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"Whatever in the Coptic Language Is Not Greek, Can Wholly Be Considered Ancient Egyptian": Recent Approaches towards an Integrated View of the Egyptian-Coptic Lexicon*

Gertrud Bauer octogenariae

Abstract

Ten years before Champollion's Lettre à M. Dacier, Johann Severin Vater projected a "holistic" vision about the Egyptian-Coptic language, its diachronic development, and etymological components: "Was in der Koptischen Sprache nicht Griechisch ist, darf man wohl im Ganzen für Altägyptisch halten." During the decades following the decipherment of hieroglyphics, the advanced knowledge of Coptic was of essential importance for establishing the meaning of hieroglyphic words, thus forming the foundation of the Ancient Egyptian lexicon. The early Egyptologists' retrospective view of Coptic vocabulary reinforced a peculiar development in the lexicography of Coptic, namely that all newer dictionaries of the language are restricted to its non-Greek vocabulary. Lasting influence on Ancient Egyptian lexicography was further excerted by the achievements of the "Berlin school" of Egyptian linguistics in the late nineteenth and first half of the twentieth century. In the wake of Adolf Erman's groundbreaking discoveries about the diachronic diversity of different phases of the Egyptian language, its grammar(s) and lexicon(s) were now being studied separately according to synchronic language phases and subcorpora. The present article intends to introduce two recent lexicographical ventures striving for a fuller picture of the Egyptian-Coptic lexicon, the one concerned with the rehabilitation of the discarded loaned components of its terminal phase, the other aiming at its diachronic reintegration.

PROLEGOMENA

The turn to Christianity in Late Antique Egypt meant an overall *change* of paradigms and a *break* with traditional cultural narratives and symbolic forms at several levels. An undisputable layer of *continuity* between the Pharaonic and Christian Egyptian cultural systems is the Egyptian-Coptic language. From the original

invention of the hieroglyphic writing system around 3000 BCE[1] up to the fourteenth century, when the last Coptic textual compositions came into being,[2] a more than 4000-year period of continuous language retention and change is attested by written evidence, providing unique opportunities for linguistic study.[3]

"Whatever in the Coptic language is not Greek, can wholly be considered Ancient Egyptian." This observation would seem too obvious to be interesting. In 1812, however, when it was noted by Johan Severin Vater, co-author of the linguistic encyclopedia *Mithridates*, it was far from a commonplace, since only ten years later would the decipherment of hieroglyphics lay the foundations for any secure judgement on the Ancient Egyptian language. Up to then, even the identification of the language underlying hieroglyphics as ancestor of the Coptic language was an educated guess, based on general historical considerations and indicated by comparison of Egyptian words sporadically quoted by classical and biblical authors[4] with apparent cognate words found in the Coptic lexicon, such as ερπις (Coptic ηρπ) "wine," Μῶ (Bohairic μωογ) "water," and Χημία (Bohairic χημι) "Egypt."

At the beginning of the nineteenth century, Coptic was a fairly well understood language,[5] and Jean-François Champollion boasted an excellent knowledge of it. Having cracked the code on the basis of Greek proper names in hieroglyphic transcription,[6] he swiftly convinced himself of the truth of the hypothesis of a genealogical link between Coptic and the language of hieroglyphic inscriptions.[7] As a result Coptic became a major key for his growing understanding of Ancient Egyptian, and throughout the foundational phase of Egyptian linguistics, the Coptic lexicon served as the most important source to assign lexical meanings to hieroglyphic words, and thus to establish an Ancient Egyptian lexicon.[8]

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1 On the emergence of the hieroglyphic writing system and the earliest stage of the Egyptian language, see Vernus, 1993; Dreyer, 1999; Kahl, 1999; Kahl, 2001; Kahl, 2002–2004; Morenz, 2004; Baines, 2007.

2 On the language shift from Coptic to Arabic see Papaconstantinou, 2007; Zaborowski, 2008; Richter, 2009; Papaconstantinou, 2011; Sidarus, 2013.

3 See recently, e.g. Grossman, Haspelmath and Richter, 2015.

4 E.g. by Scholtz, 1783; Jablonski, 1804; Rossi, 1808.

5 The understanding of Coptic by Western humanists and Oriental philologists profited from medieval Christian Arabic literature, especially the Arabic-Coptic glossaries (*salālim* "ladders") and grammatical primers (*muqaddimāt* "introduction") of (Bohairic and Sahidic) Coptic available as manuscripts in European libraries and in print since Kircher, 1636.

