wolf, *ḥāʿna-b*, Widder mit rückgebogenen Hörnern, *fauha-b*, Igel, *fakaḥta-b*, Widder mit starken Hörnern, *fuhru-b*, Gezelle, *taula-b*, Eselin, *thaʿla-b*, Fuchs, *ʿuḳā-b*, Adler, *ʿunṣā-b*, Heuschrecke, *ḡurā-b*, Rabe, etc. Bemerkenswert ist *ḡayna-b*, Zwerg, neben *ḡayna* (cf. *ki* im Suaheli bei *ki-jana*, Kind, *ki-poḡu*, Blinder, zum Ausdruck des Kleinen, Verächtlichen, also Zwergtier) und *thaʿla-b* neben *thuʿāla*, Füchsin, hebräisch *ḡūʿāl* ohne *b*". The suffix *-b* was also isolated (independently from one another?) by C. Meinhof (1921-2) and N.V. Jušmanov (1934, re-published in 1998: 170 and 174) along with a few other noun class markers (= "классные показатели").

¹²² Which, as formulated by Vycichl (1935: 80), "durch ein äusseres Moment hervorgerufen worden ist".

¹²³ Even if the details do not overlap with those of A.Ju. Militarev's (1983 etc.) Natufian theory.

¹²⁴ Vycichl (1935: 89): "Ein Teil dieser 'Frühsemiten' wandte sich nach Afrika nach Afrika und prägte den dortigen Sprachen seinen Stempel auf. Die Entwicklung der Idiome auf asiatischem Boden ging dagegen vermoge ihres geschlosseneren Lebensraumes weit komformer vor sich. Viele Errungenschaften nach der Trennung, wie der Trilateralismus und die Laute *ʿAyin* und *Hā* werden daher zu Unrecht als 'ursprünglich' deklariert, während ihnen tatsächlich nur ein sekundärer Charakter zukommt."

issue he used to be blamed for in the post-Greenbergian era ...),¹²⁵ which he considered as valid until the end of his long life and research.¹²⁶ The “Hamitological” ideas left their imprint in his works also, luckily void of extremist racial nuances. Thus, as W.A. Ward (1985: 242 and 244, §V) has also observed and described, Vycichl (1954: 219ff.) recognized that “Hamitic languages, unlike the Semitic, do not show a homogeneous unity”, where he was echoing the old theory of a migration of “waves of Hamitic tribes” invading North Africa and thence into a large part of the African continent through the Eastern Egyptian Delta from Western Asia in the neolithic “at some time prior to the beginning of the Egyptian First Dynasty” and so he assumed that “this Hamito-Semitic stratum must have developed in Western Asia”. For Ward (1985: 244), “the implication is obvious: before this migration there was no Semitic influence in North Africa and it was this migration of tribes speaking Hamitic dialects (‘archaic Semitic’, according to Vycichl) which brought into the area languages which had a strong affinity to Semitic.” The same way Vycichl (1959: 27) echoed, even if with some right reservations, Rössler, who considered Berber as “purely Semitic”,¹²⁷ which Ward (1985: 244) regarded as a sign of what “he therefore ascribes to Hamitic as archaic Semitic character”. Vycichl’s views could hardly be altered by his and others’ fruitful etymological researches in the further decades to come as we can see in his theoretical study on “la cronologia del camitosemitico”, where Vycichl (1987b) briefly and superficially addressed a number of and far-fetching issues around the SH prehistory¹²⁸ reflecting his and others’ original ideas

¹²⁵ In his review on the proceedings of the 1978 London SH Congress (ed. by J. Bynon), A.S. Kaye (1985: 890) did not miss to note how disturbing Vycichl’s old-fashioned terminology is: “The final paper, by W. Vycichl, is inappropriately entitled ‘Hamitic’ and ‘Semitic languages’: all experts agree there is no such thing as Hamitic. V(ycichl) reiterates Diakonoff’s point that the field desperately needs more work in comparative lexicography.” The same case was repeated with Vycichl’s (1987a) paper reviewed among the proceedings of the 1983 Marburg AA congress by A.S. Kaye and P.T. Daniels (1992: 436): see appendix. “W. Vycichl is the only major AA specialist, other than G. Garbini, [footnote omitted] who believes that there exists a special Ham(itic). sub-branch as distinct from the Sem. one. He thinks that PAA split off into PSem. (in Asia) and PHam. (Africa) ... He is in favor, however, of an Asian homeland for PAA ...” His paper “bases the separate identity of Ham. as a unit on shaky grounds as root biconsonantility. In doing so he must ignore the fact that there is much evidence in favor of biconsonantal roots in Sem. (hollow, third radical weak with determinatives), and that determinatives ... are merely a Sem. innovation.”

¹²⁶ Vycichl (1935: 89): “Aus dem Voranstehenden geht hervor, dass die Bezeichnung ‘hamitisch’ im sprachwissenschaftlichen Sinne durcahus gerechtfertigt ist, da sie eine Reihe von Sprachen umfasst, die nach der semitischen Seite historisch und lautlich eindeutig als heterogen definiert ist. Einzig und allein die Gleichung ‘Gemeinsemitisch ist gleich Ursemitisch’ war es, die zur Überschätzung des Semitischen in sprachhistorischer Hinsicht geführt hat. Tatsächlich aber haben die Hamiten, die Träger der hamitischen Sprachschicht, eine Fülle archaischer Erscheinungen nach Afrika hinübergerettet, von denen im Semitischen kaum noch eine Spur zu finden ist.”

¹²⁷ Although, as Vycichl (1959: 27) stressed, Rössler’s “assertion that the Berber languages are Semitic is somewhat bold – I should prefer calling them rather an archaic type of Semitic language – it is nevertheless true that there is no real Hamitic element in North Africa unless we confer on it the meaning of a Semitic language with archaic features”.

¹²⁸ Such as the fragmented ideas on “La patria delle lingue camitosemitiche” (Vycichl 1987b: 212), “L’uomo di Meshta el-Arbi” (Vycichl 1987b: 213), “I protomediterranei”, “Il cranio di Ain Mlila”, “Il cap-siano”, “Il natufiano” (all in Vycichl 1987b: 214). In the latter small section, he ventured again, some half a century after his first attempt, drawing some outlines on Proto-Semito-Hamitic in the same fashion of the old “Hamitological” hypothesis on “out of the Asia” influenced by IE (as seen above).

from half a century before as hardly changed ...¹²⁹ Vycichl's posthumously published Berber volume (2005) comprised texts from two unpublished manuscripts (deposited in the Oswin Köhler-Archiv of the J.W. Goethe university's African linguistics institute). The first one, a gigantic (mounting to some two and a half thousand pages), albeit incomplete and unfinished, universal introduction into Berber linguistics in general was published with great restrictions. Only those parts were selected for the volume that offered original comparative-historical analyses by the sometime author. Thus, among others, we have here a comprehensive description of Berber historical phonology (pp. 43-81) with some insights into its AA background. The second manuscript outlines a comprehensive grammar of Siwan Berber including some items of Siwi etymology (pp. 192-195).

1.4.11. G. Marcy (1934-7: 74-76), in his talk for the GLECS session of 23 Dec. 1936, critically analysed the supposed interrelationship of the terms for "iron" Semitic (Akk. *parzillu*, Hbr. *barzel*) and Berber **a-zali* (first identified by A. Cuny) isolating a common root * \sqrt{zl} .

1.4.12. A. Basset, the doyen of Berber studies, delivered a lecture at the GLECS session of 19 Dec. 1939 (vol. 3, 1937-40, 91-92) where, having thoroughly surveyed the common Berber term (t)ahyam(t) / (t)ahham(t) "tente, maison", he ended up in an attempt to find SH cognates in Semito-Egyptian. At the GLECS session of 27 Nov. 1946, he outlined a comprehensive set of the common Berber phonology with no outlook on SH.

¹²⁹ Vycichl (1987b: 214): "L'immigrazione dell'uomo protomediterraneo in Africa può dunque collocarsi dal 7500 a.C. in poi. Si dovrà probabilmente tenere conto di varie ondate successive che non corrispondono necessariamente ai quattro gruppi linguistici precitati. Inoltre vediamo abbastanza chiaro per quanto riguarda il semitico, l'egiziano ed il berbero, mentre la situazione è meno chiara per il cuscitico ed il ciadico per cui non disponiamo di date preistoriche sicure. Nel caso del cuscitico si può trattare anche di varie invasioni attraverso il Mar Rosso, come più tardi nel caso delle lingue semitiche come il ghe'ez ..." In Vycichl's (1987b: 215) view expressed in the chapter "Camitico e presemitico", "L'immigrazione dell'uomo protomediterraneo in Africa ... significa ... l'apparizione di un nuovo elemento etnico ... coll'avulsione dei denti, ... e di nuovi elementi linguistici che ritroviamo ancora oggi ... nei diversi gruppi. Chiamiamo questi elementi vamtici o protosemitici perché non appartengono al semitico comune, ma ad un stadio anteriore ... Mancano ...per finire il vocabolario comune del semitico." The following section "I componenti dell'etnia berbera" (Vycichl 1987b: 215) surveyed "Le principali componenti dell'etnia berbera", i.e., "l'uomo di Meshta el-Arbi; ... i Proto-mediterranei, con due varietà ...; ... tipo di Gerba, piccoli, brachicefali; ... i Berberi biondi a occhi azzurri già rappresentati nella tomba del re Sethos I nella Valle dei Re ...; ... elementi negroidi nelle oasi di Sahara, ma meno neri dei Wolof, ed elementi khoisanidi conservati nel tipo di certi Tuareg." Thence he (Vycichl 1987b: 216) deduced the linguistic traits of Berber: "Tutte queste componenti hanno contribuito alla formazione del vocabolario del berbero come lingua del tipo mbugu, [footnote omitted] ma non (o pochissimo) alla formazione del tipo grammaticale del berbero che è puramente protomediterraneo." By the term "Il lamechitico" Vycichl (1987b: 216) meant "Uno stadio più arcaico del protosemitico, ... lingua pra-prasemitica (sic) caratterizzata dall'anteposizione del genitivo come nelle lingue indoeuropee", whence he explained a number of Semitic nominal suffixes. Summing up "Il biliterismo", he dated "la generalizzazione del trilaterismo del semitico" between 7500-3000 BC where "la terza radicale del verbo semitico corrisponde: – a un prefisso verbale italiano ...; – ad un avverbio od una preposizione inglese ... Finora manca uno studio sui valori delle terze radicali in semitico." (Vycichl 1987b: 216-217). This demand was soon fulfilled, at least, in a way, by Ch. Ehret (1989).

Abbreviations

AA: Afro-Asiatic, Akk.: Akkadian, Aram.: Aramaic, Ar.: Arabic, Eg.: Egyptian, GLECS: Groupe Linguistique d'Études Chamito-Sémitiques, Hbr.: Hebrew, IE: Indo-European, NAA: North Afro-Asiatic, SA: South Afro-Asiatic, Sem.: Semitic, SH: Semito-Hamitic, Syr.: Syriac.

References

- d'Abbadie, A. 1845. Lettres [...] à M. Jules Mohl: I. Sur les langues éthiopiennes. II. Sur la langue saho. *Journal Asiatique* 4, série, tome II (43). 102-118. [Quoted after Beke 1845 in Fleming 1976 and Sasse 1981 (who report the latter to have been written on the 12 April 1845 to the Athenaeum, London.)]
- Adelung, J.C. 1806-1816. *Mithridates oder allgemeine Sprachkunde mit dem Vater Unser als Sprachprobe in beynahe fünfhundert Sprachen und Mundarten*. Vol. I-III. Fortges(etzt). u(nd). bearb(eitet). v(on). Johann Severin Vater. Berlin: in der Vossischen Buchhandlung. [Nachdruck 1970: Hildesheim: Olms. The volume II quoted in this paper is from 1912: 3. Theil, 1. Abth. Berlin: Voss.]
- Bargery, G.P. 1934. *A Hausa-English dictionary and English-Hausa vocabulary compiled for the Government of Nigeria*. London: Oxford University Press, Humphrey Milford.
- Barton, G.A. 1934. *Semitic and Hamitic origins: Social and religious*. Philadelphia: University of Pennsylvania Press.
- Basset, A. 1937-1940 (session of 19 Dec. 1939). Au sujet de berbère (t)ahyam(t) / (t)ahham(t) «tente, maison». *Comptes rendus du GLECS* 3. 91-92.
- Basset, A. 1945-1948 (session of 27 Nov. 1946). Le système phonologique du berbère. *Comptes rendus du GLECS* 3. 33-36.
- Bechhaus-Gerst, M. 1998. Old Egyptian and Afro-Asiatic: The state of the art. *Afrikanistische Arbeitspapiere* 56. 111-129.
- Beke, C.T. 1845. On the languages and dialects of Abyssinia and the countries to the south. *Proceedings of the Philological Society* 2. 89-107.
- Bender, M.L. 1995. Linguistics 450: Language families; Spring 1995: Afrasian, Tue. 17:30-20:00. Materials for a course at the Southern Illinois University (SIU), Illinois. 8 p.
- Blake, F.R. 1920. Congeneric assimilation as a cause of the development of new roots in Semitic. In *Studies in honor of Maurice Bloomfield by a group of his pupils*, edited by a group of his pupils, 36-48. New Haven and Oxford: Yale University Press.
- Blažek, V. 1999. *Numerals: Comparative-etymological analyses and their implications*. Brno: Masarykova Univerzita v Brně.
- Brockelmann, C. 1932. Gibt es einen hamitischen Sprachstamm? *Anthropos* 27. 797-818.
- Brockelmann, C. 1950. Bespr. von Marcel Cohen, Essai comparatif sur le vocabulaire et la phonétique du chamito-sémitique. *Bibliotheca Orientalis* 7. 58-61.
- Burrini, G. 1978 and 1979. Profilo storico degli studi camito-semitici. *Annali dell'Istituto Universitario di Napoli* 38. 113-153 and 39. 351-384.
- Cantineau, J. 1948. Review of Cohen, M.: Essai comparatif sur le vocabulaire et la phonétique du chamito-sémitique. *Bulletin de la Société de Linguistique de Paris* 44/2. 173-180.
- Cantineau, J. 1952. Le consonantisme du sémitique. *Semitica* 4. 79-94.
- Cerulli, Enrico. 1931-1934a (session of 24 April 1934). Le bilitérisme en couchitique. *Comptes rendus du GLECS* 1. 44-45.
- Cerulli, E. 1931-1934b (session of 20 June 1934). Traitement des labiovélares en couchitique. *Comptes rendus du GLECS* 1. 49-50.
- Cerulli, E. 1934-1937a (session of 22 May 1935). La stabilité de la voyelle radicale en couchitique. *Comptes rendus du GLECS* 2. 25-28.
- Cerulli, Enrico. 1934-1937b (session of 28 April 1937). Le trilitérisme en couchitique. *Comptes rendus du GLECS* 2. 85-87.
- Cerulli, E. 1937-1940 (session of 22 June 1938). La racine monosyllabique (consonne + voyelle seule) en couchitique. *Comptes rendus du GLECS* 3. 33-36.

- Cerulli, E. 1948. (Review of:) Marcel Cohen. – Essai compartait sur le vocabulaire et la phonétique du Chamito-sémitique. Parigi, 1947, in-8o, 250 p. *Oriente Moderno* 28. 53.
- Cerulli, E. 1951. (Review of:) Marcel Cohen, Essai compartait sur le vocabulaire et la phonétique du Chamito-sémitique (Bibliothèque de l'École des Hautes Études. Sciences historiques et philologiques, 291). Paris 1947. H. Champion. In-8o, xi-248 pp. *Orientalia* 20. 505-505.
- Clère, J.-J. 1931-1934 (session of 25 April 1934). (Observation on the paper by E. Cerulli). *Comptes rendus du GLECS* 1. 45.
- Cohen, D. 1971-1972. Sur quelques mots berbères dans un écrit du IX^e-X^e siècle. *Comptes rendus du GLECS* 16. 121-127.
- Cohen, D. 1972. Problèmes de linguistique chamito-sémitique. *Revue des Études Islamiques* 40. 43-68.
- Cohen, D. 1991. Berbère et couchitique: Notes comparatives sur des noms de parties du corps. In Kaye, A.S. (ed.), *Semitic studies in honor of Wolf Leslau*, vol. II, 225-233. Wiesbaden: Otto Harrassowitz.
- Cohen, M. 1924. Langues chamito-sémitiques. In Meillet, A. & Cohen, M. (eds.), *Les langues du monde*, 81-151. Paris: Librairie Ancienne Honore Champion.
- Cohen, M. 1928. Genou, famille, force, dans le domaine chamito-sémitique. In *Mémorial Henri Basset: Nouvelles études nord-africaines et orientales*. Tome premier, edited by L'Institut des Hautes-Études Marocaines, Comité André Basset, 203-210. Paris: Librairie Orientaliste Paul Geuthner.
- Cohen, M. 1931-1934a (session of 3 May 1933). Dénominations du testicule et de l'œuf dans diverses langues chamito-sémitiques et autres. *Comptes rendus du GLECS* 1. 25-26.
- Cohen, M. 1931-1934b (session of 20 Dec. 1933). gy?, ge, etc. «vallée, pays». *Comptes rendus du GLECS* 1. 34-35.
- Cohen, M. 1934. Divisions internes du chamito-sémitique. *Hespéris* 19. 186-187.
- Cohen, M. 1934-1935. Consonantisme chamito-sémitique. *Annuaire de l'École pratique des Hautes Études*, IV^e section: (1934-5). 68-69.
- Cohen, M. 1934-1937a (session of 28 Nov. 1934). La question de la parenté du haoussa (Soudan Central). *Comptes rendus du GLECS* 2. 1-3.
- Cohen, M. 1934-1937b (session of 22 Dec. 1937). Entretien sur la question des labio-vélaires en chamito-sémitique. *Comptes rendus du GLECS* 2. 5-8.
- Cohen, M. 1935-1942. Études sur le vocabulaire chamito-sémitique. *Annuaire de l'École pratique des Hautes Études*, IV^e section: (1935-6). 81-82; (1936-7). 75; (1937-8). 110; (1939-40). 91; (1940-1 and 1941-2). 136.
- Cohen, M. 1939a. *Nouvelles études d'éthiopien méridional* (Bibliothèque de l'École des Hautes Études, Sciences historiques et philologiques 275). Paris: Éditions Honoré Champion.
- Cohen, M. 1939b. Comparaisons étymologiques chamito-sémitiques. In Bodelsen, C.A. & Jolivet, A. & Lindroth, H. & Zwirner, E. (eds.), [Résumé des communications préparé pour le] *Ve Congrès international de linguistes, Bruxelles, 28 août – 2 septembre 1939: rapports, résumés, documents, réponses*, 14-15. Bruges: Imprimerie Sainte Catharine.
- Cohen, M. 1947. *Essai comparatif sur le vocabulaire et la phonétique du chamito-sémitique*. Paris: Librairie Ancienne Honore Champion.
- Cohen, M. 1953. Sémitique, égyptien, libyco-berbère, couchitique et méthode comparative. *Bibliotheca Orientalis* 10/3-4. 88-90.
- Cohen, M. & Leslau, W. 1937-1940 (session of 27 Jan. 1937). Mots amhariques présentant le traitement k > č. *Comptes rendus du GLECS* 3. 11-12.
- Cotteville-Giraudet, R. 1937-1940 (session of 22 June 1938). A propos du nom de la harpe en vieil-égyptien. *Comptes rendus du GLECS* 3. 32-33.
- Deny, J. & Cohen, M. 1931-1934 (session 25 Jan. 1933). (Observation on the paper by E. Cerulli). *Comptes rendus du GLECS* 1: 45.
- Destaing, E. 1931-1934 (session 25 Jan. 1933). (Observation on the paper by E. Cerulli). *Comptes rendus du GLECS* 1. 45.
- Destaing, E. 1934-1937 (session of 28 Nov. 1934). Les particules d et n en berbère. *Comptes rendus du GLECS* 2. 3-4.
- Diakonoff, I. 1965. *Semitic-Hamitic languages: An essay in classification*. Moscow: Nauka Publishing House, Central Department of Oriental Literature.
- Diakonoff, I. 1988. *Afrasian languages*. Moscow: Nauka.
- D'jakonov, I. Mihajlovič. 1965. *Semitohamitskie jazyki: Opyt klassifikacii*. Moskva: Nauka.

- Dhorme, É. 1934-1937 (session of 22 May 1935). (Observation on the paper by E. Cerulli). *Comptes rendus du GLECS* 2. 27
- Drexel, A. 1924. Der semitische Trikonsonantismus und die afrikanische Sprachforschung. *WZKM* 31. 219-236, 249-277.
- Drexel, A. 1925. Der semitische Trikonsonantismus und die afrikanische Sprachwissenschaft. *WZKM* 32. 1-29.
- Drexel, A. 1928. Kann das Ful als hamitische Sprache gelten? In Koppers, W. (ed.), *Festschrift / Publication d'hommage offerte au P.W. Schmidt. 76 sprachwissenschaftliche, ethnologische, religionswissenschaftliche, prähistorische und andere Studien. / Recueil de 76 études de linguistique, d'ethnologie*, 45-60. Wien: Verlag von der Mechitharisten-Congregations-Buchdruckerei.
- EDE I = Takács, G. 1999. *Etymological dictionary of Egyptian*. Volume One: *A phonological introduction*. Leiden: E.J. Brill.
- EDE II = Takács, G. 2001. *Etymological dictionary of Egyptian*. Volume Two: *b-, p-, f-*. Leiden: E.J. Brill.
- EDE III = Takács, G. 2008. *Etymological dictionary of Egyptian*. Volume Three: *m-*. Leiden: E.J. Brill.
- Ehret, C. 1979. Omotic and the subgrouping of the Afroasiatic language family. In Hess, R.L. (ed.), *Proceedings of the Fifth International Conference on Ethiopian Studies. Session B. April 13-16, 1978, Chicago, Illinois, USA*, 51-62. Chicago: Office of Publications Services, University of Illinois at Chicago Circle.
- Ehret, C. 2000. 11. Language and history. In Heine, B. & Nurse, D. (eds.), *African languages: An introduction*, 272-297. Cambridge: Cambridge University Press.
- Gelb, I.J. 1951. (Reviews of:) *Recherches sur le vocalisme, le consonantisme et la formation des racines en "nostratique", ancêtre de l'indo-européen et du chamito-sémitique*. By (sic) A. Cuny. Paris: Librairie d'Amérique et d'Orient, Adrien-Maisonneuve, 1943. Pp. vii + 164. Invitation à l'étude comparative des langues indo-européennes et des langues chamito-sémitiques. By (sic) A. Cuny. Bordeaux: Éditions Bière, 1946. Pp. 245. Essai comparatif sur le vocabulaire et la phonétique du chamito-sémitique. By (sic) Marcel Cohen. Bibliothèque de l'École des Hautes Études, publiée sous les auspices du Ministère de l'Éducation Nationale. Sciences Historiques et Philologiques. Deux cent quatre-vingt-onzième fascicule. Paris: Librairie Ancienne Honoré Champion, Éditeur, 1947. Pp. xi + 248. *Journal of Near Eastern Studies* 10/1. 60-61.
- GLECS = *Comptes-Rendus du Groupe Linguistique d'Études Chamito-Sémitiques* (Paris).
- Gouffé, C. 1969-1970. Compléments et précisions concernant le haoussa dans le cadre de l'Essai comparatif de M. Marcel Cohen. *Comptes rendus du Groupe Linguistique d'Études Chamito-Sémitiques* 14. 27-43.
- Greenberg, J.H. 1955. *Studies in African linguistic classification*. Branford, Connecticut: Compass Publishing Company.
- Greenberg, J.H. 1958. The labial consonants of Proto-Afro-Asiatic. *Word* 14. 295-302.
- Greenberg, J.H. 1962. On the African affiliation of Hebrew and the Semitic languages. *Jewish Social Studies* 24. 79-85.
- Hartmann, R. 1879. *Die Völker Afrikas*. Leipzig: Verlag von F.A. Brockhaus.
- Hintze, Fritz. 1951. Zur hamitosemitischen Wortvergleihung. *Zeitschrift für Phonetik und Allgemeine Sprachwissenschaft* 5. 65-87.
- Hodge, C.T. 1966. Hausa-Egyptian establishment. *Anthropological Linguistics* 8/1. 40-57.
- Hodge, C.T. 1970. Afroasiatic: An overview. *Current Trends in Linguistics* 6. 237-254.
- Hodge, C.T. 1971. Afroasiatic: An overview. In Hodge, C.T. (ed.), *Afroasiatic: A survey*, 9-26. The Hague: Mouton.
- Hodge, C.T. 1976. Lisramic (Afroasiatic): An overview. In Bender, M.L. (ed.), *The non-Semitic languages of Ethiopia*, 43-65. East Lansing, Michigan: African Studies Center of Michigan State University.
- Hodge, C.T. 1986. Indo-European consonant ablaut. *Diachronica* 3/2. 143-162.
- Homburger, L. 1929. Les langues africaines modernes et l'égyptien ancien. *Mémoires de la Société de Linguistique de Paris* 23/3. 149-174.
- Illič-Svityč, V.M. 1966. Iz istorii čadskogo konsonantizma: Labial'nye smyčnyje. In Uspenskij, B.A. (ed.), 9-34. *Jazyki Afriki: Voprosy struktury, istorii i tipologii*. Moskva: Nauka.
- Jungrauthmayr, H. & W.J.G. Möhlig (eds.) (unter redaktioneller Mitarbeit von Stephan Hollah, Rudolf Leger, Ulrich Kleinewillinghöfer, Gudrun Mische, Roland Werner). 1983. *Lexikon der Afrikanistik – Afrikanische Sprachen und ihre Erforschung*. Berlin: Dietrich Reimer Verlag.
- Jušmanov, N. V. 1934. Struktura semitskogo kornja i ejo stadial'nyj analiz. In (unknown editor), *Jazyk i myšlenie*, kniga II, pagination unknown. Leningrad: Izdatel'stvo Akademii Nauk SSSR, Institut Jazyka i Myšlenija.

- Jušmanov, N. V. 1998. *Izbrannye trudy: Raboty po obščej fonetike, semitologii i arabskoj klassičeskoj morfologii*. Edited by Belova, A. G. Moskva: Izdatel'skaja firma "Vostočnaja literatura" RAN.
- Kaye, A.S. 1985. Review of A.R. Bomhard: *Toward Proto-Nostratic: A new approach to the comparison of Proto-Indo-European and Proto-Afroasiatic*; J. Bynon (ed.): *Current progress in Afro-Asiatic linguistics: Papers of the Third International Hamito-Semitic Congress*, both published in Amsterdam & Philadelphia, 1984. John Benjamins. *Language* 61. 887-891.
- Kaye, A.S. 1989. Review of V. Shevoroshkin and T.L. Markey, Eds., *Typology, Relationship and Time. Journal of Afroasiatic Languages* 2. 222-226.
- Kaye, A.S. & Daniels, P.T. 1992. Comparative Afroasiatic and general genetic linguistics. *Word* 43/3. 429-458.
- Klingenheben, A. 1927/8. Die Silbenauslautgesetze des Hausa. *Zeitschrift für Eingeborenen-Sprachen* 18. 272-297.
- Klingenheben, A. 1929. Die Tempora Westafrikas und die semitischen Tempora. *Zeitschrift für Eingeborenen-Sprachen* 19. 241-268.
- Knappert, J. 1975-1976. Origin and development of the concept of Hamitic: The first sixty years: 1851-1911. *Orientalia Lovaniensia Periodica* 6-7 (= Miscellanea in honorem Joseph Vergote). 303-320.
- Köhler, O. 1975. Geschichte und Probleme der Gliederung der Sprachen Afrikas. In Baumann, H. (ed.), *Die Völker Afrikas und ihre traditionellen Kulturen* (Studien zur Kulturkunde 34), 135-373. Wiesbaden: Franz Steiner Verlag GmbH.
- Krapf, J.L. 1858. *Reisen in Ostafrika, ausgeführt in den Jahren 1837-55*. Kornthal: Selbstverlag. Nachdruck 1964. Quoted after Satzinger 1999: 367.
- Labouret, H. 1934-1937 (session 28 Nov. 1934). (Observation on the paper by M. Cohen). *Comptes rendus du GLECS* 2. 3.
- Lecerf, J. 1957-1960 (session of 24 June 1959). Les emprunts puniques en berbères. *Comptes rendus du GLECS* 8. 71-72.
- Lepsius, R. 1836. Über den Ursprung und die Verwandtschaft der Zahlwörter in der indogermanischen, semitischen und der koptischen Sprache. In Lepsius, R. (ed.), *Zwei Sprachvergleichende Abhandlungen*, 81-150. Berlin: Dümmler.
- Lepsius, R. 1844. *Auszug aus einem Schreiben des Hrn. Lepsius an Hrn. Ehrenberg d. d. Philae 10. Sept. 1844*. [Berlin], s.n. 34 pp.
- Lepsius, R. 1880. *Nubische Grammatik mit einer Einleitung über die Völker und Sprachen Afrika's*. Berlin: Wilhelm Hertz.
- Leslau, Wolf. 1934-1937 (session of 26 Feb. 1936). Sur le préfixe n- en soqotri. *Comptes rendus du GLECS* 2. 45-46.
- Leslau, W. 1949. Review of Cohen, M.: *Essai comparatif etc.* *Language* 25. 312-316.
- Lotner, C. 1860-1861. On sisterfamilies (sic) of languages, specially those connected with the Semitic family. *Transactions of the Philological Society* 20-27. 112-132.
- Lukas, J. 1933. Beiträge zur Kenntnis der Sprachen von Wadai (Mararet, Maba). *Journal de la Société des Africanistes* tome III, fasc. I. 25-55.
- Lukas, J. 1934. Die Gliederung der Sprachenwelt des Tschadsee-Gebietes in Zentralafrika. *Forschungen und Fortschritte* 10. 356-357.
- Lukas, J. 1936a. *Die Logone-Sprache im Zentralen Sudan* (Abhandlungen für die Kunde des Morgenlandes 21/6). Leipzig: Deutsche Morgenländische Gesellschaft in Kommission bei F.A. Brockhaus.
- Lukas, J. 1936b. Über den Einfluß der hellhäutigen Hamiten auf die Sprachen des zentralen Sudan. *Forschungen und Fortschritte* 12. 180-181.
- Lukas, J. 1936c. The linguistic situation in the Lake Chad area in Central Africa. *Africa* 9/3. 332-349.
- Lukas, J. 1936d. Hamitisches Sprachgut im Sudan. *Zeitschrift der Deutsche Morgenländische Gesellschaft* 90/3-4. 579-588.
- Lukas, J. 1937. *Zentralsudanische Studien* (Abhandlungen aus dem Gebiet der Auslandskunde von der Han-sischen Universität, Reihe B, Band 45/24). Hamburg: Friedrichsen, de Gruyter & Co.
- Lukas, J. 1937-1938. Der hamitische Gehalt der tschadhamitischen Sprachen. *Zeitschrift für Eingeborenen-Sprachen* 28. 286-299.
- Lukas, J. 1939a. *Die Sprache des Buduma in Zentralen Sudan* (Abhandlungen für die Kunde des Morgenlandes 24/2). Leipzig: F.A. Brockhaus.
- Lukas, J. 1939b. Die Verbreitung der Hamiten in Afrika. *Scientia* Feb. 108-118.

- Lukas, J.¹³⁰ 1952. Section IX: The Chadic languages. Section X: The Chado-Hamitic languages. In Westermann, D. & Bryan, M. (eds.), *The languages of West Africa*, Part II, 153-161, 162-177, resp. London: Oxford University Press for International African Institute.
- Marcy, G. 1934-1937 (session of 23 Dec. 1936). Au sujet du nom berbère du «fer». *Comptes rendus du GLECS* 2. 74-76.
- Martinet, A. 1953. Remarques sur le consonantisme sémitique. *Bulletin de la Société de Linguistique de Paris* 49. 67-78.
- Meinhof, C. 1912. *Die Sprachen den Hamiten*. Hamburg: Friedrichsen & Co.
- Meinhof, C. 1916-1917. Sprachstudien im ägyptischen Sudan (vier Teile, u.a. eine Rezension zu Fokken über die Maasai). *Zeitschrift für Kolonialsprachen* 7. 251-252.
- Meinhof, C. 1920-1921a. Bespr. von Naville, E.: L'évolution de la langue égyptienne et les langues sémitiques. *Zeitschrift für Eigeborenen-Sprachen* 11. 73-75.
- Meinhof, C. 1920-1921b. Was sind emphatische Laute, und wie sind sie entstanden? *Zeitschrift für Eigeborenen-Sprachen* 11. 81-106.
- Meinhof, C. 1921-1922a. Was können uns die Hamitensprachen für den Bau des semitischen Verbuns lehren? *Zeitschrift für Eigeborenen-Sprachen* 12. 241-275.
- Meinhof, C. 1921-1922b. Aus der Literatur. *Zeitschrift für Eigeborenen-Sprachen* 12. 304-306.
- Meinhof, C. 1930. Das Verhältnis der Buschmannsprache zum Hottentotischen. *Wiener Zeitschrift für die Kunde des Morgenlandes* 37. 219-229.
- Möller, G. 1921. Aegyptisch-libysches. *Orientalistische Literaturzeitung* 24/9-10. 193-197.
- Möller, G. 1924. Die Ägypter und ihre libyschen Nachbarn. *Zeitschrift der Deutschen Morgenländischen Gesellschaft* 78. 36-60.
- Mukarovskij, H.G. 1981. Hamito-Semisch, Afro-Asiatisch, Erythräisch: Zum Wandel von Begriffen und Verständnis. *Zeitschrift für Phonetik, Sprachwissenschaft und Kommunikationsforschung* 34. 511-526.
- Mukarovskij, H.G. (ed.). 1987. *Leo Reinisch: Werk und Erbe*. Wien: Verlag der Österreichischen Akademie der Wissenschaften.
- Müller, F. 1867. *Reise der österreichischen Fregatte Novara um die Erde in den Jahren 1857, 1858, 1859 unter den Befehlen des Commodore B. von Wüllerstorff-Urbair, Linguistischer Teil*. Wien: aus der Kaiserlich-Königlichen Hof- und Staatsdruckerei in Commission bei Karl Gerold's Sohn. (Pp. 51-70: "Hamitische Sprachen".)
- Müller, F. 1876-1888. *Grundriß der Sprachwissenschaft*, Bde. I-VI. Wien: Hölder.
- Naville, Henri Édouard. 1920. *L'évolution de la langue égyptienne et les langues sémitiques*. Paris: Librairie Geuthner.
- Newman, P. 1980. *The classification of Chadic within Afroasiatic*. Leiden: Universitaire Pers Leiden.
- Newman, P. 2004. *Klingenheben's law in Hausa* (Chadic Linguistics: Linguistique Tchadique: Tschadistik 2). Köln: Rüdiger Köppe.
- Newman, F.W. 1844. On the structure of the Berber languages. In Prichard, J.C. (ed.), *Researches into the physical history of mankind IV*, 3rd ed., 617-626. London: Sherwood, Gilbert, and Piper. (Appendix 2).
- Ol'derogge, D. A. 1949. Hamitskaja problema v afrikanistike. *Sovetskaja Étnografija* 3. 156-170.
- Petráček, K. 1984. La méthodologie du chamitosémitique comparée: État, problèmes, perspectives. In Bynon, J. (ed.), *Current progress in Afro-Asiatic linguistics*, 423-462. Amsterdam – Philadelphia: John Benjamins.
- Petráček, K. 1989. Úvod do hamitosemitské (afroasijské) jazykovědy I-II. Edited by (k vydání připravil) Zemánek, Petr. Praha: Státní pedagogické nakladatelství.
- Peust, C. 1997. Neue Impulse in der afroasiatischen Sprachwissenschaft: Zum Hamito-Semitic Etymological Dictionary von Vladimir Ėmmanuilovič Orël und Ol'ga Valer'evna Stolbova. *Lingua Aegyptia* 5. 251-276.

¹³⁰ In the Foreword to the *Languages of West Africa* (1952), Westermann thanks Lukas for "most generous assistance, not only in supplying material and advising on arrangement, but also in drafting several sections of the present text"; but in the sections themselves, Lukas is not listed and mentioned as author. Kind p.c. by Prof. em. P. Newman (Bloomington, Indiana University). Still, the chapters are quoted in the reference used in this paper with Lukas' name, presumably just because of these having been regarded as the intellectual product of Lukas.

- Pfeiffer, R.H. 1948. Essai comparatif sur le vocabulaire et la phonétique du chamito-sémitique, by Marcel Cohen. Bibliothèque (sic) de l'École des Hautes Études, vol. 291. Paris: Honoré Champion, 1947. Pp. xi+248. *Journal of Biblical Literature* 67/2. 186-187.
- Pilszczikowa, N. 1960. Le haoussa et le chamito-sémitique à la lumière de l'Essai comparatif de Marcel Cohen. *Rocznik Orientalistyczny* 24/1. 97-130.
- Quéménéur, J. 1948. Marcel Cohen, Essai comparatif sur le vocabulaire et la phonétique du chamito-sémitique. Paris: Honoré Champion, 1947, 245 pages. *Institut des Belles Lettres Arabes* 11. 219-220.
- Reinisch, L. 1873. *Der einheitliche Ursprung der Sprachen der Alten Welt nachgewiesen durch Vergleichung der afrikanischen, erythräischen und indogermanischen Sprachen mit Zugrundelegung des Teda*. Wien: Wilhelm Braumüller Universitäts-Verlagsbuchhandlung. Reprint: 1968. Wiesbaden: Dr. Martin Sändig oHG.
- Reinisch, L. 1890. *Das Zahlwort vier und neun in den chamitisch-semitischen Sprachen* (Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften, phil.-hist. Classe 121/12). Wien: Alfred Hölder Verlag.
- Reinisch, L. 1909. *Das persönliche Fürwort und die Verbalflexion in den chamito-semitischen Sprachen*. Wien: Alfred Hölder Verlag.
- Reinisch L. 1911. *Die Sprachliche Stellung Des Nuba*. Wien: Alfred Hölder Verlag.
- Renan, E. 1855. *Histoire générale et système comparé des langues sémitiques*. Paris: Imprimerie Impériale.
- Rodinson, M. 1950. Le chamito-sémitique à la lumière d'un nouvel ouvrage. *Journal Asiatique* 238. 151-160.
- Rössler, O. 1952. Der semitische Charakter der libyschen Sprache. *Zeitschrift für Assyriologie* 50. 121-150.
- Sanders, E.R. 1969. The Hamitic hypothesis; its origin and functions in time perspective. *Journal of African History* 10/4. 521-532.
- Sasse, H.-J. 1981a. Afroasiatisch. In Schadeberg, T. (ed.), *Die Sprachen Afrikas*. Band 2. *Afroasiatisch*, 129-148. Hamburg: Helmut Buske Verlag.
- Sasse, H.-J. 1981b. Neue Perspektiven im Afroasiatischen? In Jungrauthmayr, H. & Gudrun M. (eds.), *Berliner Afrikanistische Vorträge: XXI. Deutscher Orientalistentag, Berlin 24.-29. März 1980*, 145-165. (Marburger Studien zur Afrika- und Asienkunde, Serie A, Band 28). Berlin: Verlag von Dietrich Reimer.
- Satzinger, H. 1999. Afroasiatischer Sprachvergleich. In Grunert, S. & Hafemann, I. (eds.), *Textcorpus und Wörterbuch: Aspekte zur ägyptischen Lexikographie*, 367-386. Leiden: Brill.
- Schenkel, W. 1990. *Einführung in die altägyptische Sprachwissenschaft* (Orientalistische Einführungen in Gegenstand, Ergebnisse und Perspektiven der Einzelgebiete). Darmstadt: Wissenschaftliche Buchgesellschaft.
- Seligman, C.G. 1930. *Races of Africa*. London: Thornton Butterworth Ltd. 1st ed. revised in 1939, 2nd ed.: 1957, 3rd ed.: London, New York: Oxford University Press, 1966.
- Sethe, K. 1916. *Von Zahlen und Zahlworten bei den alten Ägyptern und was für andere Völker und Sprachen daraus zu lernen ist*. Strassburg: Karl J. Trübner.
- Takács, G. 1999a. *Development of Afro-Asiatic (Semitic-Hamitic) comparative-historical linguistics in Russia and the former Soviet Union*. München – Newcastle: Lincom Europa.
- Takács, G. 1999b. Contribution of V.M. Illič-Svityč to Chadic comparative-historical linguistics. *Archív Orientální* 67. 361-378.
- Takács, Gábor. 2002. Publications de Werner Vycichl. In Naït-Zerrad, Kamal (ed.), *Articles de linguistique berbère. Mémorial Werner Vycichl*, 19-41. Paris: L'Harmattan.
- Takács, G. 2003a. Igor Mikhailovich Diakonoff (1915-1999). In Bender, M.L. & Appleyard, D. & Takács, G. (eds.), *Selected comparative-historical Afrasian linguistic studies in memory of Igor M. Diakonoff*, v-vii. (Lincom Studies in Afroasiatic Linguistics 14). München & Newcastle: Lincom Europa.
- Takács, G. 2003b. Selected linguistic bibliography of I.M. Diakonoff. In Bender, M.L. & Appleyard, D. & Takács, G. (eds.), *Selected comparative-historical Afrasian Linguistic studies in memory of Igor M. Diakonoff*, ix-xii. (Lincom Studies in Afroasiatic Linguistics 14). München & Newcastle: Lincom Europa.
- Takács, G. 2004. Werner Vycichl (1909-1999). In Takács, G. (ed.), *Egyptian and Semitic-Hamitic (Afro-Asiatic) studies in memoriam Werner Vycichl*, ix-xi. Leiden: E. J. Brill.
- Takács, G. 2005. Aaron Ember and the establishment of Egypto-Semitic phonological and lexical comparison. Part I. *Acta Orientalia Vilnensia* 6/2. 78-101.
- Takács, G. 2006a. Seventy years after the first attempt at Egyptian Etymological Dictionary: Evaluation of F. von Calice's 'Grundlagen der ägypto-semitischen Wortvergleichung'. *Lingua Posnaniensis* 48. 139-163.
- Takács, G. 2006b. Aaron Ember and the establishment of Egypto-Semitic phonological and lexical comparison. Part II. *Acta Orientalia Vilnensia* 7/1-2. 145-187.
- Takács, G. 2006c. Werner Vycichl and his contribution to Afro-Asiatic (Semitic-Hamitic) comparative phonology and lexicon. In Morel, Mary-Annick & Danon-Boileau, Laurent & Lonnet, Antoine & Mettouchi,

- Amina (eds.), *Faits de Langues. Revue de linguistique n° 27. Les langues chamito-sémitiques (afro-asiatiques)*, vol. 2, 154-171. Paris: Ophrys.
- Takács, G. 2006d. Otto Rössler's new system of Egypto-Semitic consonant correspondences. Part One. *Rocznik Orientalistyczny* 59/2. 90-127.
- Takács, G. 2007. Otto Rössler's new system of Egypto-Semitic consonant correspondences. Part Two. *Rocznik Orientalistyczny* 60/1. 5-43.
- Takács, G. 2009a. Aharon B. Dolgopolsky: The scholar and man. In Shevoroshkin, Vitaly V. & Sverdrup, H.U. (eds.), *Bygone voices reconstructed: On the language origins and their relationships. In honor of Aron Dolgopolski*, 9-10. Copenhagen: Privatforlaget: Underskov Publishers ApS.
- Takács, G. 2009b. Three decades of Chadic comparative-historical linguistics in the USSR and Russia (1966-1996). In Shevoroshkin, V.V. & Sverdrup, H.U. (eds.), *Bygone voices reconstructed: On the language origins and their relationships. In honor of Aron Dolgopolski*, 211-220. Copenhagen: Privatforlaget: Underskov Publishers ApS.
- Takács, G. 2012. Aharon Dolgopolsky: The Semito-Hamitic scholar and man. *Mother Tongue* 17. 19-23.
- Trombetti, A. 1902. Delle relazioni delle lingue caucasiche con le lingue camitosemitiche e con altri gruppi linguistici: Lettera al professore H. Schuhardt. *Giornale della Società Asiatica Italiana* 15. 177-201.
- Trombetti, A. 1923. *Le origini della lingua basca* (Memorie dell'Accademia delle Scienze dell'Istituto di Bologna, classe di scienze morali, serie II, tomi 8-9, 1923-5). Bologna: Arnoldo Forni Editore.
- Tsereteli, G.W. 1970. Zur Frage der Beziehungen zwischen den semitischen und hamitischen Sprachen. *Mitteilungen des Instituts für Orientforschung* 16. 271-280.
- Tucker, Archibald N. 1975. What's in a name? In Bynon, James & Bynon, Theodora (eds.), *Hamito-Semitic*, 471-476. The Hague: Mouton de Gruyter.
- Vernus, P. 2000. Situation de l'égyptien dans les langues du monde. In Fauvelle-Aymar, F.-X. & Chrétien, J.-P. & Perrot, Claude-Hélène (eds.), *Afrocentrismes: L'histoire des Africains entre Égypte et Amérique*, 169-208. Paris: Éditions Karthala.
- Voigt, Rainer Maria. 1988. Zur Geschichte der vergleichenden Semito-Hamitistik – August Klingenberg und sein Beitrag zur semito-Hamitischen Sprachwissenschaft. In Brauner, Siegmund & Wolff, Ekkehard (eds.), *Progressive traditions in African and Oriental Studies*, 155-164. Berlin: Akademie-Verlag.
- Voigt, R.M. 1999. On Semito-Hamitic comparison. In Renfrew, Sir Colin & Nettle, D. (eds.), *Nostratic: Examining a linguistic macrofamily*, 315-325. Cambridge: The McDonald Institute for Archaeological Research.
- Voigt, R.M. 2001. Semito-Hamitische Philologie und vergleichende Grammatik: Geschichte der vergleichenden Semito-Hamitistik. In Auroux, S. & Koerner, E.F.K. & Niederehe, H.-J. & Versteegh, K. (eds.), *History of the language sciences. Geschichte der Sprachwissenschaften. Histoire des sciences du langage. An international handbook on the evolution of the study of language from the beginnings to the present. Ein internationales Handbuch zur Entwicklung der Sprachforschung von den Anfängen bis zur Gegenwart. Manuel international sur l'évolution de l'étude du langage des origines à nos jours*. Volume 2/2. Teilband/ Tome 2, 1318-1325. Berlin – New York: Walter de Gruyter.
- Voigt, R.M. 2002. The Hamitic connection: Semitic and Semito-Hamitic. *Israel Oriental Studies* 20. 265-290.
- Vycichl, W. 1934. Hausa und Ägyptisch: Ein Beitrag zur historischen Hamitistik. *Mitteilungen des Seminars für Orientalische Sprachen an der Friedrich-Wilhelms-Universität zu Berlin* 37. 36-116.
- Vycichl, W. 1935. Was sind Hamitensprachen? *Africa* 8. 76-89.
- Vycichl, W. 1952. Punischer Spracheinfluss im Berberischen. *Journal of Near Eastern Studies* 11. 198-204.
- Vycichl, W. 1954. Notes sur la préhistoire de la langue égyptienne. *Orientalia NS* 23. 217-222.
- Vycichl, W. 1959. Is Egyptian a Semitic language? *Kush* 7. 27-44.
- Vycichl, W. 1978. L'état actuel des études chamito-sémitiques. In Fronzaroli, P. (ed.), *Atti del Secondo Congresso Internazionale di Linguistica Camito-Semitaica, Firenze, 16-19 aprile 1974*, 63-76. Firenze: Istituto di Linguistica e di Lingue Orientali, Università di Firenze.
- Vycichl, W. 1987a. The origin of the Hamito-Semitic languages. In Jungraithmayr, Herrmann & Müller, W.W. (eds.), *Proceedings of the Fourth International Hamito-Semitic Congress, Marburg, 20-22 September 1983*, 109-121. Amsterdam, Philadelphia, John Benjamins.
- Vycichl, W. 1987b. La cronologia del camitosemitico. In Bernini, G. & Brugnatelli, V. (eds.), *Atti della 4a giornata di studi camito-semitici e indoeuropei. Bergamo, Istituto Universitario, 29 novembre 1985*, 211-218. Milano: Edizioni Unicopli.

- Vycichl, W. 2005. *Berberstudien & A sketch of Siwi Berber (Egypt)*. Hrsg. von/Ed. by Ibrizimow, D. & Kossmann, M. Köln: Rüdiger Köppe Verlag.
- Ward, W.A. 1985. Reflections on methodology in Egypto-Semitic lexicography. In Tubb, J.N. (ed.), *Palestine and the Bronze and Iron Ages: Papers in honour of Olga Tufnell*, 232-248. London: Institute of Archaeology.
- Westermann, D. 1934. Some notes on the Hausa people and their language. In Bargery, G.P., *A Hausa-English dictionary and English-Hausa vocabulary compiled for the Government of Nigeria*, ix-xix. London: Oxford University Press, Humphrey Milford.
- Westermann, D. & Bryan, M. (eds.). 1952. *The languages of West Africa*, Part II. London: Oxford University Press for International African Institute.
- Zaborski, A. 1983. Basic numerals in Cushitic. In Jungrathmayr, H. & Müller, W.W. (eds.), *Proceedings of the Fourth International Hamito-Semitic Congress, Marburg, 20-22 September 1983*, 317-347. Amsterdam – Philadelphia, John Benjamins.
- Zaborski, A. 1998. La linguistique chamito-sémitique cinquante années après l'Essai comparatif de Marcel Cohen. In El Medlaoui, M. & Gafaiti, S. & Saa, F. (eds.), *Actes du 1^{er} congrès Chamito-Sémitique de Fès, 112-13 mars 1997*, 23-35. Fès: Université Sidi Mohamed Ben Abdellah, Faculté des Lettres et des Sciences Humaines.
- Zyhlarz, E. 1931. Die ägyptisch-hamitische Dekade. *Zeitschrift für Ägyptische Sprache* 67. 133-139.
- Zyhlarz, E. 1932. Zur angeblichen Verwandtschaft des Baskischen mit afrikanischen Sprachen. *Prähistorische Zeitschrift* 23. 69-77.
- Zyhlarz, E. 1932-1933. Ursprung und Sprachcharakter des Altägyptischen. *Zeitschrift für Eingeborenen-Sprachen* 23. 25-45, 81-110, 161-194, 241-254.
- Zyhlarz, E. 1934. Konkordanz ägyptischer und libyscher Verbalstammtypen. *Zeitschrift für Ägyptische Sprache* 70. 107-122.
- Zyhlarz, E. 1934-1935. Die Sprachreste der unteräthiopischen Nachbarn Altägyptens. *Zeitschrift für Eingeborenen-Sprachen* 25. 161-188, 241-261.
- Zyhlarz, E. 1936. Das geschichtliche Fundament der hamitischen Sprachen. *Africa* 9. 433-451.

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Some Berber etymologies XIII

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The paper contains new etymological entries to Berber lexical roots and is part of a long-range series eventually resulting, when completed, in materials for an etymological dictionary of Berber, a desired addition to the fascicles of the comparative dictionary of Berber roots (DRB).

Keywords: Berber, lexical roots, reconstruction, comparative Afro-Asiatic linguistics, historical phonology.

Introduction

This series is to gradually reveal the still unknown immense Afro-Asiatic heritage in the Berber lexical root stock. The first part with some miscellaneous Berber etymologies arranged at random was published back in 1996.¹ More recently, I have continued writing several new parts of “Some Berber etymologies” that have since then grown into a series (abbreviated as SBE) arranged according to initial root consonants² in course of my research

¹ See my “Some Berber etymologies I” in *Lingua Posnaniensis* (Poznań) 38 (1996), 43-59.

² ● Part II: Berber *b-, in *Lingua Posnaniensis* 45 (2003), 93-119; ● part III: Berber *b̥- in Naït-Zerrad, K. & Ibrizimow, D. & Voßen, R. (éds.), *Nouvelles études berbères: Le verbe et autres articles: Actes du “2. Bayreuth-Frankfurter Kolloquium zur Berberologie”* (Berber Studies vol. 8), Köln, 2004, Rüdiger Köppe Verlag, pp. 191-204; ● part IV: Berber *f- in *Studia Etymologica Cracoviensia* 10 (2005), 173-201; ● part V: Berber *m- + in *Folia Orientalia* 44 (2008), 89-105; ● part VI: Berber *m-, in *Journal of Linguistic Relationship* (Moscow) 2 (2009), 91-113; ● part VII: Berber *n- followed by *r/l/w/y, in Mettouchi, A. (éd.), «*Parcours berbères*»: *Mélanges offerts à Paulette Galand-Pernet et Lionel Galand pour leur 90^e anniversaire*, Köln, 2011, Rüdiger Köppe Verlag, pp. 97-115; ● part VIII: Berber *n- + labials, in Serra, L. & di Tolla, A.M. & Ghaki, M. & Habouss, A. (éds.), *Pluralità e dinamismo culturale nelle società berbere attuali* (Studi Africanistici, Quaderni di Studi

for the volumes of the *Etymological Dictionary of Egyptian* (EDE, Leiden, since 1999, Brill)³ with a much more extensive lexicographical apparatus on the cognate Afro-Asiatic daughter languages.

The underlying regular consonantal correspondences between Berber vs. Afro-Asiatic followed in these studies basically agree with those established in the 1980s by the Russian (Moscow) team of I. M. Diakonoff and as summarized by A. Ju. Militarev (1991: 242-243), which my researches for an etymological root dictionary of Berber over the past few decades have only corroborated. In order to spare room, whenever it comes some wide-spread and well-attested lexical root that evidently appears as Common Berber, I only quote those roots through but a few illustrative examples or a reconstructed Proto-Berber root or stem form.

Several parts of my series “Some Berber etymologies” (VII-XII), immediately preceding this one, greatly exploited the results of my work ongoing some decade ago (the years after 2008) for the the fourth volume⁴ of EDE (analyzing the Eg. lexical stock with initial n-). The same is the case with the present part, which contains etymologies of Berber roots with initial *n- followed by laryngeals and sonants. Some items have already been dealt with to a certain degree in part VII, but in the meantime since then, new reflexes have emerged in my research and so it has become desirable to re-examine these lexical roots here. As for these additions to SBE VII, the re-examined entries are introduced here by “Ad SBE VII, #...” with the original numeration.

The numeration of the entries continues that of the preceding parts of this series. Whenever such a Berber root occurs that has already been processed in some of the preceding parts

Berberi e Libico-Berberi 1), Napoli, 2011, UNIOR (l'Università degli Studi di Napoli “L'Orientale”), pp. 79-90; ● part IX: Berber *n- with dental stops, in Allati, A. (éd.), *Auréoles berbères: Mélanges Offerts à Michael Peyron*, Köln, 2016, Rüdiger Köppe Verlag, pp. 295-305; ● part X: Berber *n- with sibilants, in *Lingua Posnaniensis* (Poznań) 55/1 (2013), 99-110; ● part XI: Berber *n- with dental stops (with some unfortunate redundances overlapping with some entries of part IX due to my involuntary fault), in *Folia Orientalia* (Kraków) 52 (2015), 307-317; ● part XII: Berber *n- followed by velars, in Tolla, A. M. di (ed.), *La lingua nella vita e la vita della lingua: Itinerari e percorsi degli studi berberi: Miscellanea per il Centenario di studi berberi a «L'Orientale» di Napoli. Scritti in onore di Francesco Beugnot* (Quaderni di Studi Berberi e Libico-berberi, Studi Africanistici 4). Volume IV. Napoli, 2015, UNIOR, Università degli Studi di Napoli “L'Orientale”, pp. 367-386. ● part XIV: new etymologies of Berber roots with initial *d-, to appear in *Études et Documents Berbères* (Paris) 45-46 (2021), 341-395, in a special volume with *les actes du Colloque 2020 de l'Histoire du berbère, session de décembre 2020*. ● part XV: new etymologies of Berber roots with initial *ḏ-, scheduled to appear in *Études et Documents Berbères* (Paris) 47 (2022).

³ Which was carried out partially during my research fellowship at Frankfurt (Institut für Afrikanische Sprachwissenschaften) in 1999-2000 and 2002, which was facilitated by the grant of the Alexander von Humboldt Foundation (Bonn). I express my thanks to the Humboldt Foundation as well as to my professor in Frankfurt, Herrmann Jungraithmayr, the prominent Chadicist, for his invaluable help and support. This part has been completed in the frames of my research project “Micro-reconstructions in the Southern Afro-Asiatic (Semitic-Hamitic) lexical root stock” supported by the grant of “Advanced Research in Residence” (ARR) of the University of Łódź and personally encouraged by Prof. Krzysztof Witczak (head of the Dept. of Classical Philology), which I gratefully acknowledge in this place.

⁴ As for all the puzzles around finishing EDE IV and the research for the subsequent parts, the publication of a “Second Interim Report on the Etymological Dictionary of Egyptian” has become desirable (forthcoming perhaps in RO), which is going to examine the circumstances affecting the prospects of my EDE series. Cf. my pre-EDE “First preliminary report on the Etymological Dictionary of Egyptian (in preparation)” in *Studia Etymologica Cracoviensia* (Kraków) 3 (1998), 163-164.

of my series, and it is re-examined here in the light of some further new parallels, the entry is headed by SBE + Roman letters (indicating the number of the preceding part) + Arabic number of the very entry where it first appeared.

Berber *√n-/h-

431. NBrb.: Mzg. nḥer (no indication of an Ar. loan) “1. égratigner, 2. écorcher, érafler, 3. user (par frottement), être usé” [Taïfi 1991: 482] || Sem.: Ar. *naḥara* I “1. toucher, atteindre et causer à qqn. une lésion à la clavicule” [BK II 1212-3].

432. NBrb.: Mzg. nhem “2. élaner (plaie, blessure)” [Taïfi 1991: 482] || Sem.: perhaps Ar. *nahama* I “4. jeter, lancer des petits cailloux” [BK II 1359] || ECh.: Danglera-Migama *nṽm- “to pierce” [Stolbova in CLD] = *nōm- < **nohm- (?) [GT]: WDanglera nōòmè “transpercer, laisser se fendre (poterie)” [Fédry 1971: 218], EDanglera noomē “etwas mit Gewalt durchbohren” [Ebobisse], Migama nòòmò “percer” [JA] (ECh.: CLD I 141, #543).

433. SBrb. *a-nhar “eyebrows, sourcil” [GT]: Hgr. *i-nər* “sourcil” [Basset 1929: 20 pace Foucauld] = *é-ner*, pl. *ă-nâr-en* “sourcil” [Foucauld 1951-2: 1399] = *e-nər*, pl. *ă-nar-ən* [Prasse] = *ē-nēr* [Ajherval’d 1986: 9: < *a-enēr], Ghat *a-nar*, *a-nar-en* “sourcil” [Nehilil 1909: 207, so adopted by Basset 1929: 20], Nslm. *i-nhər* ~ *a-nhar* [Prasse], Ayr *a-nar* & EWlmd. *a-nar*, pl. *a-nar-ăn* “sourcil” [Alojaly 1980: 149] = Wlmd. *i-nər* ~ *a-nar* ~ *a-nir* ~ *a-nirəh* [Prasse] (SBrb.: Prasse 1969: 84, #560) || EBrb.: Ghadames *a-nber*, pl. *a-nḥar-en* [secondary -ḥ- < *-h^w-?] “cils” [Lanfry 1973: 233, #1081] (further Brb. cognates: Basset 1929: 19-20) || ECu. *nyār- “1. eyebrow, 2. forehead” [GT]:⁵ Oromo *nyar-a* “eyebrow, eyelash” [Foot 1913: 46] = *ńār-a* [Sasse 1979: 36: -ā- < *-aḥ- reg.] “eyebrow”, cf. *ńāra gura* “to frown, wrinkle forehead” [Gragg 1982: 301] = *ñār-a* “eyebrow” [Hudson 1989: 60] = *nyār-a* “eyebrow” [Bitima 2000: 209], Arbore *ńār* (m) “forehead” [Hayward 1984: 388] = *ńār* [Ehret] | Dullay: Tsamay *nyār-a* “forehead” [Ehret] (ECu.: Ehret 1987: 110, #466; 1991: 264) || Ongota *ńāra* “forehead” [Fleming 1992: 191] || ECh.: Mokilko *nyínyàri* (pl.) “Augenbrauen” [Lukas 1977: 219] < CAA *√ny/ḥr, perhaps *-ny/ḥar- (???) “eyebrow” [GT], whose truly rare Anlaut cluster is represented by the astonishing Berbero-Cushito-Chadic match of *-nC₂-, be the C₂ a labialized *-h^w- (Berber) or a glide *-y- (as in Oromo and Mokilko).

The metathesis of the same CAA root seems to be represented by the much later innovation of the special, exclusively Egypto-Chadic stem *riN(h)- “eyebrow” [GT], apparently based on the original biradical root *√rm (?) void of the nominal class marker *ḥ⁶ resulting

⁵ The Oromo and Arbore terms, along with LECu.: Oromo *ńār-ō* “marrow” and HECu.: Sidamo *gār-a* “1. eyelashes, 2. forehead”, Burji *gār-i* “eyebrow”, were all (!) derived by Ch. Ehret (1987: 110, #466; 1991: 264) from his (L)ECu. *ṅār- (!) “forehead”, which he in 1987 equated with Agaw *ṅar- “head, brain” < PCu. *ṅar- “forehead”. This equation, esp. in such an omnicomparatistic fashion, is certainly out of the question because of the anomalous *Anlaut*, let alone the primary sense “eyebrow” in Oromo inherited from Afro-Asiatic.