6 See most recently Schenkel, 2014–2015.

7 On Champollion's concept of the two varieties of Egyptian known to him, one written in hieroglyphics and the other in the Coptic script, as registers of basically the same language, a conservative priestly idiom ("langue sacrée") and a vernacular one ("langue parlée"), see Richter, 2013.

8 On the early history of Egyptian lexicography and its methodology, see Sturtewagen, 1994; Schenkel, 1995; Dils, 2010; Dils, 2013; Sperveslage, 2014.

Indeed, still fifty years after Champollion, the knowledge of Ancient Egyptian was to a large extent a knowledge of *lexical items* rather than of any *morpho-syntactic patterns*.[9] *Lexicon*, rather than morpho-syntax, is also what I will be dealing with in what follows. I will take my point of departure from two long-established attitudes in the lexicography of the Egyptian-Coptic language: first, the strictly *synchronic* approach to the lexicographical description of Egyptian taken by Egyptologists over the last century and second, the disregard by almost all Coptic lexicographers of the massive influx of loaned vocabulary resulting from the language contact of Egyptians with Greeks and Arabs in the later and terminal phases of the Egyptian language. After a side remark on the study of language change, notably in the lexicon, I will continue by pleading for a *re-intergrated* lexicon of the Egyptian-Coptic language by introducing two recent approaches to such an effect, before summarizing with a short conclusion.

EGYPTIAN LEXICOGRAPHY IN THE WAKE OF THE "BERLIN SCHOOL" OF EGYPTOLOGY

In the last decades of the nineteenth century, the achievements of Adolf Erman and the so-called "Berlin school" of Egyptology changed the overall perspective on the Egyptian language dramatically.[10] Roughly speaking, there were three major achievements resulting from Erman's orginal breakthroughs. First, the evidence of genealogical relations between the Egyptian language and the Semitic phylum, already inferred by previous scholars on the basis of pronominal morphology and numerals,[11] was now vastly expanded and substantiated at several levels of the language, including word formation, morphology, and syntax.[12] Second, looking at the Egyptian language without recognizing its root-and-pattern morphology, earlier scholars had seen what seemed to them bare stems, rather than words, stuck together by primitive syntactic mechanisms to basic main sentences:

> The Egyptian, was a language of the utmost simplicity, or even poverty, of grammatical structure. Its roots— which (…) are prevailingly (…) monosyllabic—are also its words; neither noun nor verb, nor any other part of speech, has a characteristic form, or can be traced back to a simpler radical element.[13]

Erman was the first to accredit a fully-fledged *grammar*—including nominal and verbal morphology and syntactic rules—to the Egyptian language.[14]

The third great achievement of the "Berlin school," and the one concerning us here, was the discovery of *different phases* of the Egyptian language—that is, of its diachronic diversity. Until then, Egyptian seemed not only to lack any appreciable grammar; it also seemed to have remained unchanged over thousands of years— from the erection of the pyramids to the rise of Christianity, as scholars liked to put it. These two features of

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9 Champollion's posthumous *Grammaire Égyptienne* (CHAMPOLLION, 1836) is for the most part an elaboration of his work on the hieroglyphic writing system. To the best of my knowledge, the first printed studies on the morphosyntax of hieroglyphic Egyptian are MASPERO, 1871 and LE PAGE RENOUF, 1875.

10 See GERTZEN, 2012; RICHTER, 2015a.

11 E.g. LEPSIUS, 1836: 81–150, and BENFEY, 1844.

12 ERMAN, 1875, 1878, 1881, 1889 and 1896.

13 WHITNEY, 1867: 342.

14 ERMAN, 1880, 1882, 1890 and 1894.

Egyptian—namely, its primitiveness and its resistance to change—seemed to be mutually dependent. Whitney, for instance, made a straightforward claim of such interdependence: "the differences are comparatively slight between the old Egyptian and the later Coptic, for the exceedingly simple structure of the language has saved it from the active operation of linguistic change."[15]

On the other hand, the very idea of the unchangeability of Egyptian-Coptic was a valuable working hypothesis to early Egypotologists: it granted them the highest profit of their knowledge of Coptic for their understanding of Ancient Egyptian. In light of Erman's discoveries, the diachronic diversity within Egyptian-Coptic turned out to be much greater than foreseen. Since Erman's *Neuägyptische Grammatik*, Egyptian grammars and dictionaries have been dealing with separate synchronic language phases or single subcorpora for good reason. Moreover, the scope of the lexicographical venture of the "Berlin school" of Egyptology—the monumental *Wörterbuch der Aegyptischen Sprache*[16]—was as such limited to words from hieroglyphic and hieratic Egyptian texts; Demotic was completely skipped[17] and Coptic cognates are only randomly quoted.