⁶ Only the Egyptian form is containing the once productive affix *ḥ of the CAA anatomical terms (cf. Takács 1997).

in the cluster (?) *-nh-, cf. the isogloss of Eg. jnh̄ [< *√rn̄h̄ via palatalization of *ri- > *yi-]⁷ “Augenbraue” (OK, Wb I 99, 1) = “eyebrows” (FD 24) III WCh.: Angas-Sura *-rim (var. *-re2m?) → *kərəm (with prefix *ki- + *yit “eye”) “eyebrow” [Takács 2004: 310]: Angas nk̄him-yit (so, -kh-, no medial *-r-!) [GT: *kiyim < *kirim by erosion?] “eye-brow” [Gochal 1994: app.], Sura kər̄im yit [< *kirim] “Augenbrauen” [Jng. 1963: 70], Kofyar koeroem áyít [kər̄əm] “eyebrows” [Netting 1967: 19], Goemay kerem goe yit [irreg. -e- < *-i-, or reg. < *-e2-?] “eyebrow” [Sirlinger 1937: 99].

One may not, of course, *a priori* exclude the remote (PAA) connection of AA *-ny/ħar- “eyebrow” [GT] vs. AA *naħr- “front part” [GT] (for reflexes see entry #453. in this paper), although – to the best of my knowledge – only A. Basset (1929: 20) has proposed the connection of the E/NBerber term for “front” and Twareg “eyebrow”, cf. NBrb. *(t)a-nyar-(t) < **√nħr “front” [GT]. Whether the Berber reflexes of both PAA roots do (perfectly?) overlap (cf. Gdm. -nħ- vs. Twareg *-nh- vs. NBrb. *-ny-), however, has to be further investigated.

⁷ J. Osing’s (2001, col. 576) objection as to its reading and his inner Egyptian root etymology (“jnh̄ Augenbraue (zusammen mit dem zugehörigen Verb jnh̄ umgeben, umranden) ...: die ältere, sicherlich ursprüngliche Form ist ʕnh̄”) are ill-founded for a number of reasons. ● (1) In support of the older ʕnh̄, Osing (l.c., fn. 99) cited a number of CT places (“S. CT IV 298/299b, 301c, 313b^{T2B3}, V 32d, VI 123k = 124b, VII 159g”, sic!), which comprise altogether 23 occurrences of our word, whereby ʕnh̄ is attested 6 times, while jnh̄ only twice, but the “younger” jnh̄ occurs in 15 instances (!). The var. ʕnh̄ occurs 6x (CT IV 298b: Sq4Sq, T1C^b; CT V 32d: B1C; CT VI 123k: M36C, M35c; CT VII 159g: P. Gard. III) and jnh̄ 2x (CT IV 298b: B9C^b, CT V 32d: B2L), while jnh̄ 15 times (CT IV 298b: B14, M4C, M54C; CT IV 299b: L1N4, T1Be, T3Be, M57c, M1N4; CT IV 301c: M4C, M54C, T1Be, T2Be, T3Be; CT IV 313b: T2Be; CT VI 124b: M1 Ann.). Surprisingly, Osing quoted whole CT passages for ʕnh̄ which do not have even one single (!) instance of ʕnh̄ (cf. CT IV 299b, IV 301c, IV 313b, VI 124b)! Did Osing suppose that the reader will not check back his “evidence”? One cannot be astonished enough at this kind of presentation of data. ● (2) Secondly, since most forms display jnh̄, it is no wonder that CT vars. are glossed as jnh̄ even most recently in DCT 41 – similarly to the OEg. ʕnh̄ (listed as jnh̄!) “Augenbraue” (only 1x, V., ÄWb I 156), which, besides, Osing left unnoticed. ● (3) Thirdly, the fact that there is one single OK var. with ʕ- does not alter PEG. *jnh̄ > ʕnh̄ ~ *jnh̄ (together with PEG. *jnh̄ > OK ʕnh̄ ~ jnh̄ “to live”, below) as an early example of the change PEG. *j- > OEg. ʕ- (hence later j-) in the proximity of ħ and ħ. ● (4) Moreover, the metathetic change of OEg. roots containing ħ and a nasal (m, n) is known in a number of examples. Cf. (4.1) OK ħmz (m) vs. ħmz.t (f) “alte Schreibung für mzh.(t)” > Greek χάμψα, the Egyptian name of crocodile according to Herodot (Wb III 96, 11-12), early vars. to mzh̄ “Krokodil” (OK, Wb II 136), perhaps related to ES-Cu. (*Wanderwort?*) *ħazz- [GT: < *ħamz-?] “crocodile” (cf. Leslau 1963: 87; 1979 III: 119; Cerulli 1951: 408); (4.2) Eg. ħms “Kornähre” (BD, Wb III 367, 5) = ħms ~ ħmz “ear of corn” (CT, DCT 419) < OEg. *ħmz (unattested) [reg. < *ħmz], cognate to Ar. mazħ- “Kornähre” (Eg.-Ar.: Vycichl 1958: 388; 1959: 146, #4; 1990: 52), cf. also NOm.: Kaffa moč “metter la spiga (pianta)”, močč-ō “spiga” [Cerulli 1951: 468]; (4.3) OK ħm^ʕ, var. to mħ^ʕ ~ m^ʕħ “Flachs” (Wb II 121, 4; AÄG = Edel 1955: §93). ● (5) For all these reasons I have to refute Osing’s leaking objection and to maintain derivation of Eg. jnh̄ < *rn̄h̄ from AA *-nħar- ~ *nyar- “eyebrow” [GT]. ● (6) His inner Eg. derivation, besides, is not original at all, cf. J. Vergote’s (1971: 49) *ex cathedra* allegation on the primary sense of Eg. jnh̄ > Cpt. *(é)nāh (sic) as “that which encircles, surrounds” following, in his view the Sem. *qitalu ~ Eg. *sídmu pattern of a “concrete noun”, and, unfortunately, they both forgot to refer to that their ideas are dating back as early as F. von Calice’s comment in GÄSW 119, #499 where such a derivation was critically considered as out-dated already therein: “wenn auch diese Zusammenhänge wenigstens zum Teil durchaus möglich sind, so greifen sie doch m.E. über das von uns gegenwärtig Erfassbare hinaus”. In addition, the “*Ableitungsverbum*” NK jnh̄ “umgeben” (XVIII., Wb I 99) = “to surround, enclose” (FD 24), explained by Osing from an unattested and baseless OEg. *ʕnh̄ (cf. also NBÄ 538-9, n. 373), displays in fact the very same *Lautgeschichte* as Eg. jnh̄ ~ ʕnh̄ “eyebrow” (i.e., < *rn̄h̄, met. of *nħr), cf. WCh.: Suroid *nēr “to surround” [Takács 2004: 267]; Sura nēr “umgeben, umliegen, umzingeln” [Jng. 1963: 76], Mupun nēr “to surround, gang up on someone” [Frj. 1991: 42] < Eg.-Ch. (CAA???) *√nħr “to surround” [GT]. This is how Osing’s failure on the history of this root becomes complete.

Moreover, diachronically how “eyebrow” comes from the sense “front part” (and not *vice versa*, which is for me hardly conceivable), cannot be definitely answered here.

Ad SBE VII, #300. Brb. * $\sqrt{\text{nh}}$ r “conduire” [GT] > NBrb.: Qabyle $\text{n}\acute{\text{a}}\text{h}\acute{\text{e}}\text{r}$ “conduire” [Cohen] = e-n $\acute{\text{h}}\acute{\text{e}}\text{r}$ “conduire, mener (animal, bête de somme)” [Dallet 1982: 558] || WBrb.: Zenaga $\sqrt{\text{nr}}$: t(ə)-nār-t “fait de (se) guider, s’orienter”, ä-m-nər, pl. ə-m-nir-än “guide”, yi-š-nār “se guider, (savoir) s’orienter, connaître la route (de)” [TC 2008: 403] || SBrb.: Twareg (sic) ɛ- $\text{n}\acute{\text{e}}\text{r}$ “führen, leiten” [Zyhlarz 1934: 119] = Brb. (sic, no lg. name detailed) neru (sic) “leiten, führen” [Calice pace Vycichl in GÄSW 163, #662] = Twareg (sic) ənər “conduire” [Cohen],⁸ Ahaggar e-ner “guider (servir de guide à)” [Foucauld 1951-2: 1396], EWlmd. ə- $\text{n}\acute{\text{e}}\text{r}$ “1. guider (qqn., une caravane), 2. être guidé, 3. se guider (sur), trouver son chemin (au moyen de)”, EWlmd.-Ayr ta- $\text{n}\acute{\text{e}}\text{r}$ “chemin de salut (mythologique)”, e-mə $\text{n}\acute{\text{e}}\text{r}$, EWlmd. a-mə- $\text{n}\acute{\text{e}}\text{r}$ ~ a-mā- $\text{n}\acute{\text{e}}\text{r}$ “guide connaisseur des routes” [PAM 2003: 621-622] || WCh.: Goemay ner “to drag along, carry away” [Srl. 1937: 157] || CCh.: Masa nār “conduire (le troupeau)” [Caütucoli 1983: 119].⁹

A remotely related root variety with C₃ *-l is presumably attested in Sem.: Hbr. $\sqrt{\text{nh}}$ l piel “1. die Herde führen, (v. anderen) führen” [GB] = piel “1. to escort, wit care (to a meadow, to water), 2. transport (on donkeys), provide with food” [KB], NHbr. $\sqrt{\text{nh}}$ l piel “leiten” [GB] = “to lead” [KB] | Ar. $\sqrt{\text{nh}}$ l “zum Trankorte führen” [GB] (Sem.: GB 489; KB 675).

434. PBrb. *i-n $\sqrt{\text{h}}$ ir “antelope” [Kossmann 1999: 81, #128] > NBrb.: Shilh a-nir “antelope” [Jordan 1934: 36], Medieval Shilh i-nir-en “antilopes” [Kossmann] || WBrb.: Zenaga a-na ?r , e-na ?r^{h} , a-nè ?ri “*Gazella Dama Dama*” [Nicolas 1953: 149, 230] || SBrb. * $\sqrt{\text{nh}}$ 3r “antelope mohor” [Prasse] = *é-nhir [Kossmann 1999: 65, #28]: Ahaggar e-nir, pl. i-nîr-en [Foucauld

⁸ The Twareg root was equated by E. Zyhlarz (1934: 119) and M. Cohen (1947: #461) with Eg. nrj “hüten, bewachen” (OK-, Wb II 278, 15) = “to protect” (FD 134) > nr “Hüter, Hirt” (PT-, Wb II 279, 1) = “cattle-herd custodian (Junker: Hirt, Badawy: herdsman)” (OK-, Jones 2000: 484, #1812), which, however, does not reflect the C₂ laryngeal of the Qabyle cognate. Following W.F. Albright (1918: 233, #53; also ESS §11.a.26) and F. Behnk (1927: 81: #7), Cohen also compared (in the same entry!) ES: Geez nōlāwī “Hirt” [Behnk] = nōlāwī “berger” [Cohen], which had well before him been rejected already by C. Brockelmann (1932: 109, #41) and F. von Calice (GÄSW 163, #662) as both Albright and Behnk disregarded the rendering of this Geez word by Praetorius (in ZDMG 43, 324; 47, 385) who saw here a loan from LECu.: Oromo lōn “herd, flock” + ending -āwī via metathesis. This view was supported by W. Leslau (1987: 398; 1988: 88) too, who included in this comparison also Geez nolaw/ya “to tend flocks, be a shepherd”, perhaps nələw “following, retinue, escort” (unless an error by misprint for talawa “to follow”) and LECu.: Saho lāwin-ā ~ lōyn-ā “der Hirt” [Reinisch 1890: 251] = lawin-ā “shepherd” [Leslau] = lōyn-ā “Hirte” [PW], for which cf. also Saho-Assaorta lōyn-ā “pastore” [CR 1913: 69], Saho-Irob loyni, pl. lōn “Hirte” [PW 1953: 387] and Afar lōyn-a (m) “1. herdsman, shepherd, guardian, 2. owner, one in charge, 3. flock, herd, group” [PH 1985: 156] || CCh.: Bura luwali “a guardian” [BED 1953: 125]. I wonder, however, how a loan from LECu. agrees with a metathesis at a time and whether the Geez root is perhaps in any way related to NBrb. *a-nilti “berger” [GT] > e.g., Common Zenet *a-nilti ~ *a-linti [Laoust 1931: 202], Nefusa nilti [Motylinski 1898: 124].

⁹ O.V. Stolbova (CLD I 144, #577) affiliated the Masa root with some other reflexes of her Ch. *nVr- “to hunt, search”, which certainly belongs to another AA root, cf. the entry for NBrb.: Qabyle $\sqrt{\text{ny}}$ r: neyyer “continuer, poursuivre” [Dallet 1982: 588-9] below (ad SBE VII #327). Her equation of all these *comparanda* with Sem.: Ar. $\sqrt{\text{nh}}$ r I: nahara “4. éloigner, chasser, repousser à force de cris”, VIII “1. chasser, éloigner qqn. à force de cris” [BK II 1354] seems perhaps to fail also for semantical reasons.

1951-2: 1399 > Prasse], Nslm. ti-nhir-t [Basset > Prasse], Tadghaq e-nher, pl. i-nher-än and Tudalt e-ner, pl. i-ner-än “gazelle (dama/mohor)” [Sudlow 2001: 272], Wlmd. ê-ner [Basset 1887: 447] = i-nir, a-nər, fem. ti-nir-t [Prasse] = ä-naṛ ~ e-neṛ “antelope” [Drouin], EWlmd. ē-nēr “faon” [Nicolas 1950, 18] = e-ṇer, pl. i-ṇer-an (“antelope dama, mohor, *Gazella dama* (Pallas)”) [PAM 2003: 622], Tameseghlalt ä-naṛ “antelope” [Drouin 1979-1984: 513], Ayr e-nir ~ a-nir, pl. i-nir-ən [Prasse], Ghat i-nir, pl. i-nir-en [Nehlil 1909: 127] (SBrb.: Prasse 1969: 84, #559; Brb.: Kossmann 1999: 65, #28; 81, #128) || NOm.: Yemsa (Janjero) nor-ō “capra” [Cerulli 1938 III: 81] = “goat” [Bender 2003: 341, #40: isolated in NOm.]

435. Brb. *√nhl “to easen” [GT] > NBrb.: Zayan & Sgugu ɛ-nheḷ “1. calmer une douleur” [Loubignac 1924: 577] || SBrb.: Ahaggar i-nhal and Ghat ə-nhil “être facile” [Prasse 1969: 82, #543], Ayr i-nhal “être facile”, nəhəlhəl “chanceler, (se sentir) défaillir, languir (de faim etc.)” [PAM 2003: 607], Ghat e-nhil “être facile” [Nehlil 1909: 159] || Sem.: (???) Hbr. √nhl piel “beruhigen (pace Haupt)” [GB 489]¹⁰ || Eg. *√nhl > nh3 (ḏw) “calmer (la douleur)” (XXVI., AL 78.2149 pace Assmann 1977: 99, col. 26 and 101, n. k), cf. nh3 (not translated) in compounds, viz. nh3-ḥrw, nh3-ḥr, nh3-t3 (NK: Amduat, cf. Wb II 283, 4, Hornung 1963 II: 65), whence a participle may be nh3.w (pl.) “ceux qui sont calmes, abattus (?)” (CT VII 470c, AL 78.2150, cf. AECT III 169, spell 1130, n. 18) = “les Apaisés” (Barguet 1986: 664) = “die Beruhigten (der Unterwelt)” (ÄWb II 1307c; GHWb 419) < NAA *√nhl “calmer (la douleur)” [GT]. Is this Egypto-Berber isogloss of biconsonantal origin? Cf. ES *√nhy [GT] > e.g., Geez √nhy “to feel relieved” [Leslau 1987: 394].

436. Common Brb. *a-nhil, pl. *i-nhal “Strauß” [Zyhlarz 1931-2: 5] = *ā-nihīl, pl. *ī-nuhāl [Prasse 1974: 167] = *a-nḤil [Kossmann 1999: 83, #138] = *√nh/yl [Prasse 1999 p.c.] > NBrb. *a-nīl “Strauß” [Zyhlarz]: Shilh a-nhir “autruche” [Jordan 1934: 36], Djebel Bani (S. Shilh in W. Anti-Atlas) a-nhir “ostrich” [Laoust 1931: 198 apud Blench and Kossmann 1999: 84] | Beni Snus a-nhil (rare) [Kossmann] = a-nhīl, fem. ta-nhīl-t “autruche” < Twareg? [Prasse] || Twareg *a-nhīl “Strauß” [Zyhlarz]: Wlmd. e-nhe (?) [Barth] ~ a-nil [Basset], pl. e-nhal (1883) ~ i-nhal (1887) “autruche” [Basset] = a-nhil ~ a-nil “autruche” [Prasse], EWlmd. a-nīl, pl. i-niāl “ostrich (*Struthio camelus*)” [Nicolas 1950: 13] = a-nil, pl. i-nəyal “autruche (*Struthio camelus camelus*)” [PAM 2003: 617], Ayr a-nhil ~ a-nil ~ i-nil, pl. e-nhal “autruche” [Prasse] = e-nil, pl. ə-nyal “autruche etc.” [PAM l.c.], Kel-Ui a-nhal, pl. i-nhal-en “autruche” [Basset], Ahaggar a-nhil, pl. i-nhal “autruche mâle” [Basset] = a-nhêl, pl. i-nhâl “autruche” [Prasse] = a-nhel (“in other Tuareg dialects” a-nhil, a-nāhil) [Militarev 1988: 199] = a-nhel, pl. i-nhal [Prasse 1999 p.c.], Ghat e-nali “autruche” [Basset] = a-nhil, pl. i-nhal, fem. ta-nhil-t, pl. te-hinhal “autruche” [Nehlil 1909: 131] = e-nhil, pl. i-nhal, fem. ta-nhil-t, pl. či-nhal “autruche” [Prasse], Tamasheq a-nhil, pl. i-nhal [Vycichl], Tadghaq a-nhel, pl. i-nhal ~ (pace Sudlow) a-nāhil, pl. i-nhal [Prasse 1999 p.c.], Tudalt (Udalan) a-nil, pl. i-nyal “ostrich” [Sudlow 2001: 274], Taneslemt a-nhel, pl. i-nhal ~ a-nāhil, pl. i-nhal [Prasse 1999 p.c.], Sergou e-nhil “autruche” [Basset] (SBrb.: Basset 1883: 320; 1887: 334, 447; Prasse in p.c. on 5 July 1999, p. 6; Brb.: Kossmann 1999: 67,

¹⁰ This is an older rendering of the Hebrew root otherwise treated s.v. SBE VII 300 above.

#44, 75, #98, 83, #138; Blench 2000 MS: 10 after Prasse 1969: 82, #544). The Afro-Asiatic etymology of this Berber zoonym had been unknown until W. Vycichl (1933: 176) and E. Zyhlarz (1934: 109), who equated it with Eg. nj.w ~ sporadic nr.w¹¹ [Vycichl: < *nl.w] “Strauss” (PT-, Wb II 202, 8) = “ostrich” (FD 125; Houlihan 1986: 1-5, #1 with disc.) = “Strauß (*Struthio camelus*)” (ÄWb I 595a).¹² Earlier, I also followed W. Vycichl’s idea (EDE I 89-90), although I was puzzled by Brb. *-h- unreflected by the Egyptian parallel, which I was disposed to regard as an -h- *furtivum*, an inetymological or parasitic -h- (pretty well attested in Soqotri, cf. Leslau 1938 passim) not part of the original root. Then, V. Blažek (2001: 626) ventured to explain Brb. *-h- here from *-b- (sic, not *-b-), although normally only Twareg *-h- can originate from *-b- if there is an East Berber evidence (which we do not have here, however), for which he quoted plausible and really striking cognates from LECu.: Rendille nabāl “Strauß (Vogel)” [Schlee 1978: 142, #802] = nabāl “ostrich” [Oomen 1981: 70] = “ostrich(es) (*Struthio camelus*)” [PG 1999: 230], Arbore nebel (m) “ostrich(es)” [Hayward 1984: 387], Elmolo nápal (m) “ostrich” [Heine 1980: 208], cf. Dasenech nēi [GT: perhaps < *newey < **nebel?] “ostrich” [Tosco 2001: 520]. If the Brb.-LECu. match indeed proves correct, we should assume that: (1) Eg. nj.w ~ nr.w < *nl.w was borrowed from a Berber form like *nil from some pre-Twareg source (like Tawllemmet or Ayr) where *-h- disappeared, which would be an apparent anachronism, since the Egyptian word is attested as early as the late OK,¹³ when Proto-Berber is supposed to have been a unity as yet.¹⁴ (2) The strange anomaly of CBrb. *-b- > NBrb. *-h- (instead of an expected *-w- > -Ø-) may be due to a NBrb. borrowing from Twareg as supposed for the case of Benis Snus by K.G. Prasse (1969 l.c.). However be it, additionally, the LECu. root seems now to be also reflected in SOm.: Hamer lâ’bálí (-’b- for -b-?) [GT: assim. < *nabal-] “ostrich” [Fleming 1990 MS: 1] || Ech.: perhaps Mubi-Toram *nya₂bVI- “guinea fowl” [GT] > Mubi nyèbèlò (m, f), nyèbèl “Perlhuhn” [Lukas 1937: 184] = nyèbèlò (m), nyèbèlé (f), pl. nyèbèl “pintade” [Jng. 1990 MS: 37], Kajakse nyabùlo, pl. nyabili “pintade” [Alio 2004: 246, #257].

¹¹ For the sporadic spelling as nr.w (e.g., pap. Koller 4:1, where 3:6 has nj.w, pap. Turin 125:6) cf. Gardiner 1911: 41*, fn. 3. Note that not all the varieties listed by V. Loret (1904: 231) can belong here.

¹² All other etymologies of Eg. nj.w are to be discarded. F. von Calice (GÄSW 159, #644.a) and A.Ju. Militarev (MM 1983: 256) ventured an equation with the Sem. term for “ostrich”: Hbr. yā’ēn < *ya-’in- (?), Syr. na’ām- | Ar. na’ām- < *na’am-. Besides, W. Westendorf (1989: 84-85) explained the phonetic value of the Eg. hieroglyph D41 depicting, in his view, “eig. ein Straußenbein” (Westendorf) = “avant-bras dont la main a la paume retournée” (Lefèbvre 1955: 390, D41) = “une patte d’autruche (*Struthio camelus*) qui n’est pourvue que de deux doigts” (Keimer 1957: 97-99), on the basis of Eg. nj “abweisen, niederwerfen”. Moreover, he believed to have understood the origin of Eg. negation njj, which was for him “aus der ... Abwehrkraft des Straußenbeines zu erklären”, although apparently he himself was uncertain the way these comparanda are to be connected: “oder umgekehrt: nj.w ‘Strauß’ < eig. *’der Abweisende, der Niederwerfer’ ...”! H. Satzinger (1994: 199), without going into any etymology, surmised behind the Egyptian orthographies nj.w ~ nr.w eventually a reading *lj.w, which would certainly discard any relation to the Berber term.

¹³ Prior to the PT 469a of Unis (cf. AEPT 96; Spiegel 1971: 296; ÄWb I 595a), the last king of the 5th Dynasty, apparently, the word has not been recorded at all (FÄW 216 lacks it).

¹⁴ The lexicostatistical and glottochronological calculations by A.Ju. Militarev (2010: 262-263, table 4) suggest a relatively late disintegration of the Berber parental language community around the middle of the second mill. BC.

Berber *√nm-

437. NBrb.: Shilh nem “être entassé” [Jordan 1934: 96] || Sem.: OSA (Sabaic) √nmw “to increase”, mntm (adj.) “fat, rich (said of curds)” (?) ≈ Ar. muntamin “fat, satiated” [Biella 1982: 306], OSA (Madhabi) √nmy “augmenter” [Arbach 1993: 78], Ar. √nmw and √nmy > I namā “1. croître, grandir, prendre de la croissance (se dit des végétaux, des hommes etc.), 2. hausser, monter (se dit des prix des subsistances), 5. s’élever, croître (se dit des eaux)”, nāmiy-at- “2. végétation, croissance, faculté de grandir, développement”, II “5. alimenter, nourrir le feu en y ajoutant du combustible”, namiyy-at- “végétation etc.”, namā?- “1. végétation, croissance” [BK II 1350-1], Yemeni Ar. √nmw > namā “to grow” [Pimenta 1990: 498] || Eg. nm (coll.) “Ertrag des Ackers” (GR, Wb II 265, 3) || ECh.: Kajakse námmà “gros (big)” [Alio 2004] < N²AA *√nm “to grow (of vegetation)” [GT]. The Kajakse-Ar. comparison is due to O.V. Stolbova (CLD I 232, #98).

438. SBrb.: EWlmd. and Ayr ə-ṇəm “1. s’habituer et s’attacher à, 2. s’apprivoiser/devenir familier avec, 3. être habitué à/se laisser têter par un petit dont elle n’est pas la mère (femelle)” [PAM 2003: 618] || WCh.: Bole- Tangale *√nm “close (proche, nah)” [GT]: Tangale ṇimṇim “near, close” [Jng. 1991: 124], Pero némò “to approach”, nīmì “close” [Frj. 1985: 43], Maha ném “near” [Alio 1988b MS], Ngamo ném “near” [Alio 1988c MS], Dera ném “near(ly)”, nùmè “to close” [Newman 1974: 130] = némámá “near” [Kidda 1991 MS: 7]. Any connection to WCh.: Kofyar nung “to belong” [Netting 1967: 30] (GT 2004: 271: isolated in Angas-Sura)?

439. NBrb.: Mzg. nemnem (from Ar.?) “1. médire, calomnier, 2. rapporter, 3. cancaner, 4. remplir son discours de mensonges, 5. moucharder” [Taïfi 1991: 492] || Sem.: Ar. √nmm I: namma “1. rapporter dans l’intention de nuire à qqn. ou de brouiller les gens, 2. calomnier, être calomniateur, 3. remplir son discours de mensonges”, nummiyy- “3. vice, défaut qui détruit la pureté d’une chose” [BK II 1346] || Eg. nm “sich an jmdm./etw. vergreifen, schief gehen (Pläne)” (MK, Wb II 264, 11-12; GHwB 412) = nm “to go wrong (of plans)” (FD 133) = √nmjw “to go wrong” (DCT 226) || LECu.: Dasenech ṇimísu “to deceive, trick” [Tosco 2001: 522] || Ch. *nVm- “to tell a lie, conceal sg.” [CLD] > WCh.: Angas-Sura *num → *nəm “to deceive” [GT 2004: 270] = *nu₁m “to deceive (обманывать)” [Stolbova 1977b] = *num [Stolbova 1987]: Angas (hill) nüm “to deceive” [Foulkes 1915: 256] = num (so, false -u-) [Stolbova < Foulkes], Sura num pεε “betrügen” [Jng. 1963: 77] (AS: Stolbova 1977b: 156, #155; 1987: 243, #51) || ECh.: (???) Bidiya reflex semantically certainly unconvincing¹⁵ (Ch.: CLD I 82-83, #260) < AA *√nm “1. to go wrong, 2. mislead” [GT]. Angas-Ar.: HSED #1884. Ch.-Ar.: Stolbova 1996: 85; CLD I 139, #531.

Root variety with an *Anlaut* *l- (due to nasal dissim.?) attested in SCu. *lama- “lie” [Ehret].¹⁶ Iraqw lama “lie”, lam-us-mo “liar”, Burunge lama “lie”, lam-is-eṅ “liar”, Alagwa

¹⁵ Cf. Bidiya nyiim “feindre, se taire sur qqch.” (cf. nyiimo “secret, clandestin”) [AJ 1989: 103] = “to simulate, conceal” [Stolbova in CLD].

¹⁶ Borrowed into PBantu *-limi “lie”, cf. Ehret 1974: 80.

lam-us-umo “liar” (WRift: Ehret 1980 l.c.) | Ma’a lāmġ “Lüge” [Meinhof 1906: 312] = mlamé “lie, falsehood” [Ehret 1974 MS: 39] | Dahalo lankaḍ- [-nk- < *-mk-] “to lie” [Ehret] (SCu.: Ehret 1980: 202, #4) || Ch. *IVm- “1. to tell a lie, 2. flatter” [Stl.] > e.g., WCh.: Tangale meḷem “a lie”, muḷum “lie, falsehood” [Jng. 1991: 119, 122] || CCh.: Bata lāmò “to blackmail” [Pweddou 2000: 49] | Mada álma “attirer par ruse, par tromperie, tromper” [Barreteau-Bléis 2000: 160], Matakam lám “to deceive, trick” [Rossing 1978: 235, #185 and 350, #760] || ECh.: Gadang là:m “tromper” [JI 1990 MS: 14, #267], Sibine lāmà “to tell a lie” [Stolbova] (Ch.: CLD I 82-83, #260). SCu.-Ch.: HSED #1649; CLD I 82-83, #260; Stolbova 2005: 50, #2 and 57, §1.6.7 (both Ch. *n- and *l-).

Berber *√nn-

440. Brb. *nna “mother” [GT] > e.g., NBrb.: Wargla nna, nanna “(ma) mère” [Delheure 1987: 209] || SBrb.: Ahaggar a-nna “Mutter” [Basset apud Lippert], EWlmd.-Ayr a-nna “(ma) mère (des humains)” [PAM 2003: 582] || ECu. *naḥ- “mother (?)” [GT]: LECu.: Borana Oromo nanā “young women, girlfriends” [Stroomeer 1995: 212] | Dobase (Qawko) naḥayye “wife, woman” [Hayward 1978: 62], Yaaku nēne, pl. nēne “mother”, nēhēh “mother (other than one’s own)” [Heine 1975: 130] = nēhēh [Hyw.] || Common Ch. *n- “mother” [JS 1981: 185B] = *nV̄ “(my) mother” [Stl.] > e.g., WCh.: Hausa (Sokoto, Zanfara) inna “Mutter” [Basset apud Lippert] | Karekare nānā “Mutter” [Lukas 1966: 203], Tangale nāā ~ neḡ, nāa-, also nuṇe, nu- “mother” [Jng. 1991: 123, 125], Kwami nó “Mutter” [Leger 1993: 172] || CCh.: Fali nu [Barth] = no [Strümpell] = né “Mutter” [Lukas] | Masa naa “Mutter” [Lukas] || ECh.: Kwang-Modgel ná “Mutter” [Lukas] (Ch.: Lukas 1937: 97; CLD I 105, #363). Ahaggar-Hausa: Lippert 1906: 341, #16; Brb.-Ch.-Afar: Blažek 2002: 112, #6.3.

441. NBrb.: Zayan and Sgugu √nn: ɛ-nnu (regarded as < *√md!) “traverser un pays, un cours d’eau” [Loubignac 1924: 571] || LECu.: Dasenech nú “to pass, cross” [Tosco 2001: 521] || CCh.: Masa nānā “to go” [Jng. in JI 1994 II: 163].

442. SBrb.: EWlmd.-Ayr a-ṇṇ “1. être dressé, formé (animal), 2. être formé, cultivé, éduqué (personne, p.ex., par des études), être corrigé, apprendre les bonnes mœurs, 4. être rendu docile, dompté (personne), 5. s’entraîner, se former” [PAM 2003: 620]¹⁷ || Sem.: Ar. ʔanna “paraître, se présenter” [DRS 25] || Ch. *n-n “to show” [JS 1981: 227F]: WCh.: Hausa núúnà “to show”, núúnáá “to point at” [Abraham 1962: 707], Gwandara nána “1. to show, 2. point” [Matsushita 1972: 86] | Angas-Sura *nʔin > *nin ~ *nən “to show” [GT 2004: 275]: Angas (Kabwir dialect) nyin ~ nyín (so, long -ii-) “to show” [Jng. 1962a MS: 31] = nyin “to show” [ALC 1978: 49], Msr. nin “to show, reveal, point with finger”, cf. nin-kə-yit “to differentiate, distinguish” (lit. “showing of limits”, cf. AS *yit “boundary”) [Diyakal 1997 MS: 161, 168],

¹⁷ Compared by K.-G. Prasse (PAM l.c.) with Ar. ʕinān- “rêne”, ʕunn-at- “clôture”, ʔaʕanna “domestiquer” (pace M. Cohen).

Goemay nin “to show, teach” [Sirlinger 1937: 161] = nin “zeigen” [Jng. 1962b MS: 9] = nin “to show” [Kraft] = nin “to show, point” (Hausa nuna) [Hellwig 2000 MS: 25].

443. Brb. *√*nn* [GT] > NBrb.: Tamazight (Zemmur) nin “gémir” [Taïfi 1991: 458] || SBrb.: EWImd.-Ayr ə-ṇṇəṇ “1.épeler, 2. bégayer, ânonner” [PAM 2003: 621] || Bed. nīn “Gesang, Vortrag der Barden, Rapsodie”, nīn “(be)singen” [Reinisch 1895: 184]¹⁸ < AA *√*n(y)n* [GT].¹⁹

444. NBrb.: Mzg, e-nnun “anguille” [Abès 1916: 118] || Sem. *nuwn- “fish” [Fox 1998: 23] = *√*nwn* > *nūn- “fish” [Huehnergard 2000: 2066]:²⁰ Akk. nūnum [Fox] || Phoenician *nūn “fish” [Huehnergard],²¹ Syriac nūnā [Fox] | Ar. nūn- “poisson (surtout grand)” [BK II 1373] || CCh.: Masa *non “poisson sp.: silure” [GT]: Masa-Bongor nōn-nā “silure” [Jng. 1971], Masa nōn “le poisson sp., prob. le silure” [Caïtucoli 1983: 119] = nōn “poisson: *Clarias lazera*” [Ajello], Gizey nōnī “poisson: *Clarias lazera*” [Ajello], Ham, Musey, Lew ṽōnōn “poisson: *Clarias lazera*” [Ajello], Marba ṽānōn “poisson: *Clarias lazera*” [Ajello] (Masa group: Ajello 2001: 45) < CAA *√*nn*, prob. *nun “fish” [GT].

445. Brb. “verbe primitif” *nunny (attested with diverse prefixes: **q-, h-, k-, g-**) < *√*ny* “rouler etc.” [NZ 2002: 367] || (?)²² Eg. nnj “(weg)gehen” (PT-, Wb II 276, 1-2) = “aller, se tourner (?)” (Jacq 1986: 32) = “weg-, zurückgehen” (GHWb 416) > nnj “1. to turn about (CT I 306a), 2. go to and fro (CT V 263 as in PT 310)” (AECT I 275-276, spell 341, n. 2 vs. II 69, spell 423, n. 8) = “to go to and fro” (DCT 231), hence: nnj.t “Schritt” (PT-, Wb II 276, 3) > (?) nn.wt “windings (?) (allusion to the bends of the Nile)” (CT IV 343, AECT I 1.c.) || LECu.: Oromo nannaū “girare, voltare, far rotolare, ruzzolare, girare su di un perno, aggirare, ravvolgersi ...” [da Thiene 1939: 254]= nānna^wa “to go round, turn, rotate” [Gragg 1982: 297] || WCh.: Boghom nyaan “to turn round (intr.)” [Shimizu 1975: 38]. Reduplica-

¹⁸ Equated by M. Cohen (1947: 95, #83) as a “forme à redoublement” with Sem.: Ar. √*ny*, Hbr. √*ny* “chanter”, Ar. √*nn* “gémir”, Hbr. √*qnn*, Geez √*qny* “chanter” (as “variantes”) || NBrb.: Beni Snus, Sus īni “dire, exprimer” || SBrb.: Twareg e-un “dire, exprimer” (Cohen: “douteux, correspondance des sens imparfaite”).

¹⁹ Remotely related to the NAA isogloss of Sem.: (?) Akk. naʔū “to shout (with joy or pain)”, nuʔū ~ nuḥḥū “to lament” [CAD n2 134] || Hbr. √*nhh* qal “wehklagen”, nifal “hinter jem. her klagen” [GB 488-489] = qal “to lament” [KB 675] | NSyr. √*nhy* “to moan” [MacLean] = “seufzen” [GB], JNAram. √*nhy* “to groan, yearn”, niḥya and nhīta “groaning, weary”, nehwaṭa (pl. of *nehwa?) “groans” [Sabar 2002: 230] || (?) Eg. nhnh [footnote omitted] “vom Brüllen des Löwen” (NE mag., Wb II 286, 7) < NAA *√*nh* “to cry” [GT].

²⁰ M. Cohen (1947: 188, #466) affiliated Hbr.-Ar. nūn- with Eg. rm “fish”, NBrb.: Sus a-mun and Twareg e-men “sorte de poisson”, also LECu.: Somali mal(a)lay, HECu.: Sidamo mūoliyā “fish”, for which he was compelled to arbitrarily assume several obscure “assimilations et dissimilations de liquides”. The Semitic word has similarly certainly nothing to do with Dravidian *mīn- or NCAucasian *χwanḥV and Sino-Tibetan *ḡ(j)ā “fish” as S. Starostin (2003: 470) suggests.

²¹ This is the Semitic word the 14th letter of the Phoenician alphabet (and, henceforth, also Greek *vu*) has gained its name from, cf. Huehnergard (2000: 2066).

²² As can be seen from the presentation of the Eg. gloss, the rendering of this verbal root is disputed as well as its etymology. J. Osing (2000: 174, fn. 79; 2001, col. 579) saw in Eg. nnj “(weg)gehen” a n- prefix derivative of Eg. wnj “eilen, vorbegehen”.

tion, cf. the entry of SBrb.: Ayr ə-ḡwəy [PAM] (below) for the cognate of its simplex root, namely AA *√nwɣ “to be/go/make round” [GT].

Berber *√nr-

Ad SBE VII, #304. EBrb.: Ghadames √nr > nār “moisir, se corrompre” [Lanfry 1973: 245, #1151] || Sem.: Official Aram. nʳr qal “to foam (said of wine), ferment (?)” (meaning uncertain) [DNWSI 739] | Ar. √nr IV “2. être gâté corrompu” [BK II 1300] || (?) Eg. nʳrʳ.t “etwas an einer Geschwulst” (Med., Wb II 209, 9) = (to be read nʳrʳr?) Krankheitserscheinung am Ohr” (WMT I 448; GHWb 395) || LECu.: Dasenech nyurān “wet” [Bender 1971: 251, #94] || SCu.: PRift *naʳar- “wet” [Ehret]: Iraqw naʳaro “wet” | Asa naʳar-at “cow dung”, originally *’wet cow dung’? (SCu.: Ehret 1980: 351) || WCh.: Gwandara nyàra “1. dampf, 2. unripe, green, 3. uncooked” [Matsushita 1972: 91] < AA *√nrʳr ~ *√nrɣ “1. to be wet, 2. ferment, rot” [GT].²³ The Berber reflex supports PAA C₂ *-ʳ/Ø-.²⁴

446. NBrb.: Mzg. a-niri, pl. i-niri-t-n “tristesse, chagrin causée par la mort d’un proche” [Taïfi 1991: 495] || ECh.: Mokilko nyírnyíre “pleurer (bébé)” [Jng. 1990a: 149].

Ad SBE VII, #302. WBrb.: Zenaga e-nnar “être rassasié”, te-nir “satiété” [Basset 1909: 247, 249] = √nr (3rd person sg. masc. aor.: iɛ-nnar, n. act.: ta-naʳr-t) “se rassasier” > ta-ʳnār-t “satiété” [Nicolas 1953: 229-230] || Sem.: Ar. √nr I “to complete (things or affairs)” [Lane 2870] (?) > mu-nayyar- “gros, épais (cuir, peau)” [BK II 1376] || ECh.: WDangla nyààrè “obturer d’un bouchon de terre” [Fédry 1971: 254] < AA *√nrɣ “to (be) fill(ed)” [GT].

447. Brb. *a-nnar, pl. *i-nurar “aire à battre” [Chaker]²⁵ = *a-nnar [GT] > EBrb.: Ghadames a-narar, pl. narar-en “meule (de paille, etc.)” [Motylinski 1904: 136] = a-narar, pl. narār-en “aire à battre” [Lanfry 1973: 246, #1155] || NBrb.: e.g., Shilh a-nrar “aire (à battre)” [Justinard 1914: 121] = a-nnrar, pl. innrar-en “aire à battre” [Destaing apud Chaker], Tazerwalt a-nrār ~ a-rrār “Tenne” [Stumme 1899: 165] | Seghrushen a-nrar, pl. i-nurar “aire à battre” [Pellat 1955: 121] = (also in Ait Ayash) same form “threshing ground” [AM 1971: 387] | Harawa a-nnar, pl. i-nura “meule” [Basset], Mzab a-nrar “meule” [Basset] = a-nrār “meule de paille/céréales en gerbes” [Laoust] = a-nrar, pl. i-nurar ~ a-rnan, pl. i-rnan-ən (met.) “aire à battre” [Delheure 1984: 139], Wargla a-nnar, pl. i-nurār “aire à battre” [Renisio

²³ Shall we assume an ultimate cognacy with the isogloss of Sem. *√nrʳr “молодой (young)” || CCh. *áV[H]rV “свежий (fresh), молодой (young)” established (by the way, as a reflex of Nostratic *hʳrE/*hʳrE) by N.S. Panova, A.B. Dolgopolskij, and V.Ja. Porhomovskij (1972: 65)? Cf. also WCh.: Galambu lārà “young” [Alio 1988a MS].

²⁴ Elsewhere, AA *ɣ yields as a rule Brb. *ɣ (Takács 2011: 145-148).

²⁵ A. Boulifa (1913: 390-391) surmised a borrowing from Latin area with a question mark, which would, however, *a priori* be incompatible with assuming a Common Berber term. Instead, S. Chaker (l.c.) concluded to that PBrb. *a-nnar “est un terme isolé au plan dérivationnel ... et la morphologie insolite de son pluriel ... laissant supposer une histoire linguistique assez particulière”.

1932: 393] | Nefusa a-rnan (metathesis) “meule (de paille, etc.)” [Motylinski] = a-rnān, pl. i-rnan-ən “meule de paille/céréales en gerbes” [Laoust] | Qabyle a-nnar, pl. i-nurar “aire à battre” [Dallet 1982: 574], Zwawa a-nrar, pl. i-nurar and Bugi a-nnar, pl. i-nnurar “aire” [Basset] = Bugi a-nnar, pl. i-nnur-en “aire” [Provotelle 1911: 108] (NBrb.: Basset 1895: 98; Laoust 1931: 259) || SBrb.: Ahaggar a-narar, pl. i-nūrār “enclos solide pou-vant se fermer” [Foucauld 1951-2: 1394] (Brb.: Chaker 1986: 369-370) || HECu. *nār- “to pile up, stack (grain)”, *nār-a “pile, stack (grain)” [Hudson 1989: 419] < AA *√nr “1. to pile up grain (for threshing?), 2. thresh grain (?)” [GT].

Ad SBE VII, #305. Brb. *√n^wrz [*-z reg. < AA *-Ŝ] “talon” [NZ] > i.a. NBrb.: Mzab & Wargla i-nərz [Delheure 1984: 139, 1987: 224], Nefusa i-nərz [Laoust 1931: 298] || EBrb.: Ghadames a-nerz [Lanfry 1973: 247, #1158] || WBrb.: Zenaga uriž [Basset 1909: 247] || SBrb.: Ghat i-rez [Nehlil 1909: 209] (Brb.: NZ 2001: 186) || Eg. n3š [-3- reg. < *-r-] “point (?) (possibly the reference may be to a thorn zareba about the child)” (CT, AECT II 247, 249, spell 682, n. 10; AL 78.1969) < AA *√nrŜ “peak” [GT]. Cf. also NBrb.: Ait Said [ni^az] (√nrz) “la cheville” [Allati 1986: 34].

Berber *√nl-

Ad SBE VII, #307. SBrb.: Ayr ə-nəl “1. donner la voix rauque à (qqn.), 2. avoir la voix rauque”, te-nil-t “1. son rauque, 2. ronflement (d’un chameau mâle)” [PAM 2003: 616] || LECu.: Oromo nyalū “to complain, grumble”, nyala “complaint”, nyaltī “grumble (n)” [Bitima 2000: 209] || ECh.: Somray nul “pleurer” [Jng. 1978a: 186], Kwang-Mobu nēwélé and Ngam nēwèle “crier à rue-tête” [Lenssen 1982: 110]²⁶ | EDangla náálé “brüllen (Rinder)” [Ebobbise 1979: 133; 1987: 79] < AA *√nl “to cry (?)” [GT].

Ad SBE VII, #306. NBrb.: Shilh *ta-nnāl-t [< **-nwal-?] “poutre” [GT] > Shilh ta-nāl-t, pl. ti-nīl-īn “poutre” (cf. nnīl “être étayé”) and Sus ta-nnāl-t, pl. ta-nnāl-in “poutre” [Laoust 1942: 24, §17] || Eg. n3j.w [-3- reg. < *-l-] “kind of timber for boat (?)” (Glanville 1932: 22, n. 50 & p. 35; Jones 1988: 170, §80) = “bois servant à la construction des navires” (AL 78.1965) = “Bohle für Schiffsbau” (GHWb 390 pace Helck MWNR 889, n. m) = “Holzteile, Balken aus einem Holzgerüst” (Düring 1995: 55) < AA *√nl “timber (?)” [GT].

448. NBrb.: Tamazight nnal [< **-nHal-?] “supporter, soutenir, étayer, caler”, ta-nnal-t “1. poutre qui supporte la toiture, 2. étai” [Taïfi 1991: 490] || Eg. nhn “sich stützen auf etwas (m)” (NK, Wb II 286, 5),²⁷ possibly (???) < nhnj “sich stützen” (PT 339a, ÄWb I 641: unklar)²⁸ < NAA *√nhl “to lean on” [GT].

²⁶ Ch. Ehret (1995: 325, #633) mistakenly combined ECh.: PSomray *nul “to weep, cry” [Jng.] with L Eg. nrh (act. *√lh) “to abuse” and E Cu. *jal- “to express string feelings” < AA *-jal- “to cry out”.

²⁷ For a possible n- prefix in the Eg. root cf. Thausing 1941: 21 and Watson 1979: 102.

²⁸ For this hapax cf. otherwise also AEPT 72-73, fn. 3 (denying its connection to nhn “to lean on”) and SAK 1 (1974), 185.

Ad SBE VII, #309. EBrb.: Ghadames a-nnel [$< **\text{-nhel-?}$] “verser” [Motylinski 1904: 168] || (???) Eg. nj [if $< * \sqrt{\text{nl}}$] “remplir d’eau” (CT I 288b, AL 78.1974 contra AECT I 64, spell 67, n. 27) = “füllen (mit Wasser)” (GHWb 391)²⁹ || Sem.: Akk. na[?]ālu “(etwa) befeuchten”, na[?]īlu “überflutete Niederung”, najjālu “Bewässerer, ein Gärtner”, nīlu ~ ni[?]lu “Befeuchtung: 1. Überflutung, 2. Sperma” [AHW 694, 717] || Hbr. nahālāl (nahālōl) “Wasserplatz, Tränkstelle” [KB] | Ar. nhl “Durst löschen” [AHW] = nahal- “a first drinking”, ma-nhal- “watering place” [Lane 3039] (Sem.: Sjöberg 1998: 254, #163) || CCh.: Buduma nal “voll werden” [Nachtigal apud Lukas 1939: 120] = “remplir” [Gaudiche 1938: 30] = “to fill (intr.)” [JI 1994 II: 157] $< \text{AA } * \sqrt{\text{nhl}}$ “to pour” [GT].

Ad SBE VII, #308. Brb. $* \sqrt{\text{nnl}}$ $< ** \sqrt{\text{nw/y/HI}}$? [GT] $>$ e.g. NBrb.: Zayan & Sgugu $\sqrt{\text{nnl}}$: ɛ-nneġ “ensevelir, enterrer”, ta-nnell, pl.ti-nnġ-in “tombe” [Loubignac 1924: 577] | Mzab & Wargla a-nil “tombeau, tombe, sépulture, sépulcre” [Delheure 1984: 137; 1987: 221], Sened a-nil “sépulcre, tombeau” [Provotelle 1911: 137] || Eg. nj.t [reg. $< * \sqrt{\text{nl}}$] “demeure (?), tombeau (?)” (LP, AL 78.1979 pace Assmann 1977: 25, col. 4) || Sem.: Ar. ma-nhal- “2. tombeau, tombe”, ma-nhāl- “tombeau” [BK II 1358] $< \text{NAA } * \sqrt{\text{n(h)}}$ “tomb” [GT].

Ad SBE VII, #310. NBrb.: Mzg. $\sqrt{\text{nl}}$ ($* \sqrt{\text{nyl!}}$): nnul “1. craindre, 2. s’inquiéter, se soucier” [Täifi 1991: 490] might be a reflex of AA $* \sqrt{\text{nl}}$ $\sim * \sqrt{\text{ln}}$ (metathesis) “to fear” [GT], cf. SCu.: Qwadza nyele-siko “thing of supernatural danger” [Ehret 1995: 331, #646 with several unacceptable cognates] || ECh.: Somray laiġe “fürchten” [Lukas 1937: 80] = lány “avoir peur”, lányá (m) “peur” [Jng. 1993 MS: 41], Tumak lāġ “craindre, avoir peur” [Caprile 1975: 79].

Ad SBE VII, #312. NBrb. $* \sqrt{\text{nnl}}$ $< ** \sqrt{\text{nlw}}$ (?) [GT] $>$ Mzab nall-ət “tendre, nouer et placer la lisse sur un métier à tisser”, i-nəlli “fil de lisse, lisse” [Delheure 1984: 137], Wargla i-nəlli $\sim />$ i-nənni “lisse de métier à tisser” [Delheure 1987: 209] || (?) Sem. $* \sqrt{\text{nlw}}$ ³⁰ $>$ NHbr. nūl

²⁹ Whence (?), in the view of D. Meeks (AL I.c.), derives perhaps reduplicated: Eg. njnj “1. als Begrüßungswort (alt), 2. Begrüßung durch Wassersprengen” (PT-, Wb II 203) = “rite de lavement de mains” (Jéquier 1921: 317) = “Nini (mit reinen Händen gesprochen, teils als Gruß, Aus-/Anruf, teils als eine Geste, bei der man Wasser über die Hände laufen läßt)” (Brunner-Traut, LÄ VII col. 509-510) = “Willkommensgruß ..., für den sic der Empfangende die Hände gewaschen haben muß” (Brunner-Traut, VII col. 578-579) = “verser de l’eau (en signe de bienvenue)” (Al I.c.). The Eg. welcoming gesture njnj, whose exact and original nature, being performed almost exclusively by goddesses and gods, R.A. Caminos (LÄ II col. 916) regarded as pretty doubtful, was, however, rendered by E. Brunner-Traut (LÄ IV col. 509-510, VII col. 578-579) otherwise from the dat. prep. n: $* \text{n=j n=j}$ “(komm) zu mir! (komm) zu mir!” referring to a stela (Metropolitan Museum 13.182.3) of king Antef II (Dyn. XI, early MK), where “die Bedeutung von Wort wie Gebärde wird erhellt durch den Ausspruch des Königs vor Hathor ...: ‘Meine Hände machen den Gestus ‘Komm (sic!) zu mir, komm zu mir!’ , und so bezeichnet sich der König als der ‘reine’ Ihi ...” A third hypothesis was put forward by J. Osing (1998: 81, n. r and fn. 367), who emphasized the nature Eg. njnj as a “Grußwort, Bez. für eine Begrüßung mit der in der Determinativ dargestellten Armhaltung”, which he regarded to be “identisch mit dem wohl daraus abgeleiteten” njnj “die Arme hängen lassen” $>$ “entmutigt sein” (XX., Wb) or (!) with nnj $< * \text{njnj}$ “ermüden, ermatten” with special regard to pEbers 97:12: rd.wj=sj m njnj “indem/wenn ihre Füße müde (oder: in njnj) sind” (although it remains obscure what this place might prove about the suggested etymology)! Surprisingly, Osing was not wasting even a word to either of the other two earlier concurring theories on njnj.

³⁰ The etymology of this Sem. root, i.e., whether these Sem. forms have anything in common with the afore-described AA root, is highly dubious. According to the *communis opinio* maintained in Sematology since

“weaver’s loom” [Podolsky] | MAram. *nəwal* II “weben”, *nawlā* “1. Gewebe, 2. Webstuhl” [Dalman 1922: 266] = *nəwal* “spinnen, weben” [Levy 1924 III: 358], JPArAm. *nwwl* “loom, web of a loom” [Sokoloff 1990: 344], JNAram. *nawilta* “horizontal loom” [Sabar 2002: 231] | Ar. *nawl-* “5. atelier du tisserand” [BK II 1371] ||| Eg. *n3j.t* [regular < * \sqrt{nw} l]³¹ “Art Haus, bes. als Arbeitsraum der Handwerker und Aufenthaltsort der Sklavinnen” (MK, Wb II 200, 2-4) = “weaving workshop” (PL 489) = “the workshop probably for textile work, the spinning-house (also where Isis and Nephthys weave the mummy cloth of Osiris in pMed. London 14:8-12 and pDem. Mag. 6:12, etc.)” (Klasens 1952: 67-68) = “l’atelier de tissage” (RdE 9, 1952, 58, fn. 3, cf. also RdE 24, 1972, 117, fn. 9) = “Spinnstube, Spinnerei” (Bidoli 1976: 68) = “Spinnerei, Weberei, Textilmanufaktur” (pSallier II 6:1-5, Seibert 1967: 147, n. g, 166, n. a-b) = “Webraum der Göttinnen” (ZÄS 123, 1996, 75, n. 42) vs. *n3.t* (var. to *n3j.t*) “hall” (Lit. MK, Grd. 1909: 115) = “weaving-room(s)” (AEO II 215*, #456; FD 125) ||| CCh.: Buduma *nal* “weben” [Lukas 1939: 120] < AA * \sqrt{nl} ~ * \sqrt{nw} l (?) “to weave (?)” [GT].

Ad SBE VII, #311. NBrb. * \sqrt{nly} (?) > *a-n(VI)li** “brain” [GT] > Shilh *a-nella* ~ *a-lleni* “cerveau” [Jordan 1934: 28, 37] | Tamazight *a-nuli*, pl. *a-nuli-t-n* ~ *a-lli-wn* “cerveau, cervelle” [Täifi 1991: 490], Ait Ndir *a-nli* “cerveau, cervelle” [LR], Izdeg *a-nuli*, pl. *i-nuli-t-en* ~ *i-nula* “cervelle” [Mercier 1937: 46], Zayan, Sgugu *a-nuli* “cervelle” [Loubignac 1924: 577] = Zayan *a-nli* “cerveau, cervelle” [LR] | Iznasen *a-lli* [assim. < **a-nli*] “cerveau, cervelle” [LR], Tamsaman *a-ži* [< **a-lli* < **a-nli*] “cerveau, cervelle” [LR] (NBrb.: LR 2002: 332) ||| Sem.: ES (from Agaw?): Geez *nālā* “brain, skull” [Leslau 1987: 398], Tigre *nāla* “cervello” [CR 1905: 224] = Amh., Tigre *nālā* “cerveau” [CR 1912: 238] = Tigre, Tna., Amh. *nala* “brain, skull” [Leslau] ||| Agaw (from ES?) **nal-* “brain” [GT].³² Qwara *nāl-ā* “Gehirn” [Flad**

S. Fraenkel (1886), the Neo-Hebrew and Arabic forms represent loans from Aramaic. Arguing that this family of words is only attested as verbal root in Aramaic (even there, it was possibly a denominative verb), B. Podolsky (1998: 200-201, §2) regarded it as “highly implausible” that the original Semitic word is only preserved in one single language and no genetic cognates are to be found elsewhere. In other words, we may not assume an underlying Sem. * \sqrt{nw} l. Instead, Podolsky suggests that the Aramaic word was borrowed from some Dravidian source (having reflexes like Tamil *nūl* “yarn, cotton thread”, Malayalam *nūlkka* “to spin”, Kota *nūl* “thread”, Kannada *nūl* “yarn, thread”) and that “the foreign name must have come to the Near East with a new type of loom” with reference to C. Beir stating that “a more complicated type of loom is the draw-loom, the origins of which are not clear, but this technology seems to have travelled westward to the Near East by Late Roman times”. A.Ju. Militarev (MM 1983: 255, so also in KB 600), in turn, saw in Ar. *nawl-* “ткацкий станок” a variety of the Sem. root * $\sqrt{nw/yr}$, cf. OAKk. *nīrum* “yoke, crosspiece” [Gelb 1973: 193] || Hbr. *mənōr-’orgīm* “weavers’ beam, cross-beam of the loom” [KB] = “der Weberbaum, um den der fertige Stoff gewickelt wird, der Querbaum des Rahmens” [GB 437], MAram. *nīr* IV “cross-beam of the loom, also the cross-rod under the cross-beam to which the ends of the leashes are fastened” [Jastrow 1950: 885] | Ar. *nīr-* “die Vorrichtung, durch die die Fäden des Aufzuges gehoben und gesenkt werden” [GB].

³¹ For the regular correlation of Eg. IIIae inf. roots with Sem. hollow ones with C₂ *-w- see Vycichl 1953.

³² To be distinguished from Agaw **ḡar-* (???) “brain, head” [GT] > Kemant *ḡar-a* ~ *nār-ā* “cerveau” [CR 1912: 238-239] = *nara* “brain” [Apl.] | Awngi (and Damot) *ḡar-i* “tête” [CR 1912: 238] = *ḡarí* “head” [Apl. 2006]. The interrelationship of the two Agaw etymons with *-l- vs. *-r- has not yet been satisfactorily explained. D. Appleyard (2006: 36) reconstructed for the -r- forms PA_{Agaw} **ḡat-a* “head” (including, in his view, irregular Kemant and Awngi reflexes with -l-) as a match of Bed. *mat* “crown of the head” and E_{Cu}. **math-* “head”, whereby he regarded the Hamta and Awngi reflexes with -l- as either loans from or as influenced by the ES word with -l-. On the other hand, Appleyard even alternatively surmised a reverse way of borrowing from Agaw into ES, whose -l- words “may have influenced in turn some of the Agaw originals”, which is little convincing, since then it

apud Reinisch 1885: 105], Hamta nil-ǎ “cervello” [CR 1905: 224] | Awngi nalí “brain” [Hetzron 1978: 136; Apl. 1994 MS: 14] || ECu.: Tsamay nol-o “brain” [Sava 2005 MS: 249] || (?)³³ Om.: cf. also Ongota nóolu “brain” [Fleming 1992: 191] || WCh.: (???) NBauchi *ndəl- [GT: nd- < *n-??] “brain” [Skinner 1977: 13] || (???) CCh.: PMandara-Matakam *√nš “brain” [GT: < **√nl??]³⁴ < AA *√nl “brain” [GT].

Berber *√nw-

Ad SBE VII, #315. EBrb.: Ghadames √nw: **ta-niw-īt, pl. tə-niw-īn** “mensonge”, ṣ-nīw-ət “mentir” [Lanfry 1973: 252, #1187] || Eg. nw “Unrecht” (MK, Wb II 217, 14) || Bed. nēw “beleidigen, schimpfen”, nēw ~ nēú “Beleidigung, Schimpf” [Reinisch 1895: 186] = nēu ~ new “to abuse, scold” [Roper 1928: 226] = nuw “to curse” [Hudson 1996 MS: 101] || WCh.: Ngizim nyùwáu “to slander, gossip about, blame” [Schuh 1981: 130] || CCh.: Zime-Batna náó “être méchant” [Sachnine] || ECh.: Mokilko náàwá “méchant, terrible” [Jng. 1990a: 144] (Ch.: CLD I = Stolbova 2005: 108, #371) < AA *√nw “to do/say wrong (?)” [GT].

Ad SBE VII, #316. SBrb. *ta-naw-t “handle of shield” [GT]: Ahaggar tā-naw-t “poignée de bouclier” [Foucauld 1951-2: 1395], Ayr tā-ñaw-t, pl. ti-ñaww-en & EWlmd. tə-ṇu-t “poignée de bouclier” [PAM 2003: 580, 631] || Sem. *naw-at- “handle of instrument” [GT]: Akk. (OAkk., YBab.) nātu “(Messer-, Sichel-)Griff (?)” [AHW 766] = (OAkk. nātum) “handle (of a knife)?” [Gelb 1973: 194] = “handle (?)” [CAD n2, 121]³⁵ || Ar.: attestation dubious³⁶ || ES: Tigre nəwe and Tna. nāwīt “plough-beam” [Leslau] = Tigray nāwwít “timone dell’aratro” [CR], Gurage: Chaha, Ezha, Selti, Wolane näwe, Zway nū^{wi}, Muher and Mäsqän nəbe [-b- < *-w-], Gogot nəbeyä “wooden part of the plough to which the iron is attached” [Leslau] (ES: Leslau 1979 III: 447; 1982: 57) || Eg. nw (wood det.) “handle of an adze” (late NK, DLE II 11 after Černý, its attestation in Ostr. Deir el-Medineh 105, 6 is disputed by Janssen 1975: 422) = “Holzgriff” (GHWb 397) || Bed. niu “plough-handle” [Ehret]

becomes difficult to explain the -l- in ES. Although I am unable to give a definite answer either, I find a further group of parallels of high interest that are also to be accounted for. First, the Agaw root (hardly with *-t-, but rather with *-r-) might be identified with LECu.: Oromo ñār-ō “marrow” [Gragg 1982: 301], which, besides, Ch. Ehret (1991: 264, #229) erroneously affiliated with Oromo ñār-ō “eyebrow” < ECu. *ṇār- (sic) “forehead”, which represents a distinct AA root, namely *√nyr ~ *√nhr “eyebrow” [GT] (attested in Eg., SBrb., Oromo, and Mokilko, cf. Takács 2005a: 21, #1.3, fn. 9). Secondly, the ES data with *-l- have parallels in ECu. and Ongota (listed above).