THE DISREGARD OF LOAN VOCABULARY IN THE RECORD OF COPTIC LEXICOGRAPHY

The massive quantity of loaned vocabulary borrowed from Greek into Coptic texts has always struck scholars as remarkable. The mentioned Johann Severin Vater wrote in 1812:

> From the time of Psammeticus, Greeks and without doubt also their language, exerted influence on Egypt. This influence apparently grew strong under the Ptolemies whose court was speaking in Greek, and who estabished the base of Greek erudition at Alexandria. A great amount of Greek words and Graecisms necessarily entered the Ancient Egyptian language, and this is how Coptic presents itself to us in its well-known shape: it is crowded with Greek words.[18]

This is the other aspect of his concluding statement that "whatever in the Coptic language *is not Greek*, can wholly be considered Ancient Egyptian."[19]

However, it was the Ancient Egyptian component of Coptic alone that captivated the attention of lexicographers. This interest was rooted, in part, in the Western European, humanistic tradition of the study of Oriental languages. The Oriental philologists' knowledge of Coptic vocabulary was originally gained from

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15 Whitney, 1867: 341. The rationale behind his argument rests upon the contemporary view that linguistic change fundamentally implied the decline of languages from complexity to simplicity. For a more sophisticated argument made by Steinthal, see Ringmacher, 1996 and Richter, 2016c.

16 Erman and Grapow, 1923–1926. On this huge joint project of the international Egyptological community of the day, see Erman and Grapow, 1953; Reineke, 1999; Seidlmayer, 2006.

17 For the prejudice according to which Demotic was not considered as an integral part of the language change of Egyptian but an artificial idiom introduced and used by bureaucrats, see Sethe, 1925; Grapow, 1938; Stricker, 1945. This opinion was first refuted, as far as the grammatical system is concerned, by Johnson, 1976. In the lexicon there is even more undoubted continuity from Demotic to Coptic.

18 Translated from Vater, 1812: 68–69.

19 Vater, 1812: 69.

the medieval Egyptian onomastica called *salālim* (Latin *scalae*, "ladders"),[20] philological tools through which thirteenth- and fourteenth-century Egyptian Christian scholars tackled the problem of their own (and their contemporaries') decreasing access to Coptic literature, following the language shift of the Coptic-speaking, literate élite to Arabic.[21] While these onomastica contain Coptic as well as Greek words and phrases as intergral parts of the Coptic literary idiom, Western Oriental philologists took a different approach. In their humanistic perspective on Coptic, all the many Greek loanwords embedded amidst the alien matrix of Egyptian structures looked too familiar to require the same attention—indeed, any attention at all—from lexicographers. Already in the eighteenth century, Coptic dictionaries, such as the (in its day exhaustive) *Lexicon Aegyptiaco-Latinum* of the Huguenot polymath Maturin Veyssière de La Croze of 1721,[22] were limited to etymologically non-Greek words of Coptic.

As mentioned before, in the decades after Champollion the knowledge of Coptic gained crucial importance for the foundation of Ancient Egyptian philology. The perspective on Coptic as a descendant of Ancient Egyptian—novel, at the time—was another impetus for the development of Coptic lexicography, with the effect that the massive influence of contact-induced change of the Egyptian lexicon was ever-more-readily passed over in silence. As a result, all newer dictionaries of Coptic are, as it were, "inverted" etymological dictionaries of Ancient Egyptian. To gauge the impact of such a lexicographical selection, one may imagine a hypothetical dictionary of English which would only include words of Germanic etymology, to the strict exclusion of everything else.