³³ Its classification within AA is still unsettled. In any case, it seems to stand closest to Om. (cf. Fleming et al. 1992).

³⁴ Attested in Mandara *nuš- “brain” [GT] > Dghwede (Zeghwana) nəš-tè [Kraft] = nšè [Mukarovsky], Guduf-G. nušà [Mukarovsky], Guduf-N. nəš-tè [Mukarovsky], Gava nušà [Kraft] (Mandara gr.: Kraft 1981: #37; Mukarovsky 1987: 108) | Mada énnéš “cerveau (organe et centre de la pensée)” [Brt.-Brunet 2000: 207]. The NBauchi-CCh. comparison is due to H.G. Mukarovsky (1987: 108).

³⁵ J. Huehnergard (1987: 150) accepted the proposal by Boyd (in a Ph.D. diss. from 1975) to compare OAkk. nātum with Ug. syll. [niʔtu], pl. [niʔātu] “type of tool”.

³⁶ The position of Yemeni Ar. nawḥ “Pflugsterz (plow-handle)” [Deboo 1989: 199] is obscure.

|| NAgaw (< ES): Kemant nuwī, pl. nū-kā “âge (sic) de la charrue” [CR 1912: 238]³⁷ || LECu.: Saho-Assaorta nawīti “aratro” [CR 1913: 73] (GT: originally < *timone dell’aratro?*) || CCh.: (???) Hitkala (Hide) nuča [< *nu-ta???) “poignée de houe” [Eguchi 1971: 222] < AA *√nw “handle of instrument” [GT]. The Eg.-Sem. parallel has already been identified by myself in my “Aegyptio-Afroasiatica XI” (Acta Orientalia Acad. Scient. Hung. 58/4, 2005, 409-420, #143).

Ad SBE VII, #314. Brb. *√nw [GT] > NBrb.: Wargla nñəwnəw “se plaindre par petits cris à la manière d’un bébé, geindre comme un chiot, de façon lamentable” [Delheure 1987: 229] || WBrb.: Zenaga a-naw “bruit”, e-nawi ~ e-néwi “son” [Basset 1909: 249] || Eg. nj “als Laut eines Kindes, das lebensfähig ist” (Med., Wb II 201, 10) = nj “Kinderschrei” (WD III 59 pace SAK 23, 1996, 154) || CCh.: Bura nya “describing the crying of an infant” [BED 1953: 166] < AA *√ny “to cry (of a child)” [GT]. Note that Sem.: Hbr. *nī- (cstr. from *nəhī-) “Klagegesang” [GB 502] represents a distinct root (< Sem. *√nhy).

449. SBrb.: Ayr ă-ŋwa (peu us.) and **Tadghaq ă-ŋqa** “(mon) frère” [PAM 2003: 632] || NOm.: Dizoid *nan-u “brother” [Bender 2003: 207, #21]³⁸ || WCh.: AS *non- ~ *nan- (?) combined with *-saw [GT 2004: 269]: Gerka non-so “to be equal” [Ftp. 1911: 216], Montol nan-sau “alike” (-sau obscure) [Ftp. 1911: 214].

Ad SBE VII, #320. SBrb.: Ayr ə-ŋwəy “tourner la tête en arrière pour éviter, faire demi-tour pour éviter”, a-ŋəway “demi-tour” [PAM 2003: 633] || Eg. nj.t “l’ovale (du monde)” (CT IV 60j, AL 78.1977 after AECT I 225, spell 306, n. 6: “meaning unknown”) = “oval, dung-ball” (DCT 201) vs. nw.t “vielleicht Mistkugel des Sonnenkäfers” (NK, Wb II 217, 9) = “1. (primär) die Mistkugel des Skarabäus (die einerseits als Sonnenscheibe, andererseits als Unterwelt gedeutet werden kann), 2. das Oval mit Sokar und der geflügelten Schlange” (Hornung 1963 II: 105) = “Oval” (GHWb 397) || WCh.: PGerka *nay (?) “ring” [Takács 2004: 266]: Gerka nai-ta “ring” (ta- “finger” < Angas-Sura *šār “hand”) [Ftp. 1911: 219] || ECh.: Gadang nā “préparer la boule” [JI 1990 MS: 12, #214] | Mubi nàá (f) “boule (de mil)” [Jng. 1990b MS] < AA *√nwy “to be/go/make round” [GT]. The (partial) reduplication of the same AA root might be preserved in Brb. “verbe primitif” *nunny (attested with diverse prefixes: q-, h-, k-, g-) < *√nny “rouler etc.” [NZ 2002: 367], cf. above for its further cognates pointing to an ancient reduplication inherited from PAA.

450. NBrb.: Izdeg √nw: **ta-nüi, pl. ti-nüy-win** “assemblage” [Mercier 1937: 25] || Sem.: Mandaean √nwA “to accomplish, achieve” [Drower & Macuch 1963: 293] | Ar. √nwy (nawā) II “3. accomplir, exécuter, atteindre ce que l’on se proposait” [BK II 1374] || Eg. √nwj “to gather together” (Grd. 1909: 115) = “to collect, assemble” (FD 127) = “to gather, assemble” (DLE II 11) = “versammeln usw.” (Fischer-Elfert 1986: 61, n. d; GHWb 398) =

³⁷ Ignoring its borrowed status, Ch. Ehret (1979: 174, §40) reconstructed PCu. *√nw “plough” from Bed. niu and Agaw *nuw-.

³⁸ Cf. Aroid *kan [Bender]?

“etwas (ein)sammeln” (Junge 1999: 353)³⁹ || ECh.: Mokilko néèwè “accueillir” [Jng. 1990a: 144] < AA *√nw̄y “1. to collect, 2. complete” [GT].

A root variety with *l- is also to be accounted for, cf. AA *√lw̄y “to assemble, collect” [GT] > Sem.: OHbr. √lw̄y nifal “to be joined onto” [Leslau 1958: 28], MHbr. √lw̄y “sich zu jemdm. gesellen, ihm angehören” [Levy 1924 II: 483], Epigraphic Aram. √lw̄y “соединяться, объединяться, примыкать, присоединяться” [SAN III 156] || MSA: Soqotri *√lw̄y: ló-te (refl.) “se réunir, se mettre d’accord” [Leslau 1938: 230] = lo-te “to come together” [Johnstone 1977: 86] || SCu.: Dahalo lāw- “to gather (fruits)” [EEN 1989: 42]⁴⁰ || ECh.: Kera léwé “sich nach und nach versammeln” [Ebert 1976: 78] | Somray lày “ramasser, recueillir” [Jng. 1993 MS: 41], Tumak lày “ramasser, rassembler” [Caprile 1975: 80], Sarwa làyàylà and Gadang lèy-ny “ramasser” [JI 1990 MS: 12, #217] | EDangla lèyē “rassembler le troupeau, encercler, enfermer” [DM 1973: 187], Mokilko lèwiyè “1. s’entasser, se rassembler, 2. entourer” [Jng. 1990a: 132].

Berber *√ny-

451. Brb. *√ny “monter” [GT pace Kossmann 1999: 191, #561] || CCh.: PBata *nay (?) “head” [GT]: Gude na [Mouchet] = nna [IL] = ná “1. head, 2. top”, a-nə “on (top of)” [Hoskison 1983: 246], Bata nāē (náāē?) [Strümpell 1910: 451] = ne [Strümpell apud JI] = ne [Mouchet] = ne, pl. nøyge [Boyd 2002: 57], Bata-Garwa nē and Bata-Demssa [Strümpell], Kobochi iinē [Strümpell], Bachama ne:, pl. nye:me [Carnochan 1975: 464, #47] = nē: [Skinner] = ne [Meek] (CCh.: Strümpell 1922-3: 113; JI 1994 II: 183). The underlying verbal root may be represented by NAA *√nw̄ “to r(a)ise” [GT]: Sem.: Ar. √nw̄? I: nāʔa “se lever avec peine” [BK II 1361],⁴¹ Dathina nwʔ: nāʔa “se lever (avec peine), être haut, s’élever, grandir, survenir, croître, grandir” [GD 2829]⁴² || Eg. nw̄ “to stir up, rouse” (NE, DLE II 11).

Ad SBE VII, #321. Brb. *√ny “new” [GT] = *(H)inay [Mlt. 1995] = *yVnay [Mlt. 2005] > e.g. WBrb.: Zenaga √ni “être neuf” [Nicolas 1953: 222] = inay “être nouveau” [Cohen & TC 2000: 310] || SBrb.: Udalan iynay “être nouveau, neuf, récent” [Prasse & Dicko 2002: 29] || Sem. *√ny? ~ *√nw̄? “raw, uncooked” [Mlt.] || Eg. nj “être en enfance, rajeunir” (CT VII 470a, AL 78.1976 after AECT III 196) = “*in der Kindheit sein, verjüngen” (GHWb 391) || WCh.: Galambu nyá “green, unripe” [Alio 1988a MS] || CCh.: Gisiga nawayá “new” [JI 1994 II: 255] < AA *√ny “to be fresh, new” [GT]. The Sem.-Brb.-Gisiga

³⁹ K.P. Kuhlmann’s (1991: 219) omnicomparatistic theory on Eg. √nw̄j is unacceptable. For a critical appraisal of the methods appearing in his and others’ similar Eg. “etymologies”, cf. Takács 2005b: 623ff.

⁴⁰ Indirectly, already Ch. Ehret (1995: 407, #830) has mentioned the link between Eg. nw̄j and the Dahalo root (replaced by his SCu. *lāw- “to take hold of”).

⁴¹ Derived by Ch. Ehret (1995: 334, #654) from his AA *-ṇaw̄y- “to rise, swell, expand” based on a number of semantically dubious or evidently false *comparanda*.

⁴² Compared by count Landberg (GD l.c.) with Eg. nw̄ “time” and even Eg. nwn̄.t “hour”, but this is semantically more than problematic.

etymology was first suggested by A.Ju. Militarev (in Starostin et al. 1995 MS: 21; Militarev 2005b: 371, #59). I only added the Eg. and further Ch. cognates.

452. NBrb. *√ny (?): Tamazight: uni “enfoncez, emboîter, faire entrer une chose dans une autre” [Taïfi 1991: 458]⁴³ || Eg. n^ow “pénétrer, s’accoupler” (late NK, AL 77.2005) = “(unknown)” (DLE II 8) = “durchdringen, sich paaren” (GHWb 395) || SCu.: Alagwa ni^o- “to copulate with” [Ehret],⁴⁴ Burunge ni^o-im “to have sexual intercourse” [KM] || CCh.: Puss (Munjuk) niyi “1. entrer, 2. faire l’amour” [Tourneux 1991: 108], Mulwi (Vulum) √ny: niyì “1. entrer, 2. faire l’amour” [Tourneux 1978: 304]⁴⁵ || ECh.: Kwang-Ngam òà:pe: [< *√ny^o?] “coucher avec femme, foquer” [Lenssen 1982: 110] < AA *√n^o “1. to enter, penetrate, 2. copulate” [GT]⁴⁶.

453. Brb. *ta-nyer-t (??) “front” [Kossmann] = *(t)a-nyar-(t) [GT] > EBrb.: Gdm. i-nar [Basset pace Mtl. 1904: 123] = ê-nar “front” [Lanfry], Siwa ne-nnier (mit Genitivexponent) “Stirn” [Scholz apud Stumme] = e-nnîr [Stumme 1914: 94-95, 104] = i-nîr “forehead” [Quibell 1918: 100] = i-nir “front” [Basset] || NBrb.: medieval Shilh a-yner “front” [van den Boogert] | Tamazight i-nir, pl. i-nr-eun “front” [Abès 1916: 123] = i-nir, pl. i-nir-n “front (anatomie)” [Taïfi 1991: 495] = Mzg. (Middle Atlas) a-yenyir ~ a-yenri (Izdeg) ~ i-nir [Taïfi], Ait Ndir i-nir [Basset], Ishqern ta-inər-t [Basset] | Seghrushen a-nyír, pl. i-nyar “front” [Destaing 1914: 140 and Pellat 1955: 122 > so also Kossmann], Rif ta-nyar-t [Renisio] = Rif: Boqqoyen, Ait Said ta-nyər-t [Basset pace Biarnay], Iznasen (along with Salah, Messaud) ti-nyər-t [Basset pace Destaing] = ta-niər-t, pl. ti-nir-iw-in [Renisio] = ta-nyer-t [Basset and Ksm.], Tamsaman and Boti-wa ta-inər-t [Basset], Ait S^oid ta-niar-t “front” [Biarnay] = √nj(r) > ta-nā-t “le front” [Allati 1986: 37], Amert a-inär [Renisio], Tuzin te-inar-in (pl.) [Renisio], Beni Snus ti-yyer-t [Destaing 1914: 142] = ti-yyər-t [Basset pace Destaing], Figig ta-nyer-t [Kossmann], Shenwa hi-nir-t, pl. hi-nyar ~ hi-nery-in [Laoust 1912: 149], Menacer ta-nyer-t and Metmata ti-nner-t [Destaing] = Menacer ta-nyər-t vs. Metmata ti-nnər-t [Basset pace Dst.], Shenwa t-nir-t [Basset pace Laoust], Zemmur and Halima ti-nər-t [Basset], Harawa tī-dnər-t [Basset pace R. Basset], Zkara ti-nyər-t [Basset pace Destaing], Beni Bou Oulli a-innər [Basset], Igeznayen a-ynar [Justinard > Basset], Mzab a-nray [Basset] etc. – all denoting “front” (Zenet: Destaing 1914: 142; data where the author is not indicated are from: Renisio 1932: 391) | Qabyle a-nyír “front” [Dallet], Zwawa a-nir ~ a-nir, pl. i-nir-en “front saillant” [Basset 1890: 326] = a-nir “front” [Biarnay 1917: 101] || WBrb.: Zanaga neur “front” [Masqueray 1879: 41] = ir [R. Basset] = nēr, pl. nērun “front” [Nicolas 1953: 230] = nēr [Nicolas quoted by Kossmann] = √nyr: ə-näyr “front”

⁴³ It would be tempting to etymologize this verb inside Berber, cf. also Tamazight a-na “unité (d’une paire, un des objets formant une paire)” [Taïfi 1991: 458], Izdeg a-na “paire (objets)” [Mercier 1937: 183], but the AA cognates above may convince us otherwise.

⁴⁴ Combined by Ch. Ehret (1980: 186) with Iraqw na^oani “penis” and Dahalo nyi^oanyi^oe “thick” < SCu. *ni^o- “to thicken”.

⁴⁵ O. Stolbova (CLD 99-100, #338) connected the CCh. root with ECh. *nVy- “to be(come) pregnant (animals)” under a common Ch. *nVy-/*nV̄- “to copulate”.

⁴⁶ Eventually, the underlying AA root may have primarily signified an excited rhythmical circular motion.

[TC 2008: 413] (Brb.: Kossmann 1999: 201-202, #604 pace Basset 1929: 19-22) || Sem.: Ar. *naḥr*- “the uppermost part of the breast or chest”, cf. *naḥīr*- “faced or fronted”, *nāḥīr*-(at)- “the parts facing, in front of” [Lane 2774-5] = *naḥr*- “2. clavicule et la partie du corps entre le bas du cou et le sternum, 3. vis-à-vis, 4. commencement”, cf. *naḥara* I “4. faire face, vis-à-vis à un autre (se dit, p.ex., d’une maison par rapport à une autre), 5. se tenir tout droit, le regard ditrigé du côté de la Mecque, et la main droite posée sur le revers de la main gauche”, VI “3. se faire face (se dit de deux maisons, etc.)” [BK II 1213] || LECu.: Saho *naḥār* “Brust” [Rn. 1890: 290] = *naḥār* (so, -ḥ-!) “1. petto, 2. (talora anche il senso di) cuore” [CR 1913: 73], Afar *naḥār* “Brust”, *naḥār*-a “Anfang, Beginn” [Rn. 1886: 889-890] = *nahar* “chest, front (poitrine, avant)” [PH 1985: 173] < AA **naḥr*- “front” [GT].

The same root is attested with metathesis in NBrb.: Uriaghel *ta-warna* [Renisio] = *ti-warna* [Kossmann], Iboqqoyen and Senhazha *ta-warna* [Renisio] = Iboqqoyen and Uriaghel *ta-urna* [Basset], Mzab *a-rnay* (sic) [Delheure] = *a-nray* (see above) [Basset] | Nefusa *a-rnay* [Basset] – all denoting “front” (Zenet: Renisio 1932: 391; NBrb.: Basset 1929: 19-20) < AA **√nrḥ* [GT], cf. the Egypto-Chadic stem **riN(h)*- “eyebrow” [GT] s.v. #433. above.

Following A. Basset’s (1929: 20) proposal, we may not rule out the ultimate connection of NBrb. *(t)a-*nyar*-(t) “front part” [GT] to SBrb. **a-nhar* “eyebrows, sourcil” [GT] || EBrb.: Ghadames *a-nḥer*, pl. *a-nḥar-en* [secondary -*b-* < **-h^w-?*] “cils” [Lanfry 1973: 233, #1081] (for the EBrb.-Twareg stem see #433. above) provided the sense “eyebrow” has evolved from “front part”.

Ad SBE VII, #326. Brb. *i-nīr “torch” </> (?) **√nyr* “to shine” [GT]: EBrb.: Ghadames *ī-nīr* “lampe de terre cuite en une ou deux pièces, la lampe des fêtes, scellée dans le mur du vestibule” [Lanfry 1973: 245, #1152] || NBrb.: Izdeg *niyer* “briller” [Mercier 1937: 39] | Mzab *nnir*, pl. *i-nnar-ən* “lampe (surtout à huile)” [Delheure 1984: 139: Ar. origin not indicated], Wargla *nir*, pl. *i-nnar-ən* ~ *i-nir-ən* “petite lampe à huile, à pétrole” [Delheure 1987: 224: Ar. origin not indicated], Sened *nir* “petite lampe à lampe” [Provotelle 1911: 120] | Nefusa *i-unir* “petite lampe à lampe” [Provotelle 1911: 120] || SBrb.: Ahaggar *e-nir*, pl. *i-nīr-en* “1. bougie, cierge, chandelle, lampe (en matière qcq., à un ou plusieurs becs, de la forme des lampes romaines antiques, destinée à contenir de l’huile et une ou plusieurs mèches), 2. p.ext.: lampe (qlconque, servant à éclairer par n’importe quel procédé, 3. la mèche des bougies, des vierges, du chandelles, ainsi que celles des lampes s’appelle tefetilt ...” [Foucauld 1951-2: 1399], Ghat *i-nir*, pl. *i-nir-en* “flambeau” [Nehliil 1909: 161] || Sem. **nawir*- “luminoso” [Fronzaroli 1965 III: 144, #3.07]: Oakk. *√n[?]r*: *naw(i)rum*, *namrum* “shining”, *ni(w)rum* “shine” [Gelb 1973: 192] > Akk. *naw/māru* “hell sein/werden, leuchten”, *nūru* “Licht, Helligkeit” [GB, AHW 768, 805] || Ug. *√nyr* “to shine” [Gordon 1955: 296, #1240] = *nr* < **√nyr* “leuchten” [WUS # 1850] = *nr* G “to shine”, L “to burn” [DUL 641-642], Hbr. *√nwr*: *nīr* I “Licht, Leuchte, bildlich vom Fortbestehn eines Geschlechtes”, *nēr* I “Leuchte, Lampe”, *mənōrāh* “Leuchter” [GB 494, 522, 437, resp.] | Ar. *nāra* “Leuchten” [GB] = *nayyir*- < **nawīr*- “luminoso” [Fronzaroli] || Geez *ʾanwara* “segno a fuoco” [Fronzaroli].

The AA cognates suggest a connection with the name of “fire”, cf. Sem. **√nwr*: Ug. *nr* “Feuer” [WUS #1849] = *nr* “luminoso” [Fronzaroli] = *nr* L stem “to burn” [DUL 641-2] |

JPArām. nwr “fire” [Sokoloff 1990: 345], Samar. Arām. nwr “fire” [Tal 2000: 512], Arām. of Talmud, Targum, Midrash nōrā “Feuer” [Dalman 1922: 266], Syriac nūrō “fuoco” [Fronzaroli], Mandaic nura “fire” [Drower & Macuch 1963: 294], Ma^llula nūra “1. Feuer(brand), 2. Hölle” [Bergsträsser 1921: 64] || OSA: Madhabi m-nwr-t “feu (?)” and Sabaic h-nr (caus.) “offrir un holocauste” [Arbach 1993: 79], Ar. nār- [√nwr] “1. feu, 2. marque imprimée sur la peau avec un fer rougi au feu” [BK II 1365] = “Feuer, Höllenfeuer” [WUS] || Geez nawer “Brandfleck” [WUS] (Sem. bicons. root: MM 1983: 186; Militarev 2005a: 99) || Eg. n3.w [< *nr.w] “fire (?)” (CT V 397a, VII 371h, DCT 200) = n3.w “fire (?)” (AECT II 103) = “fire” (AECT III 151) < NAA *√nr “fire” [GT].

No attestation with initial *n- known to me from SAA aside from ECh.: WDangla nyárúúikà “brûlure” [Fédry].⁴⁷ In the Chadic branch, we find reflexes displaying a shift of *√nwr > *√lw/yr, cf. CCh.: Mafa lāwār “brûler” (pour un feu qui brûle qqn.) [Brt.-Bléis 1990: 216] | Lele lōr “to burn” [Simons 1981: 37, #669] = lōr “brûler, incendier”, lōrē “brûlage”, cf. lērwē “chaleur, chaud” [WP 1982: 56, 58]. The Lele-Ar. parallel was first (independently from me) identified by O.V. Stolbova (CLD I 154, #615).

Ad SBE VII, #327. NBrb.: Qabyle √nyr: neyyer (hardly Ar.)⁴⁸ “continuer, poursuivre” [Dallet 1982: 588-9] || Eg. nr “to charge after” (XVIII., FD 134) = “stürmen” (GHWb 417)⁴⁹ || HECu.: Sidamo nara “to have a desire for, long for (esp. coffee, salt-beasts)” [Gasparini 1983: 245] || Ch. *nVr- “to hunt, search” [CLD I 144, #557] > WCh.: Saya nar “hunting” [Kraft] = naar “a hunt” [Cosper] || CCh.: Buduma nera “suchen” [Nachtigal apud Lukas 1939: 120] < AA *√nr “1. to search, 2. pursue” [GT].

454. Brb. *te-nErE “desert with scarce plants” [GT] > WBrb.: Zenaga √nyr: t-näyri^h “1. brousse, désert, vide” [TC 2008: 413 and fn. 773 comparing Ahaggar] || SBrb. *te-nere “desert” [GT]: Ahaggar té-néré, pl. ti-nâr-iouîn “1. plaine (étendue assez grande de terrain plat, sans montagne ni dune de sable), 2. p.ext.: plaine déserte non montagneux, désert (plat)” [Foucauld 1951-2: 1397], Ayr & EWlmd. te-ṇere, pl. EWlmd. šī- and Ayr ti-ṇar-iwen “plaine désertique, étendue assez vaste de terrain plat, sans montagnes ni végétation” [PAM 2003: 622] || Eg. n3w.t [-3- < regular < *-l/r-] “Art Pflanze”, in: jmj-n3w.t “als Bez. einer Schlange” (PT 238a, Wb II 200, 7) = “Pflanzenwort” (ÜKAPT VI 137) = “e. Gestrüpp (in dem Schlangen leben)” (GHWb 390) > n3j.t (in Mag. PTurin CG 54003, rt. 9, vs. 11, Roccati: 1st IMP,

⁴⁷ Ch. Ehret (1995: 328, #641) affiliated Sem. *nwr “to light, shine” with his SCu. *ṇûr- “fire, blaze” (reflexes unspecified) and Ch. *ṇurj “embers” > “some W/ECh.” *nurn “charcoal” (plausible, cf. below) to reconstruct his AA *-ṇiwr- “flames, firelight”. L. Kogan (2002: 195) was right in having declined the equation of Sem. *nī/ūr- “light (n.)” with CCh.: Logone nuur “light” < AA *nVwur- in the HSED 410, #1905 the Logone word being merely a late Arabic loan. O.V. Stolbova (CLD I 154, #615) reconstructed her Ch. *nyVr- “to burn (tr./intr.)” on the basis of ECh.: Lele reflex with l- (separate root var.) and WDangla nyârùwè “donner ou avoir ampoules” [Fédry] (semantically dubious) in comparison with Ar.-Hbr. *√nwr. Remarkable, however, is her Ch. *nVrV “ash, coal” [CLD I 147, #576], cf. also WCh. *ṇrj “ashes” [JS 1981]

⁴⁸ No Arabic root appears it might be explained from. BK II 1375 only has √nyr IV “2. appeler qqn. tout haut”.

⁴⁹ Compared by Ch. Ehret (1995: 333, #651) with Ar. √nrš “to reach for, take in one’s hand” and a certain ECU. *ṇawr- “to arrive, come up to” (one of Ehret’s ECU. reconstructions that are much less reliable than those proposed by H.-J. Sasse 1979), which semantically does not fit.

Borgouts: MK) “cespuglio” (Roccati 1970: 25, n. b: also in CT VII 952^{S14C}) = “bush (as habitat of the snake)” (Borghouts 1971: 91, fn. 136) = “buisson” (AL 78.1966). This NAA word may have originally denoted the sporadic shrubs scattered through of the vaste savannah areas of the desiccating/ed Sahara.

*

Abbreviations of languages and other terms

AA: Afro-Asiatic (Afrasian, Hamito-Semitic), Akk.: Akkadian, Amh.: Amhara/ic, Ar.: Arabic, Aram.: Aramaic, AS: Angas-Sura, Ass.: Assyrian, Bab.: Babylonian, Bed.: Bed'awye (Beja), Brb.: Berber (Libyo-Guanche), C: Central or Common, CAA: Common Afro-Asiatic, Can.: Canaanite, CCh.: Central, Ch.: Chadic, Cpt.: Coptic, CT: coffin texts, Cu.: Cushitic, Dem.: Demotic, E: East(ern), Eg.: Egyptian, ES: Ethio-Semitic, Eth.: Ethiopian, Eth.-Sem.: Ethio-Semitic, EWlmd.: East Tawllemmet, Gdm.: Ghadames, GR: Ptolemaic and Roman period, Hbr.: Hebrew, HECu.: Highland East Cushitic, Hgr.: Ahaggar, irreg.: irregular, JAram.: Jewish or Judeo-Aramaic, JNAram.: Jewish Neo-Aramaic, LECu.: Lowland East Cushitic, LEg.: Late Egyptian, LP: Late Period, M: Middle, MK: Middle Kingdom, Mzg.: Tamazight, N: New or North(ern), NAA: Northern Afro-Asiatic (common to Semitic, Egyptian and Berber), NE(g.): New/o-Egyptian, NK: New Kingdom, Nslm.: Taneslemt, O: Old, OK: Old Kingdom, Om.: Omotic, P: Proto-, PT: pyramid texts, reg.: regular, S: South, SAA: Southern Afro-Asiatic (common to Cushitic, Omotic and Chadic), Sem.: Semitic, Syr.: Syriac, Tna.: Tigrinya, W: West, (E)Wlmd.: (East) Tawllemmet, Y(Bab.): Young(er) (Babylonian), Zng.: Zenaga.

Abbreviations of author names

Abr.: Abraham, AJ: Alio & Jungraithmayr, Alb.: Albright, Alm.: Alemayehu, AM: Abdel-Massih, Apl.: Appleyard, BK: Bieberstein Kazimirsky, Brt.: Barreteau, CR: Conti Rossini, Dbr.: Djibrine, Dlg.: Dolgopolskij, DM: Djibrine & Montgolfier (in ECh.), Ebs.: Ebobisse, EEN: Ehret & Elderkin & Nurse, Fcd.: Foucauld, FH: Farah & Heck, Frj.: Frajzyngier, Frz.: Fronzaroli, Ftp.: Fitzpatrick, GB: Gesenius & Buhl, Grb.: Greenberg, Grd.: Gardiner, GT: Takacs, IL: Institute of Linguistics, JA: Jungraithmayr & Adams, JI: Jungraithmayr & Ibrizimow, Jng.: Jungraithmayr, Jns.: Johnstone, JS: Jungraithmayr & Shimizu, KB: Koehler & Baumgartner, KM: Kiesling & Mous, LR: Louali-Raynal, LS: Lamberti & Sottile, Mkr.: Mukarovsky, Mlt.: Militarev, MM: Majzel' & Militarev, MQK: Mous & Qorro & Kiesling, Msq.: Masqueray, Mtl.: Motylinski, Ncl.: Nicolas, Nct.: Nachtigal, NZ: Nait-Zerrad, OS: Orel & Stolbova, PAM: Prasse & Alojaly & Mohamed, PG: Pillinger & Galboran, PH: Parker & Hayward, Prh.: Porhomovskij, PW: Plazikowsky & Wagner, RB: Rapp & Benzig, Rn.: Reinisch, Rns.: Renisio, Srl.: Sirlinger, Stl.: Stolbova, TC: Taine-Cheikh, Trn.: Tourneux.

References

- AÄG = Edel, E. 1955. *Altägyptische Grammatik*. Roma: Pontificium Institutum Biblicum.
 Abdel-Massih, E.T. 1971. *A computerized lexicon of Tamazight. Berber dialect of Ayt Seghrouchen*. Ann Arbor: Center for Near Eastern and North African Studies, University of Michigan.
 Abès, M. 1916 (?). *Manuel de berbère marocain*. [Place & publisher not indicated].
 Abraham, R.C. 1962. *Dictionary of the Hausa language*.² London: University of London Press.
 Abraham, R.C. 1964. *Somali-English dictionary*.² London: University of London Press Ltd.
 AECT = Faulkner, R.O. 1973-1978. *The Ancient Egyptian Coffin Texts*. Vols. I-III. Warminster: Aris & Phillips Ltd.
 AEO I-II = Gardiner, A.H. 1947. *Ancient Egyptian onomastica*. Vols. I-II. Oxford: Clarendon Press.

- AEPT = Faulkner, R.O. 1969. *The Ancient Egyptian Pyramid Texts*. Vol. I. Oxford: Clarendon Press.
- AHW = Soden, W. von. 1965-1981. *Akkadisches Handwörterbuch*. Bde. I-III. Wiesbaden: Otto Harrassowitz.
- Ajello, R. & Karyo, M. & Melis, A. & Dobio, Ou. 2001. *Lexique comparatif de six langues tchadiques centrales (Gizey, Ham, Lew, Marba, Masa, Musey)*. Pisa: Edizioni Plus, Università di Pisa.
- Ajhenval'd, A.Ju. 1986. *Strukturno-tipologičeskaja klassifikacija berberskih jazykov: Material i metodika issledovanija. Imja. Mestoimenie*. Moskva: Nauka.
- AL I-III = Meeks, D. 1977-1979. *Année lexicographique: Égypte ancienne*. Tomes 1-3. 2^{ème} édition, 1998, Paris: Cybele.
- Albright, W.F. 1918. Notes on Egypto-Semitic etymology. II. *American Journal of Semitic Languages and Literatures* 34(4). 215-255.
- Albright, W.F. 1919. Notes on Assyrian lexicography and etymology. *Revue d'Assyriologie* 16(4). 173-194.
- ALC 1978 = Angas Language Committee (in Cooperation with Nigeria Bible Translation Trust). 1978. *Shàk nkary kè shàktok mwa nàñ Ngas. Ngas–Hausa–English dictionary with Appendix showing some features of Ngas grammar*. Jos, Nigeria: Nigeria Bible Translation Trust.
- Alio, Kh. 1988a (?). *Wordlist of Gàlèmbí*. MS.
- Alio, Kh. 1988b (?). *Wordlist of Maha*. MS.
- Alio, Kh. 1988c (?). *Wordlist of Ngamo*. MS.
- Alio, Kh. 2004. Préliminaires à une étude de la langue kajakse d' Am-Dam, de Toram du Salamaat, d'ubi du Guéra et de masmaje du Batha-est. In Takács, G. (ed.), *Egyptian and Semito-Hamitic (Afro-Asiatic) studies in memoriam Werner Vycichl*, 229-285. Leiden: E.J. Brill.
- Alio, Kh. & Jungrathmayr, H. 1989. *Lexique bidiya*. Frankfurt am Main: Vittorio Klostermann.
- Allati, A. 1986. *Phonétique et phonologie d'un parler amazigh du Nord-Est marocain (Le parler des Aït-Saïd)*. III. Université de Provence, Centre d'Aix-en-Provence. (Thèse de doctorat de 3^{ème} cycle. 4 p.)
- Allen, J.P. 2000. *Middle Egyptian: An introduction to the language and culture of hieroglyphs*. Cambridge: Cambridge University Press.
- Alojaly, Gh. 1980. *Lexique touareg-français*. Copenhague: Akademisk Forlag.
- Amborn, H. & Minker, G. & Sasse, H.-J. 1980. *Das Dullay: Materialien zu einer ostkuschitischen Sprachgruppe*. Berlin: Reimer Verlag.
- Appleyard, D. 1994. Preparing a comparative dictionary of Agaw. MS. (Paper presented at the III. Kuschitisten- und Omotistenkongress, Berlin, March 1994. 4 p.).
- Appleyard, D. 2006. *A comparative dictionary of the Agaw languages*. Köln: Rüdiger Köppe Verlag.
- Arbach, M. 1993. *Le maḍābīen: Lexique – onomastique et grammaire d'une langue de l'Arabie méridionale préislamique*. Tome I. *Lexique maḍābīen comparée aux lexiques sabéen, qatabānīte et ḥaḍramawītiq*. Université de Provence Aix Marseille I, Centre d'Aix, septembre 1993. 128 p. (Doctoral dissertation.)
- Assmann, J. 1977. *Das Grab der Mutirdis*. Mainz: Zabern.
- ÄWb I = Hannig, R. 2003. *Ägyptisches Wörterbuch I: Altes Reich und Erste Zwischenzeit* (Hannig-Lexica 4). Mainz am Rhein: Verlag Philipp von Zabern.
- ÄWb II = Hannig, R. 2006. *Ägyptisches Wörterbuch II: Mittleres Reich und Zweite Zwischenzeit*. I-II (Hannig-Lexica 5). Mainz am Rhein: Verlag Philipp von Zabern.
- Barguet, P. 1986. *Les textes des sarcophages égyptiens du Moyen Empire*. Paris: Les Éditions du Cerf.
- Barreteau, D. & Bléis, Y. 1990. *Lexique mafa: Langue de la famille tchadique parlée au Cameroun*. Paris: ORSTOM, Librairie Orientaliste Paul Geuthner.
- Barreteau, D. & Brunet, A. 2000. *Dictionnaire mada*. Berlin: Dietrich Reimer Verlag.
- Basset, A. 1892. *Étude sur la zenatia du Mزاب, de Ouargla et l'Oued Rir'*. Paris: Ernest Leroux.
- Basset, A. 1929. *Études de géographie linguistique en kabyle. (I. Sur quelques termes berbères concernant le corps humain)*. Paris: Librairie Ernest Leroux.
- Basset, R. 1883. Notes de lexicographie berbère. *Journal Asiatique*. Ser. VIII, vol. 1(3), 281-342.
- Basset, R. 1885. Notes de lexicographie berbère. *Journal Asiatique*. Ser. VIII, vol. 5, 148-198.
- Basset, R. 1887. Notes de lexicographie berbère. *Journal Asiatique*. Ser. VIII, vol. 10, 365-464.
- Basset, R. 1890. *Loqmān berbère avec quatre glossaires et une étude sur la légende de Loqmān*. Paris: Ernest Leroux.
- Basset, R. 1895. *Étude sur la Zenatia de l'Ouarsenis et du Maghreb Central*. Paris: Ernest Leroux.
- Basset, R. 1909. *Mission au Sénégal*. Tome I. *Étude sur le dialecte zenaga*. Paris: Ernest Leroux.
- BED = Anonymous. 1953. *Bura-English dictionary*. (Place & publisher not indicated. Master copy in the library of the Seminar für Afrikanische Sprachen und Kulturen der Universität Hamburg: inv. no.: 15 748 / JT 1526).

- Behnk, F. 1927. Lexikalische Beiträge zur ägyptisch-semitischen Sprachvergleichung. *Zeitschrift für Ägyptische Sprache* 62. 80-83.
- Belova, A.G. 1987. Struktura kornja v drevneegipetskom i semitskih jazykah. In Piłaszewicz, S. & Tulisow, J. (eds.), *Problemy języków Azji i Afryki*, 275-282. Warszawa: Wydawnictwo Polskiej Akademii Nauk
- Belova, A.G. 1989. Refleksy semitskih sibiljantov v drevneegipetskom. *Meroé* 4. 9-21.
- Belova, A.G. 1993. K voprosu o rekonstrukcii semitskogo kornevogo vokalizma. *Voprosy Jazykoznanija* 6. 28-56.
- Bender, M.L. 1971. The languages of Ethiopia: A new lexicostatistic classification and some problems of diffusion. *Anthropological Linguistics* 13(5). 165-288.
- Bender, M.L. 1988. Proto-Omotiic phonology and lexicon. In Bechhaus-Gerst, M. & Serzisko, F. (eds.), *Cushitic-Omotiic. Papers from the First International Symposium on Cushitic and Omotic Languages, Cologne, January 6-9, 1986*, 121-159. Hamburg: Helmut Buske Verlag.
- Bender, M.L. 2003. *Omotiic lexicon and phonology*. Carbondale: SIU Printing / Duplicating, Southern Illinois University.
- Bergsträsser, G. 1921. Glossar des neuaramäischen Dialekts von Ma'lūla. *Abhandlungen für die Kunde des Morgenlandes* 15(4). 1-123.
- Biarnay, S. 1917. *Étude sur les dialectes berbères du Rif: Lexique, textes et notes de phonétique*. Paris: Ernest Leroux.
- Biberstein Kazimirski, A. de. 1860. *Dictionnaire arabe-français*. Tomes I-II. Paris: Maisonneuve et C^{ie}.
- Bidoli, D. 1976. *Die Sprüche der Fangnetze in den altägyptischen Sargtexten*. Glückstadt: J.J. Augustin.
- Biella, J.C. 1982. *Dictionary of Old South Arabic*. Chico: Scholars Press at Harward.
- BiOr = *Bibliotheca Orientalis* (Leiden).
- Bitima, T. 2000. *A dictionary of Oromo technical terms: Oromo-English*. Köln: Rüdiger Köppe Verlag.
- Blažek, V. 2001. Review of EDE vol. I. *Archív Orientální* 69(3). 623-632.
- Blažek, V. 2002. Toward the Berber kinship terminology in the Afroasiatic perspective. In Naït-Zerrad, K. (ed.), *Articles de linguistique berbère: Mémoial Werner Vycichl*, 103-135. Paris: L'Harmattan.
- Blench, R.M. 2000. Types of language spread and their archaeological correlates: The example of Berber. MS, Cambridge. (Paper presented at a conference in Rome, 3-5 December 1998. Version printed out in Jan. 2000. 20 p.).
- Bomhard, A.R. 1984. *Toward Proto-Nostratic*. Amsterdam: John Benjamins.
- Borghouts, J.F. 1971. *The magical texts of the Papyrus Leiden I 348*. Leiden: E.J. Brill.
- Boulifa, S.A. 1913. *Méthode de langue kabyle: Cours de deuxième année. Étude linguistique et sociologique sur la Kabylie du Djurdjura: Texte zouaoua suivi d'un glossaire*. Alger: Adolphe Jourdan.
- Boyd, R. 2002. *Bata phonology: A reappraisal*. München: Lincom Europa.
- Brockelmann, C. 1928. *Lexicon syriacum*². Halle: Max Niemeyer.
- Brockelmann, C. 1932. Ägyptisch-semitische Etymologien. *Zeitschrift für Semitistik* 8. 97-117.
- Burquest, D.A. 1971. *A preliminary study of Angas phonology* (Studies in Nigerian Languages 1.) Zaria: Institute of Linguistics; Kano: Centre for the Study of Nigerian Languages.
- Bynon, J. 1984. Berber and Chadic: The lexical evidence. In Bynon, J. (ed.), *Current progress in Afro-Asiatic linguistics*, 241-290. Amsterdam – Philadelphia: John Benjamins.
- CAD = *The Assyrian dictionary of the University of Chicago*. Chicago, Glückstadt, since 1956-.
- Cañtuoli, C. 1983. *Lexique masa*. Paris: Agence de Coopération Culturelle et Technique.
- Calice, F. 1936. *Grundlagen der ägyptisch-semitischen Wortvergleichung*. Wien: Selbstverlag des Orientalischen Institutes der Universität Wien.
- Caprile, J.-P. 1975. *Lexique tumak-français (Tchad)*. Berlin: Verlag von Dietrich Reimer.
- Carnochan, J. 1975. Bachama and Chadic. In Bynon, J. & Bynon, Th. (eds.), *Hamito-Semitic*, 459-468. The Hague: Mouton.
- Cauville, S. 1987. Un préfixe p en égyptien? *Revue d'Égyptologie* 38. 183-184.
- CD = Crum, W.E. 1939. *A Coptic dictionary*. Oxford: Oxford University Press.
- CED = Černý, J. 1976. *Coptic etymological dictionary*. London, Cambridge: Cambridge University Press.
- Cerulli, E. 1938. *Studi etiopici*. III. *Il linguaggio dei Giangerò ed alcune lingue Sidama dell'Omo (Basketo, Ciara, Zaissè)*. Roma: Istituto per l'Oriente.
- Cerulli, E. 1951. *Studi etiopici* IV. *La lingua caffina*. Roma: Istituto per l'Oriente.
- Ceugney, C. 1880. Du rôle de m préfixe en égyptien. *Recueil de Travaux Relatifs à la Philologie et à la Archéologie Égyptiennes et Assyriennes* 2. 1-9.

- Chaker, S. 1986. Annar / Inurar, 'aire à battre' (linguistique). In *Encyclopédie berbère*, vol. III, 369-370. Aix-en-Provence: EDISUD.
- CLD I = Stolbova, O.V. 2005. *Chadic lexical database*. Issue I. L, N, NY, R. Kaluga: Poligrafiya.
- Cohen, M. 1947. *Essai comparatif sur le vocabulaire et la phonétique du chamito-sémitique*. Paris: Librairie Ancienne Honore Champion.
- Cohen, D. & Taine-Cheikh, C. 2000. À propos du zénaga: Vocalisme et morphologie verbale en berbère. *Bulletin de la Société de Linguistique de Paris* 95(1). 267-320.
- Colizza, G. 1887. *Linga 'Afar nel nord-est dell'Africa*. Wien: Alfred Hölder.
- Conti Rossini, C. 1905. Note sugli agau. 2. Appunti sulla lingua Awiyā del Danghelā. *Giornale della Società Asiatica Italiana* 18. 103-194.
- Conti Rossini, C. 1912. *La langue des Kemant en Abyssinie*. Wien: Alfred Hölder.
- Conti Rossini, C. 1913. *Schizzo del dialetto saho dell'alta Assaorta in Eritrea*. Roma: Tipografia della R. Accademia dei Lincei.
- CT = Buck, A. de. 1935-1961. *The Egyptian Coffin Texts*. Vols. I-VII. Chicago: The University of Chicago Press.
- Dallet, J.-M. 1982. *Dictionnaire qabyle-français: Parler des At Mangellat (Algerie)*. Paris: SELAF (Société d'études linguistiques et anthropologiques de France).
- Dalman, G.H. 1922. *Aramäisch-neuhebräisches Handwörterbuch zu Targum, Talmud und Midrasch*. Frankfurt a/M: J. Kaufmann Verlag.
- DCT = Molen, R. van der. 2000. *A hieroglyphic dictionary of Egyptian Coffin Texts*. Leiden: E.J. Brill.
- Deboo, J. 1989. *Jemenitisches Wörterbuch: Arabisch-Deutsch-Englisch*. Wiesbaden: Harrassowitz.
- DELC = Vycichl, W. 1983. *Dictionnaire étymologique de la langue copte*. Leuven: Peeters.
- Delheure, J. 1984. *Dictionnaire mozabite-français*. Paris: Société d'Études Linguistiques et Anthropologique de France (SELAF).
- Delheure, J. 1987. *Dictionnaire ouargli-français*. Paris: Société d'Études Linguistiques et Anthropologique de France (SELAF).
- Dendara I = Rochmonteix, Marquis de & Chassinat, E. 1932. *Le temple de Dendara*. Tome I. Le Caire: Imprimerie de l'IFAO.
- Dendara II-IV = Chassinat, E. 1934-35. *Le temple de Dendara*. Tomes II-IV. Le Caire: Imprimerie de l'IFAO.
- Dendara V = Chassinat, E. 1947-52. *Le temple de Dendara*. Tome V, fasc. 1-2. Le Caire: Imprimerie de l'IFAO.
- Dendara VI-VIII = Chassinat, E. & Daumas, F. 1965, 1972, 1978. *Le temple de Dendara*. Vol. VI, VII, VIII. Le Caire: Publications de l'Institut français d'Archéologie Orientale du Caire.
- Dendara IX = Daumas, F. (avec la collaboration de B. Lenthéric). 1987. *Le temple de Dendara*. Tome IX. Le Caire: Institut français d'Archéologie Orientale.
- Destaing, E. 1914. *Dictionnaire français-berbère (dialecte des Beni-Snous)*. Paris: Ernest Leroux.
- DG = Erichsen, W. 1954. *Demotisches Glossar*. Kopenhagen: Ejnar Munksgaard.
- Diyakal, Ph. 1997. *Mushere-English dictionary*. Collection of words carried out by Mr. Ph.I. Diyakal started on September 10th, 1997 under the supervision of Herrmann Jungraithmayr (Univ. of Frankfurt). MS. 390 p.
- D'jakonov, I.M. 1965. *Semitohamitskie jazyki: Opyt klassifikacii*. Moskva: Nauka.
- Djibrine, B.A.Z. & Montgolfier, P. de (etc.). 1973. *Vocabulaire dangaléat: Kawo danla*. (Place & publisher not indicated).
- DLE = Lesko, L.H. 1982, 1984, 1987, 1989. *A dictionary of Late Egyptian*. Vols. I-IV. Berkeley: B.C. Scribe Publications.
- DLU I = Olmo Lete, G. del & Sanmartín, J. 1996. *Diccionario de la lengua ugarítica*. Vol. I. [?](a/i/u)-l. Barcelona: Editorial AUSA.
- DLU II = Olmo Lete, G. del & Sanmartín, J. 2000. *Diccionario de la lengua ugarítica*. Vol. II. m-z. Barcelona: Editorial AUSA.
- DNWSI = Hoftijzer, J. & Jongeling, K. 1995. *Dictionary of North-West Semitic inscriptions*. Parts 1-2. Leiden: E.J. Brill.
- Dozy, R. 1881. *Suppléments aux dictionnaires arabes*. Tomes I-II. Leiden – Paris: E. J. Brill – Maisonneuve.
- DRB = Naït-Zerrad, K. Since 1998. *Dictionnaire des racines berbères (formes attestées)*. Paris & Louvain: Peeters. [Continuous pagination in the subsequent fascicles.]
- Drouin, J. 1979-1984. Nouveaux éléments de sociolinguistique touareg: Un parler meridional nigérien, la taməsəghlalt. *Comptes Rendus du Groupe Linguistique d'Études Chamito-Sémitiques* 24-28. 507-520.
- Drower, E.S. & Macuch, R. 1963. *A Mandaic dictionary*. Oxford: Clarendon Press.

- DRS = Cohen, D. *Dictionnaire des racines sémitiques ou attestées dans les langues sémitiques*. Fascicules 1-2 (1970-1976), Paris & La Haye: Mouton. Fascicule 3- (1993-): Leuven: Peeters. [With continuous pagination.]
- DUL = Olmo Lete, G. & Sanmartín, J. 2003. *A dictionary of the Ugaritic language in the alphabetic tradition*. Part One [ʔ(a/i/u)-k]. Part Two [-z]. Leiden: E.J. Brill.
- Düring, N. 1995. *Materialien zum Schiffbau im alten Ägypten*. Berlin: Achet Verlag N. Düring.
- Ebert, K.H. 1976. *Sprache und Tradition der Kera (Tschad)*. Teil II. Berlin: Dietrich Reimer.
- Ebobisse, C. 1979. *Die Morphologie des Verbs im Ost-Dangaleat (Guera, Tschad)*. Berlin: Dietrich Reimer Verlag.
- Ebobisse, C. 1987. *Les verbaux du dangaléat de l'est (Guera, Tchad): Lexiques français-dangaléat et allemand-dangaléat*. Berlin: Dietrich Reimer Verlag.
- Edel, E. 1955. *Altägyptische Grammatik*. Roma: Pontificium Institutum Biblicum. = AÄG
- Edfou I = Rochmonteix, Marquis de & Chassinat, E. 1897. *Le temple d'Edfou*. Tome I. Le Caire: Leroux.
- Edfou II-XIV = Chassinat, E. 1918, 1928-34. *Le temple d'Edfou*. Tomes II-XIV. Le Caire: Leroux.
- Edfou XV = Cauville, S. & Devauchelle, D. 1985. *Le temple d'Edfou*. Tome XV. Le Caire: IFAO.
- Eguchi, P.K. 1971. Matériaux pour servir à l'étude de la langue hidé: Vocabulaire. *Kyoto University African Studies* 6. 195-283.
- Ehret, Ch. 1974. *Ethiopians and East Africans: The problem of contacts*. Nairobi: East African Publishing House.
- Ehret, Ch. Around 1974. *Ma'a-English vocabulary*. MS. Los Angeles, California (dated in a p.c. by Ch. Ehret on 12 April 2000 to around 1979, although Ehret 1980: 390 dates it to 1966-1974). 82 p.
- Ehret, Ch. 1980. *The historical reconstruction of Southern Cushitic phonology and vocabulary*. Berlin: Dietrich Reimer Verlag.
- Ehret, Ch. 1987. Proto-Cushitic reconstruction. *Sprache und Geschichte in Afrika* 8. 7-180.
- Ehret, Ch. 1991. The consonant inventory of Proto-Eastern Cushitic. *Studies in African Linguistics* 22(3). 211-275.
- Ehret, Ch. 1995. *Reconstructing Proto-Afroasiatic (Proto-Afrasian): Vowels, tone, consonants, and vocabulary*. Berkeley – Los Angeles, California: University of California.
- Ehret, Ch. 2000. (Additions to the Afroasiatic reconstructions.) MS. Los Angeles, California. 585 p.
- Ehret, Ch. & Elderkin, E.D. & Nurse, D. 1989. Dahalo lexis and its sources. *Afrikanistische Arbeitspapiere* 18. 5-49.
- Farah, M.A. & Heck, D. 1993. *Somali Wörterbuch*. Hamburg: Helmut Buske Verlag.
- FÄW(b) = Kahl, J. 2002-2004. *Frühägyptisches Wörterbuch* (unter Mitarbeit von M. Bretschneider und B. Kneißler), Lieferung 1-4. Wiesbaden: Harrassowitz.
- FD = Faulkner, R.O. 1962. *A concise dictionary of Middle Egyptian*. Oxford: Clarendon Press.
- Fecht, G. 1960. *Wortakzent und Silbenstruktur: Untersuchungen zur Geschichte der ägyptischen Sprache*. Glückstadt: Verlag J.J. Augustin.
- Fédry, J. (avec la collaboration de Khamis, J. & o/Nedjei, M.). 1971. *Dictionnaire dangaleat (Tchad)*. Lyon: Afrique et Langage. (Thèse de 3^{ème} cycle, Institut National des Langues et Civilisations Orientales.)
- Fischer-Elfert, H.-W. 1986. *Die satirische Streitschrift des Papyrus Anastasi I: Übersetzung und Kommentar*. Wiesbaden: Harrassowitz.
- Fitzpatrick, J.F.J. 1910-1911. Some notes on the Kwolla District and its tribes. *Journal of the Royal African Society* 10. 16-52, 213-22.
- Fleming, H.C. 1987. Proto-Gongan consonant phonemes: Stage one. In Mukarovsky, H.G. (ed.), *Leo Reinisch: Werk und Erbe*, 141-159. Wien: Verlag der Österreichischen Akademie der Wissenschaften
- Fleming, H.C. 1990. *Hamar, recorded by Harold Fleming in 1990 from Awok'e Akike, Baldambi Son*. MS. 13 p.
- Fleming, H.C. (in collaboration with Aklilu Yilma & Mitiku, A. & Hayward, R. & Miyawaki, Y. & Mikesch, P. & Seelig, J.M.). 1992. Ongota (or) Birale: A moribund language of Gemu-Gofa (Ethiopia). *Journal of Afro-Asiatic Languages* 3(3) or 3. 181-225.
- Foot, E.C. 1913. *A Galla-English, English-Galla dictionary*. Cambridge: University Press.
- Foucauld, Ch. de. 1951-2. *Dictionnaire touareg-français, dialecte de l'Ahaggar*. Vols. I-IV. Paris: Imprimerie Nationale de France.
- Foulkes, H.D. 1915. *Angass manual: Grammar, vocabulary*. London: Kegan Paul, Trench, Trübner and Co.
- Fox, J. 1998. Isolated Nouns in the Semitic Languages. *Zeitschrift für Althebraistik* 11. 1-31.
- Fraenkel, S. 1886. *Die aramäischen Fremdwörter im Arabischen*. Leiden: E.J. Brill.
- Frajzyngier, Z. 1985. *A Pero-English and English-Pero vocabulary*. Berlin: Dietrich Reimer Verlag.
- Frajzyngier, Z. 1991. *A dictionary of Mupun*. Berlin: Dietrich Reimer Verlag.
- Fronzaroli, P. 1965. Studi sul lessico comune semitico. III. I fenomeni naturali. *Rendiconti delle Sedute dell'Accademia Nazionale dei Lincei. Classe di scienze morali, storiche e filologiche*. Ser. VIII, vol. XX, fasc. 3-4. 135-150.

- GAG = Soden, W. von. 1952. *Grundriss der akkadischen Grammatik*. Roma: Pontificium Institutum Biblicum.
- Gardiner, A.H. 1909. *The admonitions of an Egyptian sage from a hieratic papyrus in Leiden (Pap. Leiden 344 Recto)*. Leipzig: J.C. Hinrichs'sche Buchhandlung. 2. Nachdruck: Hildesheim – Zürich – New York: Georg Olms Verlag.
- Gardiner, A.H. 1911. *Egyptian hieratic texts*. Series I: *Literary texts of the New Kingdom*. Part I: *The Pap. Anastasi I and the Pap. Koller together with the parallel texts*. Leipzig: J.C. Hinrichs'sche Buchhandlung.
- Gasparini, A. 1983. *Sidamo-English dictionary*. Bologna: E.M.I.
- GÄSW = Calice, Graf F. von. 1936. *Grundlagen der ägyptisch-semitischen Wortvergleichung*. Wien: Selbstverlag des Orientalischen Institutes der Universität Wien.
- Gaudiche, (?). 1938. La langue boudouma. *Journal de la Société des Africanistes* 8. 13-32.
- GB = Gesenius, W. (bearbeitet von Buhl, F.). 1962. *Hebräisches und aramäisches Handwörterbuch über das Alte Testament*. Unveränderter Neudruck der 1915 erschienenen 17. Auflage. Berlin – Göttingen – Heidelberg: Springer-Verlag.
- GD = Landberg, Le Comte de. 1920, 1923, 1942. *Glossaire daïnois*. Tomes I-III. Leiden: E.J. Brill.
- Gelb, I. 1973. *Glossary of Old Akkadian*. Chicago, Illinois: The University of Chicago Press.
- GHWb = Hannig, R. 1995. *Grosses Handwörterbuch Ägyptisch-Deutsch (2800-950 v. Chr.)*. Mainz: Verlag Philipp von Zabern.
- Glanville, S.R.K. 1932. Records of a royal dockyard of the time of Thutmosis III. *Zeitschrift für Ägyptische Sprache* 68. 7-41.
- Gochal, G. 1994. *A look at Shik Ngas*. Jos: Jos University Press.
- Gordon, C.H. 1955. *Ugaritic manual*. Roma: Pontificium Institutum Biblicum.
- Gragg, G. 1982. *Oromo dictionary*. East Lansing, Michigan: Michigan State University.
- Greenberg, J.H. 1955. *Studies in African linguistic classification*. Branford, Connecticut: Compass Publishing Company.
- Greenberg, J.H. 1963. The languages of Africa. *International Journal of American Linguistics* 29.
- Hayward, D. (= R. J.). 1984. *The Arbore language: A first investigation including a vocabulary*. Hamburg: Helmut Buske Verlag.
- Hayward, R.J. 1978. The Qawko dialects and Yaaku. *Abbay* 9. 59-70.
- HCVA I-V = Diakonoff, I.M. & Belova, A.G. & Militarev, A.Ju. & Porhomovskij, V. Ja. & Stolbova, O.V. (only in part I). 1993-1997. Historical comparative vocabulary of Afrasian. Parts 1-5. *St. Petersburg Journal of African Studies* 2-6.
- Heine, B. 1975. Notes on the Yaaku language (Kenya). *Afrika und Übersee* 58(2). 119-138.
- Heine, B. 1978. The Sam languages: A history of Rendille, Boni and Somali. *Afroasiatic Linguistics* 6(2). 23-115.
- Heine, B. 1980. *The non-Bantu languages of Kenya*. Berlin: Reimer.
- Hellwig, B. 2000. *Goemai – English – Hausa dictionary*. MS. Draft. Printed out on 20 August 2000. 42 p.
- Hetzron, R. 1978. The nominal system of Awngi (Southern Agaw). *Bulletin of the School of Oriental and African Studies* 41. 121-141.
- Hintze, F. 1951. Zur hamitosemitischen Wortvergleichung. *Zeitschrift für Phonetik und Allgemeine Sprachwissenschaft* 5. 65-87.
- Hoch, J.E. 1994. *Semitic words in Egyptian texts of the New Kingdom and Third Intermediate Period*. Princeton: Princeton University Press.
- Hornung, E. 1963. *Das Amduat: Die Schrift des verborgenen Raumes nach Texten aus den Gräbern des Neuen Reiches*. Teil I: *Text*. Teil II: *Übersetzung und Kommentar*. Teil III: *Die Kurzgefassung*. Wiesbaden: Otto Harrassowitz.
- Hornung, E. (unter Mitarbeit von Brodbeck, A. & Staehelin, E.). 1979, 1980. *Das Buch von den Pforten des Jenseits: Nach den Versionen des Neuen Reiches*. Teil I: *Text*. Teil II: *Übersetzung und Kommentar*. Basel – Genève: Ägyptologisches Seminar der Universität Basel – Faculté des Lettres de l'Université de Genève.
- Hoskison, J.T. 1983. *A grammar and dictionary of the Gude language (Chadic)*. The Ohio State University. (Doctoral dissertation.)
- Houlihan, P.F. 1986. *The birds of Ancient Egypt: With the collaboration and a preliminary checklist to the birds of Egypt by Steven M. Goodman*. Warminster: Aris & Phillips.
- HSED = Orel, V.É. & Stolbova, O.V. 1995. *Hamito-Semitic etymological dictionary*. Leiden: E.J. Brill.
- Hudson, G. 1989. *Highland East Cushitic dictionary*. Hamburg: Buske.
- Hudson, R.A. 1996. *A dictionary of Beja*. Draft Printout. February 29, 1996. Version prepared by R.M. Blench.