It was a maverick in the fields of comparative linguistics of the day, the prolific and provocative writer Carl Abel, who first pointed to the benefits of the study of Greek words in Coptic, as he wrote in 1876: "It would be an enormous task, on multiple levels illuminating the interrelations between the two national and language spirits," as he framed it in terms of nineteenth-century *Völkerpsychologie*, "to compile a lexicon of these Graeco-Coptic words, to reckon the instances of their occurrence, and to discuss their relationship to their purely Coptic synonyms in terms of both frequency and semantics."[23] 140 years anon, Abel proposed a project actually resembling the one which I will be dealing with below. Abel's interest in token frequency ("to reckon the instances of their occurrence," as he said) in particular strikes me as an approach which was unusual, and probably unfeasible, in his day. On the other hand, he shared the opinion of Coptic linguists of his day that Greek words in Coptic, notwithstanding their huge quantity, were not adding, but merely duplicating, semantic information already lexicalized by Coptic native synonyms.[24]

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20 See Sidarus, 1978, 1999 and 2000.

21 On the transfer of the literary tradition of Christian Egypt from Coptic to Arabic see Rubenson, 1996a and 1996b; Zaborowski, 2008; Sidarus, 2013.

22 This comprehensive Coptic dictionary was left by its author in a manuscript version; see Boud'hors, 2004: 73 (no. 54). It appeared in print only in 1775, fifty years after Veyssière de La Croze's death (Oxford, Clarendon), and was published by Christian Scholtz. On the earliest studies of Coptic in Europe see Aufrère, 1999; Emmel, 2004.

23 Abel, 1876: 549–550.

24 A typical testimony of this opinion is found in Schwarze and Steinthal, 1850: 4–6 (§ 3): "Über die fremden Wörter in der Koptischen Sprache. In den Texten der Koptischen Schriften trifft man häufigst Griechische, ungleich seltener Lateinische Wörter. Ist nun durch die Aufnahme dieser fremden Wörter der Umfang der Koptischen Sprache in materieller Hinsicht verringert worden? Diese Frage ist unbedingt zu verneinen, weil, mit Absehung von ganz speciellen Benennungen (…), äußerst wenig Griechische und Lateinische Wörter gefunden werden möchten,

Eventually, it was not before the twentieth century that the massive presence of Greek words in Coptic texts began to intrigue scholars so that certain aspects of loanwords were more closely investigated,[25] such as morpho-phonetic and semantic differences of Greek words in Coptic from their standard spelling and usages in Greek texts. The opportunity provided by Greek loanwords in Coptic for the study of post-Hellenistic *koine* Greek and the language change of Greek in Late Antiquity also began to attract scholars.[26]

After the mid-twentieth century, numerous attempts at a systematic lexicographical compilation of Coptic loanwords were undertaken. The name of Alexander Böhlig is attached to the most vigorous one.[27] Böhlig's work on Greek words in Coptic surfaces for the first time in his *Habilitationschrift, Die griechischen Lehnwörter im sahidischen und bohairischen Neuen Testament*.[28] Appointed as director of the Institute for the Christian Orient at Halle (East Germany) in 1954, Böhlig started compiling a comprehensive card index of Greek loanwords in Coptic texts. His work of these years is documented in a few fascicles of corpus-wise glossaries,[29] a number of progress reports,[30] and some forty boxes containing about 65,000 lexicographical slips.[31] It came to an abrupt halt in Spring 1963, when, after a stay in Egypt, he absconded to West Germany, thus leaving his card index in Halle. Attempts to push ahead with the loanword project at Halle were taken soon after Böhlig's flight[32] and once again in the 1990s; they resulted in some articles,[33] but did not lead to substantial results.

Meanwhile, teaching at the University of Tübingen,[34] Böhlig himself took a new approach to his former project. He abandoned the goal of comprehensiveness to focus on more limited targets. Under his auspices, Volker Siegert produced an index of (prevailingly) Greek terms in the Nag Hammadi codices,[35] and Gertrud

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für welche sich nicht auch der entsprechende Koptische Ausdruck nachweisen liesse. (…) Eben so wenig ward in formeller Hinsicht die Koptische Sprache durch die Beimischung fremder Wörter beeinträchtigt, weil die Kopten mit der äussersten Zähigkeit die Bildungsweise ihrer Sprache beibehielten"; in a similar vein also Stern, 1880: 4–5.

25 E.g. Rahlfs, 1900 and 1912; Gaselee, 1914, 1916 and 1929/1930; Hopfner, 1918; Blok, 1927; Jernstedt, 1929; Allberry, 1938. A comprehensive investigation of words and word classes borrowed from Greek was undertaken by Waheeb Atalla Girgis, a doctoral student of W.C. Till at Manchester and later Bishop Gregorios, whose publication was spread over a series of eight articles entitled "Greek Loan Words in Coptic" (Girgis, 1963–2001), before recently being collected in a printed monograph: Girgis, 2010.

26 Lefort, 1934: 569–578 advertized the Coptic loan vocabulary as a major, though for the most part overlooked, source of Greek lexicography.

27 On Alexander Böhlig, see Gerö, 1996; Markschies, 1996; Winkler, 1996; Krause, 1997; Nagel, 2013; Müller-Wollermann, 2014.

28 Böhlig, 1951.

29 Böhlig, 1953b, 1954a and 1954b.

30 Böhlig, 1953a, 1955, 1956, 1960 and 1962.

31 These boxes are now archived in the office of the DDGLC project at the Free University, Berlin.

32 Weiss, 1966, 1968, 1969 and 1972.

33 Tubach, 1999a and 1999b; Demaria, 2005.

34 From 1963 to 1979, first at the Egyptological Institute, later as chair for Oriens Christianus, see Müller-Wollermann, 2014.

35 Siegert, 1982.

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Bauer published a concordance of uninflected Greek words (particles, prepositions, conjunctions and adverbs) in the Bohairic New Testament.[36]

Another large-scale project on the Coptic lexicon was initiated in the 1960s by Rodolphe Kasser at Geneva, who aimed at a comprehensive lexicographical compilation of the entire Coptic corpus without regard to source languages, thus including indigenous Egyptian words as well as words borrowed from Greek and Arabic. This ambitious venture did not continue beyond its first fascicle.[37] In the meantime, Coptologists became used to contenting themselves with substitutes, such as indices[38] and concordances[39] of Coptic subcorpora: even though they provide only a limited range and shallow depth of lexicographical information, these tools helped Coptologists to cope with the lasting lack of a proper loanword lexicography.

EXCURSUS: DIACHRONIC CHANGE OF LEXICON

Among all subsystems of linguistic signs, the lexicon is outstanding by its sheer number of elements, in comparison to the universally much more limited number of meaningful elements in phonology, morphology, or syntactic pattern formation. It has been argued that "there is less resistance to change in the semantics than in other areas of the grammar (…), so that meaning changes [occur] relatively quickly and easily."[40] McMahon has also pointed out that "changes in meaning and in lexical inventory tend to have higher profile among native speakers than other types of changes (…). Most native speakers will thus be aware of semantic changes which have taken place within their lifetime."[41] But it is not just about resistance and awareness; the disproportionately greater quantity of elements—an average language's many thousands of lexemes, as opposed to its few dozens of morphemes and phonemes—is in itself a factor raising the frequency of events of linguistic change in the lexicon, such as the emergence and disappearance of words and changes of meaning, far beyond the frequency of sound shifts or changes in grammatical forms and structures.

In the 1950s, historical linguists began to appreciate this frequency as a chance for quantitative approaches to language history. Under the confident label of *glottochronology*,[42] they tried to calculate retention and replacement rates of parts of the lexicon within a fixed period of time, and to operationalize such calculation as a gauge to date language diversification processes. Morris Swadesh's concept of "core vocabulary" and his lists

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36 BAUER, 1975.

37 KASSER, 1967. Parts of its groundwork are incorporated in Werner Vycichl's *Dictionnaire étymologique* (VYCICHL, 1983).

38 E.g. DRAGUET, 1960, BEHLMER, 1997/1998, and the comprehensive index of Greek words in Coptic documentary texts by FÖRSTER, 2002.

39 E.g. BAUER, 1975 and the excellent concordances produced in the series "Bibliothèque copte de Nag Hammadi, section concordances," by Régine Charron, Pierre Cherix, Wolf-Peter Funk and Paul-Hubert Poirier.

40 McMAHON, 1994: 174, referring to ULLMANN, 1957 and 1966.

41 McMAHON, 1994: 174 (n. 36).

42 See e.g. SWADESH, 1955 and 1972; GUDSCHINSKY, 1956. On the discussion about the validity of the method, see e.g. BERGSLAND and VOG, 1962; McMAHON and McMAHON, 2005: 179–185; RENFREW, McMAHON and TRASK, 2000. In favour of glottochronology, see e.g. DYEN, JAMES and COLE, 1967; EHRET, 2000; STAROSTIN, 2000. Against the method, see e.g. BLUST, 2000; DOLGOPOLSKY, 2000.

of basic terms were crucial for these endavors.[43] One of the advocates of the method, Robert Lees, undertook to "calibrate" the glotto-chronological "measuring stick" as it were, by testing a sample of pairs of cognate languages, such as Old and Modern English, Latin and Tuscan Italian, Old Nordic and Swedish (see Table 1).[44] On the basis of Swadesh's 200 items list, he calculated an average retention rate per millennium which he considered as a universal invariable:

Table 1: Retention rate of 13 pairs of cognate languages according to LEES, 1953.