- Huehnergard, J. 1987. *Ugaritic vocabulary in syllabic transcription* (Harvard Semitic Studies 32). Atlanta: Scholars Press.
- Huehnergard, J. 2000. Proto-Semitic language and culture. In *The American Heritage dictionary of the English language*, 2056-2068. Fourth Edition. Boston – New York: Houghton Mifflin Company.
- Huyghe, P.G. 1907. *Dictionnaire chaouïa-arabe-kabyle & français*. Alger: Typographie Adolphe Jourdan.
- IL = Institute of Linguistics. 1972. *Bauchi Area survey report presented by N. Campbell and J. Hoskison*. MS. Zaria.
- Isenberg, K. 1840. *A small vocabulary of the Dankali language, in three parts: Dankali and English, English and Dankali, and a selection of Dankali sentences with English translations*. London: Church Mission Society.
- Jacq, Ch. 1986. *Lexique des verbes de mouvement dans les textes des pyramides et les textes des sarcophages*. Paris: I.M.O., Recherches Égyptologiques.
- Janssen, J.J. 1975. *Commodity prices from the Ramessid period: An economic study of the village of Necropolis workmen at Thebes*. Leiden: E.J. Brill.
- JARCE = Journal of the American Research Center in Egypt.
- Jastrow, M. 1950. *A dictionary of the Targumim, the Talmud Babli and Yerushalmi, and the Midrashic literature*. Vol. I: א-ק, Vol. II: ל-ת. New York: Pardes Publishing House Inc.
- Johnstone, T.M. 1977. *Ḥarsūsi lexicon*. London: Oxford University Press.
- Johnstone, T.M. 1981. *Jibbālī lexicon*. London: Oxford University Press.
- Johnstone, T.M. 1987. *Mehri lexicon*. London: University of London.
- Jones, D. 1988. *A glossary of Ancient Egyptian nautical titles and terms*. London – New York: Kegan Paul.
- Jones, D. 2000. *An index of Ancient Egyptian titles, epithets and phrases of the Old Kingdom*. Vol. I. Oxford: Archaeopress, Publishers of the British Archaeological Reports.
- Jordan, A. 1934. *Dictionnaire berbère-français (dialectes tašelhait) contenant 6.025 formes*. Rabat: Éditions Omnia.
- Junge, F. 1999. *Einführung in die Grammatik des Neuägyptischen*. 2., verbesserte Auflage. Wiesbaden: Harrassowitz.
- Jungraihtmayr, H. 1961. Beobachtungen zur tschadohamitischen Sprache der Jegu (und Jonkor) von Abu Telfan (Republique du Tchad). *Afrika und Übersee* 45. 95-123.
- Jungraihtmayr, H. 1962a. *Wörterbuch der Angas-Sprache*. MS. Marburg.
- Jungraihtmayr, H. 1962b. *Wörterbuch der Goemay-Sprache*. MS.
- Jungraihtmayr, H. 1963. Die Sprache des Sura (Maghavul) in Nordnigerien. *Afrika und Übersee* 47. 8-89, 204-220.
- Jungraihtmayr, H. 1965. Materialien zur Kenntnis des Chip, Montol, Gerka und Burrum (Südplateau, Nordnigerien). *Afrika und Übersee* 48. 161-183.
- Jungraihtmayr, H. 1966. Die Laryngale ḥ und ʕ im Scha (Süd-Plateau, Nordnigerien). *Afrika und Übersee* 4. 169-173.
- Jungraihtmayr, H. 1970. *Die Ron-Sprachen. Tschadohamitische Studien in Nordnigerien*. Glückstadt: Verlag J.J. Augustin.
- Jungraihtmayr, H. 1971/1972. *Mulwi* (S. 1-13), *Masa* (S. 15-161). Wordlists. MS.
- Jungraihtmayr, H. 21 February 1978. *Mawa*. MS. 65 p.
- Jungraihtmayr, H. 1978a. Présentation d'un conte en sibine (sumray): Texte, notes et vocabulaire. In Jungraihtmayr, H. & Caprile, J.-P. (eds.), *Cinq textes tchadiques (Cameroun et Tchad). Présentation linguistique*, 177-211. Berlin: Dietrich Reimer Verlag.
- Jungraihtmayr, H. 1978b. *Wörterverzeichnis Französisch: Index Deutsch-Mawa. Index Französisch-Mawa*. MS. 49 p.
- Jungraihtmayr, H. 1990a. *Lexique mokilko*. Berlin: Dietrich Reimer Verlag.
- Jungraihtmayr, H. 1990b. *Lexique mubi-français (Tchad oriental)*. MS. Frankfurt a/M. 50 p.
- Jungraihtmayr, H. (in collaboration with N.A. Galadima and U. Kleinwillinghöfer). 1991. *A dictionary of the Tangale language (Kaltungo, Northern Nigeria) with a grammatical introduction*. Berlin: Dietrich Reimer Verlag.
- Jungraihtmayr, H. 1993. *Lexique sibine (sumray)-français*. MS. Frankfurt a/M, versions of 20 April 1993 (ʔa-bákügōmī), 7 June 1993 (bālāwrāḡ-gōndārā), 17 June 1993 (gōnīny-sārā), 7 June 1993 (sār-ʔywwāl). 67 p.
- Jungraihtmayr, H. & Adams, A. 1992. *Lexique migama*. Berlin: Dietrich Reimer Verlag.
- Jungraihtmayr, H. & Ibriszimow, D. 1994. *Chadic lexical roots*. Vol. I. *Tentative reconstruction, grading, distribution and comments*. Vol. II. *Documentation*. Berlin: Dietrich Reimer Verlag.
- Jungraihtmayr, H. & Shimizu, K. 1981. *Chadic lexical roots*. Vol. II. *Tentative reconstruction, grading and distribution*. Berlin: Verlag von Dietrich Reimer.
- Justinard, (?). 1914. *Manuel de berbère marocain (dialecte chleuh)*. Paris: Librairie Orientaliste Paul Geuthner.
- Kees, H. 1942. *Bemerkungen zum Tieropfer der Ägypter und seiner Symbolik*. Göttingen: Vandenhoeck & Ruprecht.
- Keimer, L. 1957. Notes de lecture (suite). *Bulletin de l'Institut Français d'Archéologie Orientale* 56(1). 97-102.

- KHW = Westendorf, W. 1977. *Koptisches Handwörterbuch*. Heidelberg: Carl Winter Universitätsverlag.
- Kidda, M.E. 1985. *Tangale phonology: A descriptive analysis*. Urbana, Illinois: University of Illinois at Urbana-Champaign. (Doctoral dissertation.)
- Kießling, R. & Mous, M. 2004. *The lexical reconstruction of West-Rift Southern Cushitic* (Kuschitische Sprachstudien 21). Köln: Rüdiger Köppe Verlag.
- Klasens, A. 1952. *A magical statue base (Socle Behague) in the Museum of Antiquities of Leiden*. Leiden: Rijksmuseum van Oudheden te Leiden & Brill.
- Kossmann, M. 1999. *Essai sur la phonologie du proto-berbère*. Köln: Rüdiger Köppe Verlag.
- Kraft, Ch.H. 1981. *Chadic wordlists*. I-III. Berlin: Dietrich Reimer Verlag.
- Kuhlmann, K.P. 1991. Die Stadt ([njw.t]) als Sinnbild der Nachbarschaft. *MDAIK* 47. 217-226.
- KWbÄ = Helck, W. & Otto, E. 1956. *Kleines Wörterbuch der Ägyptologie*. Wiesbaden: Otto Harrassowitz.
- LÄ = Helck, W. & Westendorf, W. (Hrsg., begründet von W. Helck und E. Otto). 1975-1992. *Lexikon der Ägyptologie*. Bde. I-VII. Wiesbaden: Harrassowitz.
- Labat, R. 1976. *Manuel d'épigraphie akkadienne*.⁵ Paris: Librairie Orientaliste Paul Geuthner.
- Lamberti, M. & Sottile, R. 1997. *The Wolaytta language*. Köln: Rüdiger Köppe Verlag.
- Lane, E.W. 1863-1893. *An Arabic-English lexicon*. Vols. I-VIII. London – Edinburgh: Williams and Norgate.
- Lanfry, J. 1973. *Ghadames*. II. *Glossaire*. Alger: Le Fichier Periodique.
- Laoust, E. 1931. *Siwa*. I. *Son parler*. Paris: Librairie Ernest Leroux.
- Laoust, E. 1942. *Contribution à une étude de la toponymie du Haut Atlas*. Paris: Paul Geuthner.
- Lefébvre, G. 1955. *Grammaire de l'égyptien classique*.² Le Caire: Institut Français d'Archéologie Orientale, Le Caire.
- Leger, R. 1993. Die Geschichte der Kwami nach einer Erzählung von Yerma Buba mit grammatischen Erläuterungen. *Mitteilungen des Sonderforschungsbereichs* 268. 143-177.
- Lenssen, T. 1982. *Das Verb im Kwang (Tschad): Eine phonologische Studie*. Marburg: Philipps-Universität Marburg. (M.A. thesis.)
- Leslau, W. 1938. *Lexique soqotri (sudarabique moderne), avec comparaisons et explications étymologiques*. Paris: Librairie C. Klincksieck.
- Leslau, W. 1958. *Ethiopic and South Arabic contributions to the Hebrew lexicon*. Berkeley – Los Angeles: University of California.
- Leslau, W. 1959. *A dictionary of Moča (Southwestern Ethiopia)*. Berkeley – Los Angeles: University of California Press.
- Leslau, W. 1962. Southwest Semitic cognates to the Akkadian vocabulary. I. *Journal of the American Oriental Society* 82. 1-4.
- Leslau, W. 1963. *Etymological dictionary of Harari*. Berkeley, Los Angeles: University of California.
- Leslau, W. 1979. *Etymological dictionary of Gurage (Ethiopic)*. Vol. III. *Etymological Section*. Wiesbaden: Otto Harrassowitz.
- Leslau, W. 1987. *Comparative dictionary of Ge'ez (Classical Ethiopic)*. Wiesbaden: Otto Harrassowitz.
- Leslau, W. 1988. Analysis of the Ge'ez vocabulary: Ge'ez and Cushitic. *Rassegna di Studi Etiopici* 32. 59-109.
- Levy, J. 1924. *Wörterbuch über die Talmudim und Midraschim nebst Beiträgen von Heinrich Leberecht Fleischer*. Zweite Auflage mit Nachträgen und Berichtigungen von Lazarus Goldschmidt. Bde. I-IV. Berlin & Wien: Benjamin Harz Verlag.
- LEW = Walde, A. 1938-1956. *Lateinisches etymologisches Wörterbuch*. 3., neubearbeitete Auflage von Hofmann, J.B. Bde. I-III. Heidelberg: Carl Winter Universitätsverlag.
- Lippert, J. 1906. Über die Stellung der Haussasprache unter den afrikanischen Sprachgruppen. *Mitteilungen des Seminars für Orientalische Sprachen der Königl. Friedrich-Wilhelms-Universität zu Berlin* 9(3). 334-344.
- Littmann, E. & Höfner, M. 1956. *Wörterbuch der Tigre-Sprache: Tigre-Deutsch-Englisch*. Wiesbaden: Franz Steiner Verlag.
- Loret, V. 1904. Une hypothèse au sujet de la vocalisation égyptienne. *Proceedings of the Society of Biblical Archaeology* 26. 227-234, 269-275.
- Louali-Raynal, N. 2002. Les mutations du l et du r pan-berbères. In Naït-Zerrad, K. (ed.), *Articles de linguistique berbère: Méorial Werner Vycichl*, 301-334. Paris: L'Harmattan.
- Loubignac, V. 1924. *Étude sur le dialecte berbère des Zaïan et Aït Sgougou. Textes (deuxième section)*. Paris: Ernest Leroux.
- Lukas, J. 1937. Zentralsudanische Studien. *Abhandlungen aus dem Gebiet der Auslandskunde*, Hansische Universität, Reihe B, Band 45/24.

- Lukas, Johannes. 1939. *Die Sprache des Buduma in Zentralen Sudan* (Abhandlungen für die Kunde des Morgenlandes 24/2). Leipzig: F.A. Brockhaus.
- Lukas, J. 1964. Das Hitkalanci, eine Sprache um Gwoza (Nordostnigerien). *Afrika und Übersee* 48. 81-114.
- Lukas, J. 1966. Tschadohamitische Sprachproben aus Nordnigerien (Karekare- und Bolanci-Texte). In Lukas, J. (ed.), *Neue afrikanistische Studien*, 173-207. Hamburg: Deutsches Institut für Afrika-Forschung.
- Lukas, J. 1977. Tschadische Studien I. Beiträge zur Kenntnis des Mokulu. *Afrika und Übersee* 60. 1-58, 182-229.
- Majzel', S.S. (additions by and edited by Militarev, A.Ju.). 1983. *Puti razvitija kornevogo fonda semitskih jazykov*. Moskva: Nauka.
- Masqueray, E. 1879. Comparaison d'un vocabulaire du dialecte des Zenaga avec les vocabulaires correspondants des dialectes des Chawiya et des Beni Mzab. *Archives des Missions Scientifiques et Littéraires*, 3ème série, tome 5ème. 483-533.
- Matsushita, Sh. 1972. *An outline of Gwandara phonemics and Gwandara-English vocabulary*. Tokyo: Tokyo Press.
- Meinhof, C. 1906. Linguistische Studien in Ostafrika. Fortsetzung. *Mitteilungen des Seminars für Orientalische Sprachen* 9. 278-333.
- Mercier, H. 1937. *Vocabulaires et textes berbères dans le dialecte des Ait Izdeg*. Rabat: René Céré.
- Militarev, A.Ju. 1984. Sovremennoe sravnitel'no-istoričeskoe afrazijskoe jazykoznanie: Čto ono možet dat' istoričeskoj nauke? In *Lingvističeskaja rekonstrukcija i drevnejšaja istorija Vostoka*, čast' 3, 3-26. Moskva: Nauka.
- Militarev, A.Ju. 1988. Tamâhaq Tuaregs in the Canary Islands (Linguistic evidence). *Aula Orientalis* 6. 195-209.
- Militarev, A.Ju. 1991. Istoričeskaja fonetika i leksika livijsko-guančskih jazykov. In Solncev, V.M. (ed.), *Jazyki Azii i Afriki*. IV, kniga 2, 238-267. Moskva: Glavnaja Redakcija Vostočnoj Literatury.
- Militarev, A.Ju. 2005a. Once more about glottochronology and the comparative method: The Omotic-Afrasian case. In *Orientalia et Classica. Trudy Instituta Vostočnyh Kul'tur i Antičnosti*. Vypusk VI, 339-408. Moskva: Rossijskij Gosudarstvennyj Gumanitarnyj Universitet.
- Militarev, A.Ju. 2005b. Root extension and root formation in Semitic and Afrasian. *Aula Orientalis* 23. 83-129.
- Militarev, A.Ju. 2010. *The Jewish Conundrum in World History*. Boston: Academic Studies Press.
- Möller, Georg. 1924. Die Ägypter und ihre libyschen Nachbarn. *Zeitschrift der Deutschen Morgenländischen Gesellschaft* 78. 36-60.
- Motyliniski, A. de Calassanti-M. 1898. *Le Djebel Nefousa: Transcription, traduction française et notes avec une étude grammaticale*. Paris: Ernest Leroux, Éditeur.
- Motyliniski, A. de Calassanti-M. 1904. *Le dialecte berbère de R'edamès*. Paris: Ernest Leroux.
- Mous, M. & Qorro, M. & Kießling, R. 2002. *Iraqw-English dictionary with an English and a thesaurus index*. Köln: Rüdiger Köppe Verlag.
- Mukarovskij, H.G. 1987. *Mande-Chadic common stock: A study of phonological and lexical evidence*. Wien: Afro-Pub.
- MWNR = Helck, W. 1960-1969. *Materialien zur Wirtschaftsgeschichte des Neuen Reiches*. Teil II. Akademie der Wissenschaften und der Literatur, *Abhandlungen der Geistes- und Sozialwissenschaftlichen Klasse* 11 (1960). Teil III: 2 (1963). Teil IV: 3 (1963). Teil V: 4 (1964). Teil VI: 4 (1969). With continuous pagination.
- Naït-Zerrad, K. 2001. Review of Kossmann, M.: Essai sur la phonologie du proto-berbère. *Frankfurter Afrikanistische Blätter* 13. 185-191.
- Naït-Zerrad, K. 2002. Les préfixes expressifs en berbère.? In Naït-Zerrad, K. (éd.), *Articles de linguistique berbère: Mémoial Werner Vycichl*, 349-372. Paris: L'Harmattan.
- NBÄ = Osing, J. 1976. *Die Nominalbildung des Ägyptischen*. Bde. I-II. Mainz/Rhein: Verlag Philipp von Zabern.
- Nehlil, (first name unavailable). 1909. *Étude sur le dialecte de Ghat*. Paris: Éditions Ernest Leroux.
- Netting, R.M. 1967. *Kofyar Vocabulary*. MS.
- Newman, P. 1970. Historical sound laws in Hausa and Dera (Kanakuru). *Journal of West African Languages* 7(1). 39-51.
- Newman, P. 1974. *The Kanakuru language*. Leeds: The Institute of Modern English Language Studies, University of Leeds in association with The West African Linguistic Society.
- Newman, P. 1977. Chadic classification and reconstructions. *Afroasiatic Linguistics* 5(1). 1-42.
- Newman, P. & Ma, R. 1966. Comparative Chadic: Phonology and lexicon. *Journal of African Languages* 5(3). 218-251.
- Nicolas, F. 1953. *La langue berbère de Mauritanie*. Dakar: Institut Français d'Afrique Noire.

- Nicolas, F. 1950. *Tamesna: Les Ioullemmeden de l'Est ou Touâreg "Kel Dinnîk". Cercle de T'âwa – Colonie du Niger: Notes de linguistique et d'ethnographie berbères. Dialectes de la Tamâžžq-Taullâmét.* Paris: Imprimerie Nationale.
- Nicolas, F. 1957. Vocabulaires ethnographiques de la Tamâjeq des Iullemmeden de l'est (Touâreg de la Colonie du Niger, Afrique Occidentale Française). *Anthropos* 52. 49-63, 564-580.
- Oomen, A. 1981. Gender and plurality in Rendille. *Afroasiatic Linguistics* 8(1). 35-75.
- Orel, V.É. & Stolbova, O.V. 1989. Čadsko-egipetskie izoglossy v oblasti kul'turnoj leksiki. In *Lingvističeskaja rekonstrukcija i drevnejšaja istorija Vostoka*, časť 1, 131-136. Moskva: Nauka.
- Orel, V.É. & Stolbova, O.V. 1990. K rekonstrukcii praafrazijskogo vokalizma. 3-4. *Voprosy Jazykoznanija* 2. 75-90.
- Ormsby, G. 1912-1913 & 1913-1914. Notes on the Angass language. *Journal of the Royal African Society* 12 (1912-1913). 421-424 & 13 (1913-1914). 54-61, 204-210, 313-315.
- Osing, J. 1998. *Hieratische Papyri aus Tebtunis I. Text.* Copenhagen: Museum Tusulanum Press.
- Osing, J. 2000. Zum Lautwert von [d] und [d]. *Lingua Aegyptia* 9. 165-178.
- Osing, J. 2001. Review of Takács, G.: Etymological dictionary of Egyptian, Vol. I. *Bibliotheca Orientalis* 58(5-6). 565-581.
- Panova, N.S. & Dolgopol'skij, A.B. & Porhomovskij, V.Ja. 1972. Central'nočadskie fonemy i étimologija central'nočadskih kornej v svete dannyh vnešnego sravnenija. In *Konferencija po sravnitel'no-istoričeskoj grammatike indoevropskih jazykov (12-14 dekabnja 1972 g.)*. *Predvaritel'nye materialy*, 64-65. Moskva: Nauka.
- Parker, E.M. & Hayward, R.J. 1985. *An Afar-English-French dictionary (with grammatical notes in English)*. London: School of Oriental and African Studies, University of London.
- Pellat, Ch. 1955. *Textes berbères dans le parler des Aït Seghrouchen de la Moulouya*. Paris: Éditions Larose.
- Piamenta, M. 1990-1991. *Dictionary of post-Classical Yemeni Arabic*. Vols. I-II. Leiden: Brill.
- Pillinger, S. & Galboran, L. 1999. *A Rendille dictionary*. Köln: Rüdiger Köppe Verlag.
- Plazikowsky, H. & Wagner, E. 1953. Studien zur Sprache der Irob. *Zeitschrift der Deutschen Morgenländischen Gesellschaft* 53. 378-393.
- Porhomovskij, V.Ja. 1972. *Istoričeskij konsonantizm jazykov kotoko*. Moskva: Institut Jazykoznanija Akademii Nauk SSSR.
- Porhomovskij, V.Ja. 1977. Dental'nye smyčnye jazykah kotoko (opyt rekonstrukcii). In *Jazyki zarubežnogo Vostoka: Sbornik statej*, 105-110. Moskva: Nauka.
- Posener-Kriéger, P. 1976. *Les archives du temple funéraire de Néferirkarê-Kakaï (Les papyrus d'Abousir)*. I-II: *Traductions et commentaire*. Le Caire: IFAO.
- Prasse, K.-G. 1969. *A propos de l'origine de h touareg (tahaggart)*. Det Kongelige Danske Videnskaberne Selskab. *Historisk-filosofiske Meddelelser* 43(3).
- Prasse, K.-G. 1974. *Manuel de grammaire touaregue*. IV-V. *Nom*. Copenhagen: Akademisk Forlag.
- Prasse, K.-G. & Alojaly, Gh. & Mohamed, Gh. 2003. *Dictionnaire touareg-français (Niger)*. Copenhagen: Museum Tusulanum Press, University of Copenhagen.
- Prasse, K.-G. & Dicko, A.D. 2002. Renseignements sur le touareg des Udalan (Burkina Faso). *Acta Orientalia* 63. 7-30.
- Provotelle, (first name unavailable). 1911. *Étude sur la tamazir't ou zénatia de Qalaât es-Sened (Tunisie)*. Paris: Ernest Leroux.
- PT = Sethe, K. 1908, 1910. *Die altägyptischen Pyramidentexte*. Bde. I-II. Leipzig: J.C. Hinrichs'sche Buchhandlung.
- Pweddton, N.N. 2000. *Bwatiye-English dictionary with English-Bwatiye index*. Ed. by N. Skinner. Madison, Wisconsin: Dr. Nicholas Pweddton.
- Quibell, J.E. 1918. A visit to Siwa. *Annales du Service des Antiquités de l'Égypte* 18. 78-112.
- RdE = *Revue d'Égyptologie* (Paris).
- Reinisch, L. 1885. Die Quarasprache in Abessinien. II. Quarisch-deutsches Wörterbuch. *Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften. Phil.-hist. Classe* 109(1). 3-152.
- Reinisch, L. 1886. Die ᵉAfar-Sprache. II. *Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften. Phil.-hist. Classe* 113(2). 795-916.
- Reinisch, L. 1887. *Wörterbuch der Bilin-Sprache*. Wien: Alfred Hoelder.
- Reinisch, L. 1888. Die Kafa-Sprache in Nordost-Afrika. II. Kafa-Deutsches Wörterbuch. *Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften. Phil.-Hist. Classe* 116. 251-386.
- Reinisch, L. 1890. *Wörterbuch der Saho-Sprache*. Wien: Alfred Hölder.
- Reinisch, L. 1895. *Wörterbuch der Bedawye-Sprache*. Wien: Alfred Hölder Verlag.

- Reinisch, L. 1902. *Die Somali-Sprache*. Bd. II. *Wörterbuch*. Wien: Alfred Hölder Verlag.
- Renisio, A. 1932. *Étude sur les dialectes berbères des Beni Iznassen, du Rif et des Senhaja de Sraïr: Grammaire, textes et lexique*. Paris: Éditions Ernest Leroux.
- Roccati, A. 1970. *Papiro ieratico N.54003: Estratti magici e rituali del Primo Medio Regno*. Torino: Edizioni d'Arte Fratelli Pozzo.
- Roper, E.-M. 1928. *Tu Beḍawīe: An elementary handbook for the use of Sudan government officials*. Hertford: Stephen Austin & Sons.
- Rossing, M.O. 1978. *Mafa-Mada: A comparative study of Chadic languages in North Cameroun*. Wisconsin: University of Wisconsin-Madison. (Doctoral dissertation.)
- RT = *Recueil de Travaux Relatifs à la Philologie et à l'Archéologie Égyptiennes et Assyriennes* (Paris).
- Sabar, Y. 2002. *A Jewish Neo-Aramaic dictionary: Dialects from Amidya, Dihok, Nerwa and Zakho, Northwestern Iraq*. Wiesbaden: Harrassowitz.
- SAK = *Studien zur Altägyptischen Kultur* (Hamburg).
- SAN I-V = Vinnikov, I.N. 1958-1965. *Slovar' aramejskih nadpisej*. Part I: ?-d.= *Palestinskij Sbornik* 66 (1958), 171-216. Part II: h-y.= *Palestinskij Sbornik* 70 (1962), 196-237. Part III: k-l.= *Palestinskij Sbornik* 72 (1962), 141-160. Part IV: m-^o.= *Palestinskij Sbornik* 74 (1964), 189-234. Part V: p-t.= *Palestinskij Sbornik* 76 (1965), 217-262.
- Sasse, H.-J. 1979. The consonant phonemes of Proto-East-Cushitic (PEC). *Afroasiatic Linguistics* 7(1). 1-67.
- Sasse, H.-J. 1982. *An etymological dictionary of Burji*. Hamburg: Helmut Buske Verlag.
- Satzinger, H. 1994. Das ägyptische «Aleph»-Phonem. In Bietak, M. & Holaubek, J. & Mukarovsky, H. & Satzinger, H. (eds.), *Zwischen den beiden Ewigkeiten: Festschrift Gertrud Thausing*, 191-205. Wien: Eigenverlag des Institutes für Ägyptologie der Universität Wien.
- Savà, G. 2005. *English-Ts'amakko wordlist*. MS.
- Schlee, G. 1978. *Sprachliche Studien zum Rendille: Grammatik, Texte, Glossar*. Hamburg: Helmut Buske Verlag.
- Schuh, R.G. 1981. *A dictionary of Ngizim*. Berkeley, California: University of California.
- Schuh, R.G. 1982. The Hausa language and its nearest relatives. *Harsunan Nijeriya* 12. 1-24.
- Seibert, P. 1967. *Die Charakteristik: Untersuchungen zu einer altägyptischen Sprechsitte und ihren Ausprägungen in Folklore und Literatur*. Teil I. *Philologische Bearbeitung der Bezeugungen*. Wiesbaden: Harrassowitz.
- Shimizu, K. 1975. *Boghom and Zaar: Vocabulary and notes*. MS. Kano. 40 p.
- Simons, P. 1981. *Lele wordlist*. MS. Marwa, July-August 1981. 42 p.
- Sirlinger, E. 1937. *Dictionary of the Goemay language*. Jos, Nigeria: Prefecture Apostolic of Jos.
- SISAJa I-III = D'jakonov, I.M. & Belova, A.G. & Četveruhin, A.S. & Militarev, A.Ju. & Porhomovskij, V.Ja. & Stolbova, O.V. 1981-196. *Sravnitel'no-istoričeskij slovar' afrazijskih jazykov*. Vypusk 1-3. Pis'mennye pamjatniki i problemy istorii kul'tury narodov Vostoka. XV-XIX godičnaja naučnaja sessija Leningradskogo Otdelenija Instituta Vostokovedenija Akademii Nauk SSSR. Moskva: Nauka.
- Sjöberg, Å.W. 1998. Studies in the Emar S^a Vocabulary. *Zeitschrift für Assyriologie* 88. 240-283.
- Skinner, N. 1971. /ts/ and /k/ in Hausa. *Anthropological Linguistics* 13(6). 301-310.
- Skinner, N. 1977. North Bauchi Chadic languages: Common roots. *Afroasiatic Linguistics* 4(1). 1-49.
- Skinner, N. 1983. Polysemy in Afroasiatic. In Wolff, E. & Meyer-Bahlburg, H. (eds.), *Studies in Chadic and Afroasiatic linguistics*, 79-94. Hamburg: Buske Verlag.
- Skinner, N. 1995. Evidence for earlier nominal affixation in Afroasian. In Ibrizimow, D. & Leger, R. (eds.), *Studia Chadica et Hamitosemitica*, 25-35. Köln: Rüdiger Köppe Verlag.
- Sokoloff, M. 1990. *A dictionary of Jewish Palestinian Aramaic of the Bizantine period*. Ramat-Gan: Bar Ilan University Press.
- Spiegel, J. 1971. *Das Auferstehungsritual der Unas-Pyramide*. Wiesbaden: Harrassowitz.
- Starostin, S.A. 2003. Statistical evolution of the lexical proximity between the main linguistic families of the Old World. In Kogan, L. (ed.), *Orientalia: Papers of the Oriental Institute*. Issue III. *Studia Semitica*, 464-484. Moscow: Russian State University for the Humanities.
- Starostin, S.A. & Dybo, V.A. & Dybo, A.V. & Helimsky, E.A. & Militarev, A.Ju. & Mudrak, O.A. & Starostin, G.S. 1995. *Basic Nostratic-Afrasian-Sino-Caucasian lexical correspondences: Preliminary working version*. MS. Moscow.
- Stolbova, O.V. 1977a. Materialy k sravnitel'noj fonetike afrazijskih jazykov (zapadnočadskie rekonstrukcii). In Ivanov, V.V. & Bulatova, R.V. & Dybo, V.A. & Helimskij, E.A. (eds.), *Konferencija "Nostratičeskie jazyki*

- i nostratičeskoje jazykoznanie*": *Tezisy dokladov*, 64-65. Moskva: Institut Slavjanovedenija i Balkanistiki Akademii Nauk SSSR.
- Stolbova, O.V. 1977b. Opyt rekonstrukcii verhnjezapadnočadskih kornej. In *Jazyki zarubežnogo Vostoka: Sbornik statej*, 152-160. Moskva: Nauka.
- Stolbova, O.V. 1986. Rekonstrukcija konsonantnoj sistemy zapadnočadskih jazykov. In *Pis'mennye pamjatniki i problemy istorii kul'tury narodov Vostoka: XIX godičnaja naučnaja sessija Leningradskogo Otdelenija Instituta Vostokovedenija Akademii Nauk SSSR*, 80-115. Moskva: Nauka.
- Stolbova, O.V. 1987. Sravnitel'no-istoričeskaja fonetika i slovar' zapadnočadskih jazykov. In Porhomovskij, V.Ja. (ed.), *Afrikanskoe istoričeskoe jazykoznanie: Problemy rekonstrukcii*, 30-268. Moskva: Nauka.
- Stolbova, O.V. 1996. *Studies in Chadic comparative phonology*. Moscow: "Diaphragma" Publishers.
- Stolbova, O.V. 2005. Chadic *n, *r, *l and their correspondences in Semitic and Kushitic (sic: K-). In Fronzarioli, P. & Marrassini, P. (eds.), *Proceedings of the 10th Meeting of Hamito-Semitic (Afroasiatic) Linguistics (Florence, 18-20 April 2001)*, 49-63. (Quaderni di Semitistica 25). Firenze: Dipartimento di Linguistica, Università di Firenze..
- Stroomer, H. 1995. *A grammar of Boraana Oromo (Kenya): Phonology, morphology, vocabularies*. Köln: Buske.
- Strümpell, F. 1910. Vergleichendes Wörterverzeichnis der Heidensprachen Adamaus. *Zeitschrift für Ethnologie* 42. 444-488.
- Strümpell, F. 1922-1923. Wörterverzeichnis der Heidensprachen des Mandara-Gebirges (Adamaua). *Zeitschrift für Eingeborenen-Sprachen* 13. 109-149.
- Stumme, H. 1899. *Handbuch des Schilchischen von Tazerwalt*. Leipzig: J. C. Hinrichs'sche Buchhandlung.
- Stumme, H. 1914. Eine Sammlung über den berberischen Dialekt der Oase Siwe. *Berichte über die Verhandlungen der Königlichen Sächsischen Gesellschaft der Wissenschaften zu Leipzig, phil.-hist. Klasse* 66(2). 91-109.
- Sudlow, D. 2001. *The Tamasheq of North-East Burkina Faso: Notes on grammar and syntax including a key vocabulary*. Köln: Köppe.
- Taïfi, M. 1991. *Dictionnaire tamazight-français (parlers du Maroc central)*. Paris: L'Harmattan-Awal.
- Taine-Cheikh, C. 2008. *Dictionnaire zénaga-français: Berbère de Mauritanie*. Köln: Rüdiger Köppe Verlag.
- Takács, G. 1997. The common Afrasian nominal class marker *ḥ. *Studia Etymologica Cracoviensia* 2. 241-273.
- Takács, G. 2000. Recent problems of Egyptian historical phonology at the present stage of comparative-historical Afroasiatic linguistics. In Lecarme, J. & Lowenstamm, J. & Shlonsky, U. (eds.), *Research in Afroasiatic grammar: Papers from the Third Conference on Afroasiatic Languages, Sophia Antipolis, France, 1996*, 345-378. Amsterdam & Philadelphia: John Benjamins.
- Takács, G. 2001. Towards Proto-Afro-Asiatic phonology: Ancient remnants in South Cushitic, Angas-Sura, and North Bauchi. *Rocznik Orientalistyczny* 54(2). 55-125.
- Takács, G. 2003. Questions of Egyptian and Afro-Asiatic comparison. *Rocznik Orientalistyczny* 56(1). 59-132.
- Takács, G. 2004. *Comparative dictionary of the Angas-Sura languages*. Berlin: Dietrich Reimer Verlag.
- Takács, G. 2005a. Egyptian lexicography and etymology: Against or with Afro-Asiatic comparison? *Rocznik Orientalistyczny* 58(2). 14-113.
- Takács, G. 2005b. Recent problems of Semitic-Egyptian and Semito-Cushitic and -Chadic Consonant correspondences. In Olmo Lete, G. del (ed.), *Proceedings of the Barcelona Symposium on Comparative Semitic (19-20 November 2004)*, *Aula Orientalis* 23(1-2). 207-231.
- Takács, G. 2005c. On "modern" popular etymology in Egyptology. In Kogan, L. & Koslova, N. & Loesov, S. & Tishchenko, S. (eds.), *Orientalia et Classica: Papers of the Institute of Oriental and Classical Studies*, Vol. VIII. *Memoriae Igor M. Diakonoff: Babel und Bibel 2, Annual of Ancient Near Eastern, Old Testament, and Semitic Studies* 2, 623-685. Winona Lake, Indiana: Published for the Russian State University for the Humanities by Eisenbrauns.
- Takács, G. 2007. Consonantal and lexical reconstruction of Afro-Asiatic: State of the art. In Voigt, R.M. (ed.), *From Beyond the Mediterranean – Akten des 7. internationalen Semitohamitenkongresses (VII. ISHaK), Berlin 13. bis 15. September 2004* (Semitica et Semitohamitica Berolinensia 5), 115-149. Aachen: Shaker Verlag.
- Takács, G. 2011. *Studies in Afro-Asiatic comparative phonology: Consonants*. Berlin: Dietrich Reimer Verlag.
- Takács, G. 2015. Questions of Egyptian historical phonology and Afro-Asiatic. Review of Allen, J.P.: *The Ancient Egyptian language. Bibliotheca Orientalis* 72(5-6), col. 565-585.
- Tal, A. 2000. *A dictionary of Samaritan Aramaic*. Vols. I-II. Leiden: E.J. Brill.
- Thausing, G. 1941. Ägyptische Confixe und die ägyptische Verbalkonstruktion. *Wiener Zeitschrift für die Kunde des Morgenlandes* 68. 5-34.