Parent / Child language	Chronological range	Swadesh items	Cognates	%	k
Old / Modern English	900–1000 n. / 1953	209	160	76.6	.766
Plautinus / Spanish 17th c.	200 v. / 1600 n.	200	131	65.5	.790
Plauntinus / Molière	200 v. / 1650 n.	200	125	62.5	.776
Old High / Modern German	800–900 n. / 1953	214	180	84.2	.854
Middle Egyptian / Coptic	2100–1700 v. / 300 n.	200	106	53.0	.760
Koine / Modern Greek	250 v. / 1953	213	147	69.0	.836
Koine / Modern Cypriote	250 v. / 1953	211	143	67.8	.829
Classical / Modern Chinese	950 n. / 1953	210	167	79.6	.795
Old Nordic / Modern Swedish	800–1050 n. / 1953	207	176	85.0	.854
Latin / Modern Tuscan	200 v. / 1953	210	144	68.6	.839
Latin / Modern Portugese	200 v. / 1953	210	132	62.9	.806
Latin / Modern Rumanian	200 v. / 1953	209	117	56.0	.764
Latin / Modern Catalan	200 v. / 1953	208	126	60.6	.793
k (fraction-retained-per-millenium)					.8048

"We take this to mean," Lees concluded, "that on the average about 81% of the basic-root-morphemes of a language will survive as cognates after 1000 years, for all languages, at all times."[45] Nobody would want to stipulate such a generalization today, the more so as Swadesh's concept of basic vocabulary has been questioned, if not devaluated, by serious doubts regarding the cultural universality of its meanings and the criteria of selection. In the case of corpus languages, even the identification of words lexicalizing meanings of Swadesh's or any lists of basic vocbulary can be difficult.

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43 SWADESH, 1950, 1952 and 1955. See the following 100-items list in SWADESH, 1972: 283: "I - you (singular) - we - this - that - who - what - not - all - many - one - two - big - long - small - woman - man (adult male) - man (human being) - bird - dog - louse - tree - seed - leaf - root - bark (of a tree) - skin - meat - blood - bone - fat (noun) - fire - egg - horn - tail - feather - fish - hair - head - ear - eye - fingernail - nose - mouth - tooth - tongue (organ) - foot - knee - hand - belly - neck - breast - heart (organ) - liver - to drink - to eat - to bite - to see - to hear - to know - to sleep - to die - to kill - to swim - to fly - to walk - to come - to lie (as in a bed) - to sit - to stand - to give - to say - sun - moon - star - water - rain - stone - sand - earth - cloud - smoke - ashes - to burn - road - mountain - red - green - yellow - white - black - night - warm - cold - full - new - good - round - dry - name."

44 LEES, 1953.

45 LEES, 1953: 119.

To appreciate Lees's Egyptian-Coptic data which he owed to his Chicago colleague, Egyptologist Klaus Baer, one would certainly need to have more information, such as whether Baer was relying on Coptic dictionaries only, whether his compilation was thus restricted to non-Greek vocabulary, or if he also took Greek loanwords into account. After all, what remains interesting about Lees's outcome is that the pair of Middle Kingdom Egyptian and Coptic exhibits the *lowest retention rate* of all languages of the sample, ranking even behind Modern (vs. Old) English and Romanian (vs. Latin), two languages which underwent heavy relexification processes (see Table 2): this result, regardless of how accurate it may be, is the exact opposite of what nineteenth-century linguists and Egyptologists would have expected.[46]

Table 2: Highest and lowest retention rates in the 13 pairs of cognate languages tested by Lees, 1953.

Parent / Child language	Retention rate / millenium
Old High / Modern German	.854
Old Nordic / Modernes Swedish	.854
Latin / Modern Tuscan Italian	.839
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	.
Old / Modern English	.766
Classical Latin / Modern Romanian	.764
Middle Egyptian / Coptic	.760

A far improved approach to the resilience of lexical types from a repertoire of basic terms has recently been taken by Eitan Grossman and Stéphane Polis.[47] Their study on diachronic lexical semantics in Egyptian-Coptic is based on the much-refined concept of basic vocabulary proposed by Martin Haspelmath and Uri Tadmor as the "Leipzig/Jakarta list."[48] Grossman and Polis also systematically take the Greek loan vocabulary into account.[49] Without anticipating the publication of this study, I wish to advertise it as the deepest insight into the overall issues of diachronic change of the Egyptian lexicon achieved thus far.