- Thiene, G. da. 1939. *Dizionario della lingua Galla con brevi nozioni grammaticali*. Harar: Vicariato Apostolico.
- Tosco, M. 1991. *A grammatical sketch of Dahalo*. Hamburg: Helmut Buske Verlag.
- Tosco, M. 2001. *The Dhaasanach language: Grammar, texts, vocabulary of a Cushitic language of Ethiopia*. Köln: Köppe.
- Tourneux, H. 1978. *Le mulwi ou vulum de Mogroum (Tchad): Langue du groupe musgu – famille tchadique*. Paris: Centre National de la Recherche Scientifique (CNRS).
- Tourneux, H. 1991. *Lexique pratique du munjuk des rizières: Dialecte de Pouss*. Paris: Librairie Orientaliste Paul Geuthner.
- UF = *Ugarit-Forschungen* (Münster).
- Urk. V = Grapow, H. 1915-6. *Religiöse Urkunden: Ausgewählte Texte des Totenbuches*. Hefte 1-3. Leipzig: J.C. Hinrichs.
- Vergari, M. & Vergari, R. 2003. *A basic Saho-English-Italian dictionary*. Asmara, Eritrea: (publisher not indicated).
- Vergote, J. 1945. *Phonétique historique de l'égyptien*. Paris: Le Muséon.
- Vergote, J. 1971. Egyptian. In Hodge, C.T. (ed.), *Afroasiatic: A survey*, 40-66. The Hague: Mouton.
- Vycichl, W. 1933. Ägyptiaka: Beiträge zur vergleichenden Hamitosemitistik. *Wiener Zeitschrift für die Kunde des Morgenlandes* 40. 171-180.
- Vycichl, W. 1951. Eine vorhamitische Sprachschicht im Altägyptischen. *Zeitschrift der Deutschen Morgenländischen Gesellschaft* 101. 67-77.
- Vycichl, W. 1953. Über eine Klasse ägyptischer Verbum ult. j. *Zeitschrift der Deutschen Morgenländischen Gesellschaft* 53. 373-377.
- Vycichl, W. 1958. Grundlagen der ägyptisch-semitischen Wortvergleiche. *Mitteilungen des Deutschen Archäologischen Instituts, Abteilung Kairo* 16. 367-405.
- Vycichl, W. 1959. Ägyptisch-semitische Anklänge. *Zeitschrift für Ägyptische Sprache* 84. 145-147.
- Vycichl, W. 1960. Gedenken zur ägyptisch-semitischen Sprachverwandschaft. *Muséon* 73. 173-176.
- Vycichl, W. 1985. Das Zeichen für d "Hand" in der Hieroglyphenschrift und die semitischen Entsprechungen des zugrunde liegenden Etymons. *Zeitschrift für Ägyptische Sprache* 112. 169-179.
- Vycichl, W. 1990. *La vocalisation de la langue égyptienne*. Tome I^{er}. *La phonétique*. Le Caire: Institut Français d'Archéologie Orientale.
- Vycichl, W. 1992. Die pharyngalen Laute ʿayin und ḥā im Berberischen. In Ebermann, E. & Sommerauer, E.R. & Thomaneck, K.É. (eds.), *Komparative Afrikanistik: Sprach-, geschichts- und literaturwissenschaftliche Aufsätze zu Ehren von Hans G. Mukarovsky*, 383-386. Wien: Afro-Pub.
- WÄDN = Deines, H. von & Grapow, H. 1959. *Wörterbuch der ägyptischen Drogenamen*. Berlin: Akademie-Verlag.
- Ward, W.A. 1962. Some Egypto-Semitic etymologies. *Orientalia* NS 31. 397-412.
- Watson, P.J. 1979. Consonantal patterning in Egyptian trilateral verbal roots. In Ruffle, J. & Gaballa, G.A. & Kitchen, K.A. (eds.), *Glimpses of Ancient Egypt: Studies in honour of H.W. Fairman*, 100-106. Warminster: Aris & Phillips.
- Wb = Erman, A. & Grapow, H. 1957-1971. *Wörterbuch der ägyptischen Sprache*. Bde. I-V.² Berlin: Akademie-Verlag.
- WD = Lapp, G. & Lüscher, B. 2002-2003. *Worddiskussionen*. Provisorische Ausgabe. Bde. I-III. (Place & publisher not indicated).
- Weibegué, Ch. & Palayer, P. 1982. *Lexique lele-français*. Sarh, Tchad: Centre d'Études Linguistiques.
- Westendorf, W. 1989. *Bemerkungen und Korrekturen zum Lexikon der Ägyptologie*. Göttingen: Universität Göttingen.
- WMT = Deines, H. von & Westendorf, W. 1961-1962. *Wörterbuch der medizinischen Texte*. Bde. I-II. Berlin: Akademie-Verlag.
- Wölfel, J.D. 1955. Eurafrikanische Wortschichten als Kulturschichten. *Acta Salamanticensia. Filosofia y letras* 9(1).
- WTS = Littmann, E. & Höfner, M. 1956. *Wörterbuch der Tigre-Sprache: Tigre-Deutsch-Englisch*. Wiesbaden: Franz Steiner Verlag.
- WUS = Aistleitner, J. 1963. *Wörterbuch der ugaritischen Sprache*. Berichte über die Verhandlungen der Sächsischen Akademie der Wissenschaften zu Leipzig. Phil.-hist. Klasse 106(3).
- ZA = *Zeitschrift für Assyriologie und Verwandte Gebiete* (Berlin – New York).
- Zaborski, A. 1971. Biconsonantal verbal roots in Semitic. *Zeszyty Naukowe Uniwersytetu Jagiellońskiego. Prace językoznawcze* 5. 51-98.

Zaborski, A. 1989. Der Wortschatz der Bedscha-Sprache: Eine vergleichende Analyse. In Schuler, E. von (ed.), *XXIII. Deutscher Orientalistentag, vom 16. bis 20. September 1985 in Würzburg: Ausgewählte Vorträge*, 573-591. Stuttgart: Franz Steiner Verlag.

ZÄS = *Zeitschrift für Ägyptische Sprache und Altertumskunde* (Leipzig).

ZDMG = *Zeitschrift der Deutschen Morgenländischen Gesellschaft* (Wiesbaden).

Zyhlarz, E. 1931-1932. Ältere und jüngere Pluralbildung im Berberischen. *Zeitschrift für Eingeborenen-Sprachen* 22. 1-15.

Zyhlarz, E. 1932-1933. Ursprung und Sprachcharakter des Altägyptischen. *Zeitschrift für Eingeborenen-Sprachen* 23. 25-45, 81-110, 161-194, 241-254.

Zyhlarz, E. 1934. Konkordanz ägyptischer und libyscher Verbalstammtypen. *Zeitschrift für Ägyptische Sprache* 70. 107-122.

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REVIEW

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William A. Foley. 2022. *A sketch grammar of Kopar. A language of New Guinea (Pacific Linguistics 667)*. Berlin – Boston: De Gruyter Mouton, pp. xvii + 248

There were several arguments for selecting just this volume among recent publications to be presented to a wider community of “general linguists” greedy for fresh arguments, facts, and inspirations in pursuit of their research goals concerning language endangerment, death, revitalization, saving in description, also language policies and planning, etc.¹ but also interested ethnologists, cultural anthropologists, etc. (astonishingly many of them signaling wants and needs concerning sources for such information).

Primo, the language described in the book is introduced as one that “was spoken” (the author explains the past tense form used with the fact that it “was already moribund twenty-five years ago [...] and hardly used in daily life”, p. 1) – so, the description actually is of a language “*newly-dead*”, in the *infancy stage* of its extinction.

Secundo, the author of the *Grammar* added the attribute *Sketch* in its title explaining that fieldwork data collecting lasted but “around a month” as “a side project to” his “main research on the documentation of the neighboring distantly related Watam language”, p. 2 (in relation to this, cf. below on Meier & Meier and Voegelin & Voegelin listing of Kopar). Thus, were it not Foley’s “side” interest in recording at least the data acquired during that month 25 years ago and preparing them for the publication under scrutiny here, Kopar could well silently disappear without any description left.

Tertio, even 25 years prior to the preparation of the “sketch grammar” there were so few speakers that not only recording data but also their verification and cross-checking with other informants~speakers “created problems” and results, briefly but sufficiently lucidly recounted, to have educational value for prospective fieldwork apprentices in

¹ Foley (p. 2) himself declares that he “offer[s] [t]his sketch to the linguistics research community and especially to *Papuanists*” (italics afm.); the present text is addressed primarily to *non-Papuanist* linguists.

similar situations. The author of the *Grammar* seemingly has no doubt that the situation after the twenty five years markedly deteriorated: “I suspect, very few fluent speakers remain today, perhaps less than two dozen [...], and even they would rarely use the language” that “certainly [...] has by now even more retreated in daily life” (p. 1). Indeed, the *last-minute* grammatical description.

Quarto, Foley “identified areas where analyses need to be regarded as provisional, pending further data *should their collection prove to be possible*” (2, *italics* afm.). The problem signaled in the latter part of this confession is by far not new and begs for a comparison; the story selected is one about the Polish zoologist and physician Benedykt Dybowski (1833-1930) who, serving (1879-1883) as a Tsarist government-appointed Regional Physician (*окружной врач*)² for a vast territory of Kamchatka Peninsula and adjacent areas with the statutory office in Petropavlovsk³ on Kamchatka, compiled relatively extensive word-lists of six (or seven) local tongues⁴ recorded directly from native speakers of each of them. Dybowski considered himself incompetent and unprepared to do it and even more to prepare them for publication, hence he entrusted the job to a prominent specialist in Ancient Orient philological and religious studies Ignacy Radliński and provided the following explanation of reasons inspiring him to collect his (as he labeled them) *dictionaries* of aboriginal languages in Kamchatka and neighboring islands printed in the introduction to the 1891 Kuril Ainu vocabulary: “there are circumstances that make the dictionaries particularly important and exceptionally valuable. The autochthons of Kamchatka and adjacent islands are dying out. For their total extinction, according to ethnographers’ estimation, one cannot wait even decades. Even if one assumes that an explorer, linguistically trained, comes to Kamchatka in the future with the intention to write down words in accordance with the principles of linguistics, it may turn out that it is too late, that the peoples concerned no longer exist. These vocabularies, therefore, are becoming the only trace of the tongue of an extinct people and simultaneously the only evidence of the existence of the people who spoke it” (Radliński 1891: 2). Radliński 1891 with its 1,900 entry words with equivalents in Polish and Latin remains the principal and most extensive source of data on the extinct Kuril Ainu (cf. Murayama 1971). The remaining tongues from the collection in question are either also extinct, moribund or seriously endangered at the best. For this reviewer, the similarity of both cases (Foley-Kopar-endangerment status) and (Dybowski-“Kamchatkan” languages-endangerment status) is obvious, even if in the latter case the respective languages were still spoken in all generations, the instruments to record them to posterity were limited to some paper (at that time rather difficult to obtain in Kamchatka) and some primitive

² Russian: *назначен на должность окружного врача*.

³ Officially (till 1924), Petropavlovskiy Port ~ Petropavlovsk; today Petropavlovsk-Kamchatskiy, the administrative center of Kamchatskiy Kray.

⁴ Northern (Shumshu Island) Kuril Ainu, Kamchatka river region Itelmen (= Kamchadal), Southern Itelmen, Western Itelmen, Eastern Koryak (edited and published in 1891-4 by Radliński), Copper Island Aleut, and possibly one more Aleut (Bering Island Aleut was probably treated as the same as that of Copper Island) ethnolect (the latter two remained unpublished as word lists (possibly lost) but a representative amount of lexical data from Bering and Copper Island ethnolects can be found dispersed in Dybowski’s works (like e.g. 1885)).

instrument (quill or nib pen requiring short-supply ink, or rather a pencil) to write with, and linguistics as an autonomous study discipline was yet to be born. Both Dybowski and Foley should be praised for their decision to publish their records they themselves considered imperfect and fragmentary and thus preserve for future generations *the only traces, the only evidence of the existence* of tongues once spoken and peoples who spoke them. Both authors deserve the everlasting gratitude for it.

Quinto, in spite of all the circumstances accompanying the conception and delivery of the *Grammar* quoted above, the final result needed 265 pages to print it on ! – and this boring recital of “arguments for” could (God willing...) drag on but... *sapienti sat*. Instead, this reviewer will resort to his usual (while in this role) procedure of checking the presence (or absence) of the glottonym *Kopar* in selected representative reference books within reach.

In Voegelins 1977 the index entry “Kopar = Watam” (p. 507) directs the user to <Bogia> where under <Bogia = Monumbo → Ramu> one finds “Watam = Kopar, 600 [speakers]” (p. 86); glottonyms *Yimas*, *Chambri*, and *Murik* from fig. 1 (p. 1 in the *Grammar*) “present[ing] the languages of the Lower Sepik family and their relationships” have been classified in Voegelins under <North New Guinea → Murik = Nor-Pondo> (253). In Meiers 1979:374 one finds “[...] *Watam* (auch *Kopar*) im Sepik Bezirk” under “153. Bogia-Sprachen → 153.1. West-Bogia-Zweig → Nord-Gruppe” (five tongues, altogether 6,000 speakers; *Jimas*, *Čambri*, and *Murik* are to be found under “162. Nor-Pondo-Sprachen”, p. 377). Grimes in *Ethnologue* ⁹1978: 389 lists “*Watam (~Marangis~Kopar [*sic!*]) with 600 [speakers] (after Wurm, 1971)⁵” suggesting “possible translation [of the Bible or other religious scriptures] needed”⁶. In *Ethnologue* (Lewis) ¹⁶2009: 619 (entry “Kopar”), the number of speakers quoted is “540 (2000 census)” and relation to Murik admitted; Kopar language area is shown on the map on p. 865 (glottonym 174).

Kamei et al. 1993 listed Kopar in its both Japanese (和文索引, p. 596) and “Western writing” (欧文索引, p. 906, in both cases central column) indices directing to Kamei et al. 1992: 232 left col. (listed as “コバル語 (Kopar)” under “61. ノル・ポンド (下流セピック) 言語亜門レベル言語系 (Nor-Pondo (Lower Sepik) subphylum-level Stock”). Contrary to what the index in Asher & Moseley atlas 2007 suggests, Kopar does not appear only on map 33 (p. [141], glottonym 356 – one of two Nor among six Lower Sepik languages in turn among 35 Lower Sepik-Ramu languages) but *is also listed* in the text on p. 113 with the same classification (and the population of native “speakers” 230; – just for the unfortunate Kopar – no reference to that page has been provided in the atlas index). Seemingly (and strangely), not only Kopar under any glottonym but none of the

⁵ Wurm 1971 is not listed in the “Bibliography” in *Ethnologue* ⁹1978: 412; possibly the reference is to Stephen A. Wurm’s contribution “The Papuan Linguistic Situation” to Thomas A. Sebeok (ed.) 1971. *Current trends in linguistics. Vol. 8. Linguistics in Oceania*. The Hague & Paris: Mouton (541-657; Sebeok (ed.) 1971 is listed in *Ethnologue* ⁹1978: 411).

⁶ The following explanation of the category has been provided in the introduction to Grimes: “Because of lack of information about intelligibility with related dialects or languages, bilingualism in other languages, or attitudes toward other languages, the Bible translation needs have not yet been determined more definitely. These languages are marked with an asterisk to the left of the name”

Lower Sepik family languages has been listed in Yartseva 1982: 76ff.⁷ Of course, it is to be found in Foley 1986 (: 214-29, subchapter “The Lower Sepik family, a comparative study”) and in Foley’s contribution (“The Languages of the Sepik-Ramu Basin and Environs”, 197-431, here subchapter “The Lower Sepik-Ramu family”, 203-20) to Palmer 2018.

This routinely executed checking procedure revealed also that the glottonym *Kopar* as well as its referent have been by far better known to authors of reference books like these quoted above than quite a number of glottonyms of languages, the pioneering grammars published in a few recent years of which⁸ had been chosen by this reviewer to be presented to the “wider community of general linguists” pointed to at the very beginning of this text who would otherwise probably never reach for any of them.

The core (pp. 1-203) of the *Sketch grammar* has been organized into seven “chapters”, followed by two “appendices” (205-242), “References” (243-244), and “Index” (245-248). The front matter includes consecutively “Preface” (v), table of “Contents” (vii-x), “List of abbreviations” (xi-xii), “List of Map” (*sic!* – precisely, one map “listed”, xiii⁹), “List of figures” (xv, four items), “List of tables” (vii, 13 items). Of these, the detailed table of contents and the list of abbreviations, and of course the index are really supportive for users. The list of references reveals how absent <focus on Kopar> was in research (the glottonym seems to appear only once on the list – in the title of an article by Foley¹⁰).

“Chapter 1” entitled “Introduction”¹¹ (pp. 1-5) starts with identifying the language described in the book as “now moribund language formerly spoken in three villages near the mouth of the Sepik River”. Apart from the information on the language situation and fieldwork circumstances in part quoted in the initial paragraphs of this text, it places Kopar in the genetic classification of the Lower Sepik family (mainly with the, simple but very transparent and informative, drawing also mentioned above as <fig. 1>) as well as geographically, on a map captioned “Distribution of the Lower Sepik languages” (p. 3)¹², provides details on field data collecting and collected (word lists (one outsourced), nominal and verbal paradigms, “three narrative texts of moderate length and one shorter narrative text”) and their use, and a hint on “minor dialect differentiation” (2), certain relevant facts from the recent history of both the Koper community and language, and

⁷ A verification, especially with the use of alternative glottonyms, proved to be too time-consuming to be repeated for the purposes of the present text.

⁸ Like Paluai (LPos. 62/2 (2020), 121-133), Papapana (LPos. 63/1 (2021), 119-129), Gurindji (LPos. in print), Xong (RO 75/1 (2022), 167-180).

⁹ Actually, two lines on two pages, proecological awareness failed – in this and in the two cases that follow.

¹⁰ And “the most closely related” (1) Murik – only four times: once in the same title, and thrice in the titles of Joseph Schmidt’s works dated 1922-3, 1926, 1953.

¹¹ For this reviewer, a nowadays common terminological inexactitude, a confusion of genres: in this writer’s very long practice as author, editor, and reader, <Chapter 1> in the absolute majority of cases followed the <Introduction>.

¹² The map is basically the same as the one printed in Foley 1986: 214 – with one important difference: the 1986 map is much more transparent; for a reader over, say, 70 years old, it does make a really huge difference.

points to prominent characteristic typological features (“typological profile”) of the language (phonologically “fairly typical of its area” (5); “strongly agglutinative, moderately polysynthetic [...] but perhaps not to the degree of” certain Amerindian languages (4); S-O-V order “more regularly than Yimas and some other Papuan languages” (5)). Usually, such introductory chapters with extralinguistic contextual material in pioneering grammars are perceived, particularly by users from outside the narrow field of, say, Austroasiatists, Austronesianists, Africanists, (in this case Papuanists), etc., as superficial, providing insufficient background information, “being too short”. The introduction in Foley’s *Grammar* is very short and may be met with a similar complaint; on the other hand, however, taking into account the conditions under which the language data had been collected and organized into a book as well as the entire volume of the book (cf. above), this reviewer found the amount of information squeezed in this compact text satisfactory enough to avoid airing such a grievance¹³.

“Chapter 2” (6-23) is devoted to “Phonology” (“somewhat typical phonemic inventory for the languages of the area” (6), with 6 vowel (7) and 18 consonantal (6) phonemes, briefly discussed are also allophones; “phonotactics” (8-12); “stress” (13); “morphophonology” (13-22); and “a note on presentation of examples” (parallely in four lines: phonemic transcription – underlying representation – glossing – English translation (22-3)).

“Chapter 3” (24-52) deals with “Word classes” (“only two major classes of words, nouns and verbs; all other classes are small and closed” (24) – “the other” eight classes enumerated (24) and described are: adjectives (30-5, “[...] there is one true adjective” [...]) (30)), quantifiers (quinary-decimal-vigesimal numeral system and “three other quantifiers” for ‘some, few’, ‘many’, and ‘all’ (36-9)), independent pronouns (three persons, four numbers – singular-dual-paucal-plural; also recorded five interrogative pronouns (39-41)), deictics (41-6), postpositions (46-9), temporals (49-51), conjunctions (one native, and two Tok Pisin loans (51-3)), and interjections (five recorded and listed (53)); the chapter includes also brief introductory information on nouns (“morphologically simple”, 25-6) and verbs (“the most morphologically complex class of words”, 26-30). The author decided to “use a mixture of semantic and formal criteria to define each class” (24) which is logically risky – hence in the book one finds such passages as “words denoting properties can be divided into three classes: *Adjective* (*only one*, we remember), *Adjectival verbs* [and] *Nouns* (30-1) or “While the perfective is semantically an aspect, it is treated here [*i. e.*, in the section on “Tense” (97-104)] because formally it behaves like a tense in Kopar” (101).

“Chapter 4”, evidently the shortest in the grammatical part, focuses on “Nouns and noun phrases” (54-64, again we remember: “morphologically simple”), while “Chapter 5”, naturally the most extensive in the whole volume, concentrates on the “the most complex” component of Kopar grammatical structure, namely the “Verbal morphology” (65-150; briefly and selectively: transitivity (66-8), “pronominal affix agreement systems for core arguments” (68-96, with “the accusatively aligned system” (68-70)), “the ergatively aligned system” (71-85), “pronominal agreement in the perfective” (86-90), “the dative suffixes” (90-6), “tense, aspect and mood” (96-120, six tenses (97) and four aspectual

¹³ See our remarks in LPos. 62/2 (2020): 130; 63/1 (2021): 124-5; RO 75,1 (2022): 175-6.

categories (“distinctions”) established but “aspect [...] still remains not fully understood” (104), modality (107-12) and “mood of illocutionary force” (112-20, here questions, imperatives, prohibitives, hortatives)), “verb stem derivations: valence changes” (120-32, *i. a.*, reflexivization, transitivity and detransitivization, causatives, applicatives), “verb theme derivations” (132-50, here “possessor raising” (133-5)¹⁴ and incorporation (135-50)).

“Chapters 6” (151-79) and “7” (180-203) have been allocated to syntax, the former to clause structure (here “basic verbal clauses”, 151-73, and “nonverbal clauses”, 173-9: “Kopar verbal clauses and non-verbal clauses have very different structures and possibilities” (151)), the latter to “interclausal relations” (here “non-finite constructions”, 180-6, and “finite constructions”, with “finite subordinate clauses”, 187-90, “coordination of full independent clauses”, 190-3, and “clause chaining”, 193-203).

Followed are two appendices (1 – being a 200-entry “comparative wordlist of Kopar and Murik”, 205-10, and 2 – a longer narration text (perhaps one of the “moderate-length” texts mentioned in the “Introduction”, 2, cf. above), with interlinear analysis and English translation, 211-42).

References

- Asher, R[onald] E. & Christopher Moseley (eds.). 2007. *Atlas of the world's languages*. 2nd edn. London – New York: Routledge.
- Dybowski, Benedykt. 1885. *Wyspy Komandorskie* [the Commander ~ Komandorskiye Islands]. Lwów [np.]. *Ethnologue* 9/1978 (Barbara F. Grimes ed.; Huntington Beach: Wycliffe Translators); 16/2009 (M. Paul Lewis ed.; Dallas, Texas: SIL International).
- Foley, William A. 1986. *The Papuan languages of New Guinea*. Cambridge et al: Cambridge University Press.
- Kamei Takashi [&] Kōno Rokurō & Chino Eiichi (eds.). 1992. *Gengogaku daijiten // The Sanseido encyclopedia of linguistics*. Vol. 3, *Sekai gengo hen // Languages of the world*. Part three. Tōkyō: Sanseidō. 亀井孝・河野六郎・千野栄一 編著 1992. 言語学大辞典 第3巻. 世界言語編下-1. 東京 三省堂。
- Kamei Takashi [&] Kōno Rokurō & Chino Eiichi (eds.). 1993. *Gengogaku daijiten // The Sanseido encyclopedia of linguistics* vol. 5, *Hoi, gengomei sakuin hen // Supplement & Index*. Tōkyō: Sanseidō. 亀井孝・河野六郎・千野栄一 編著 1993. 言語学大辞典 第5巻. 補遺 言語名索引編. 東京: 三省堂。
- LPos. – *Lingua Posnaniensis. Revue de Linguistique Comparée et Générale // Review of General and Comparative Linguistics* (Poznań, published since 1949).
- Meier, Georg F. & Barbara Meier. 1979. *Handbuch der Linguistik und Kommunikationswissenschaft*. Band I. *Sprache, Sprachentstehung, Sprachen*. Berlin: Akademie Verlag.
- Murayama Shichirō. 1971. *Kita Chishima ainugo – bunkengakuteki kenkyū* [philological studies on Northern Kuril Ainu language]. Tōkyō: Yoshikawa Kōbunkan. 村山七郎1971. 北千島アイヌ語 – 文献学的研究. 東京: 吉川弘文館。
- Palmer, Bill (ed.). 2018. *The languages and linguistics of the New Guinea Area: A comprehensive guide*. Berlin – Boston: De Gruyter Mouton.
- Radliński, Ignacy. 1891. *Słownik narzecza Ainów, zamieszkujących wyspę Szumszu w łańcuchu Kurylskim przy Kamczatce ze zbiorów Prof. B. Dybowskiego* [dictionary of the ethnolect of the Ainu inhabiting the Shumshu Island in the Kuril chain nearest to Kamchatka Peninsula from records taken by Professor Benedykt

¹⁴ “[...] a very common feature of the narrative texts. Possessor raising occurs when a human possessor of a noun occurs as a dative pronominal suffix instead of or in addition to [...] being realized as a *-na* POSS marked constituent in a noun phrase. Nouns from which possessors can be raised are most commonly body parts [...]” (133). Marginally, there seems to be no <(5.83f)> example referred to (cf. 133-4) and <POSS> seems to be absent from the “List of Abbreviations” (xi). Reviewer’s task, however, is not that of a proof-reader so no other possible flaws have been noted down for the sake of the present text.

- Dykowski]. Kraków: Akademia Umiejętności. Published separately – pp. 1-67. Appeared also in 1892 in *Rozprawy Akademii Umiejętności, Wydział Filologiczny* (Kraków) 16 (seria II. Tom I). 53-119.
- RO – *Rocznik Orientalistyczny // Yearbook of Oriental Studies* (Warsaw, published since 1914).
- Voegelin, C[harles]. F. & F[lorence] M. Voegelin. 1977. *Classification and index of the world's languages*. New York – Oxford – Amsterdam: Elsevier.
- Yartseva, Victoriya Nikolayevna В[иктория] Н[иколаевна] Ярцева (ed.). 1982. *Yazyki i dialekty mira, prospekt i slovník* [languages and dialects of the world, prospectus and list of glottonyms; “Yazyki Papua-Novoy Gvinei” ‘Papua-New Guinea languages’, 76-81(-85); “Yazyki poberezh’ya provintsiy Vostochnyy i Zapadnyy Sepik” ‘languages of the coastal provinces Eastern and Western Sepik’, 80-1]. Moskva: Izdatel’stvo Nauka [Moscow: Nauka Publishers].