But what outcome would we see if we were able to extend the question of retention and replacement over the entire Egyptian-Coptic vocabulary to its many thousand lexical types, instead of a selection of 200, and to take its lexical Methuselahs as well as its middle-aged words and its ephemeral components into consideration, instead of drawing preliminary conclusions from a selection of supposedly extraordinarily long-lived words? And how many vagaries could we clarify, if we could systematically check *token frequency* and therefore appreciate the processual character of the rise and decline of innovative and conservative lexical choices? These are

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46 See above and Richter, 2016c.

47 Grossman and Polis, forthcoming.

48 Haspelmath and Tadmor, 2010.

49 Based on the lemma list of the *Database and Dictionary of Greek Loanwords in Coptic*, which comprises about 5000 Greek loanword types, throughout all dialects, text genres, and periods of Coptic.

issues that bring me to the two final sections, which present two recent approaches to an integrated lexicon of the Egyptian-Coptic language, the projects "Structure and Transformation in the Vocabulary of the Egyptian Language" and "Database and Dictionary of Greek Loanwords in Coptic."

DIACHRONIC LEXICOGRAPHY OF EGYPTIAN-COPTIC: THE PROJECT "STRUCTURE AND TRANSFORMATION IN THE VOCABULARY OF THE EGYPTIAN LANGUAGE"

The first project I would like to introduce here is a long-term project of the Academies of Berlin and Leipzig in Germany.[50] As its full title "Structure and Transformation in the Vocabulary of the Egyptian Language. Texts and Knowledge in the Culture of Ancient Egypt" indicates, it addresses questions about the Egyptian-Coptic lexicon, such as:

- how was the Egyptian lexicon structured synchronically at any given time, according to parameters such as different periods, geographical regions, types of text, linguistic registers and semantic fields?
- how did the Egyptian lexicon change diachronically and driven by which language- and culture-internal or -external motives?
- and what does this tell us about how the Egyptians themselves conceived and classified their world, and how these concepts changed in the course of the millennia accessible to us by textual evidence?

Two core tools, and their construction, extension, and refinement, are the focus of this project's everyday work: the electronic full text corpus *Thesaurus Linguae Aegyptiae* (*TLA*) and a diachronically integrated word list, the *Vocabularium Totius Linguae Aegyptiae* (*VTLA*).

The first tool, the *TLA*, has been conceptualized and built up since the early 1990s in a forerunner project at the Berlin Academy.[51] It is inherited by the present project and, like any heritage, grants us the comfort of using it, while at the same time obliging us to foster and grow it. The *TLA* contains lemmatized and grammatically tagged transcriptions of Egyptian texts. Containing 1.4 million tokens by now, it is by far the largest available source of electronic language data of Egyptian. The range of texts included so far runs from Old Kingdom (third-millennium BCE) funerary inscriptions to late Egyptian religious compositions from the Ptolemaic (fourth–first centuries BCE) and Roman (first century BCE–third century CE) periods, attested in hieroglyphic inscriptions and hieratic manuscripts, as well as Demotic texts of several genres, ranging from the earliest ones of the twenty-sixth dynasty (seventh century BCE) to the latest ones dating to the later Roman period (third/fourth century CE).[52] Future goals include the integration of a corpus of Coptic texts and one of pre-Old Kingdom Egyptian texts.[53] All texts are accompanied by translations and commentary, and are annotated with metalinguistic data such as the type of text-bearing object, dating, provenance, genre of text, and

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50 At present, the team includes Angela Böhme, Ingelore Hafemann, Silke Grallert, Maxim Kupreyev, Simon Schweitzer, and Doris Topmann.

51 On this project, having continued the tradition of Erman's and Grapow's *Wörterbuch der Aegyptischen Sprache* by means of information technology and having thus become an early exemplar of what is called today Digital Humanities, see HAFEMANN and GRUNERT, 1999.

52 See <http://aaew.bbaw.de/tla/>. A relaunch of the user interface is currently under construction.

53 For the Coptic texts, we are in the happy situation that Wolf-Peter Funk has generously provided us with his enormous electronic data of virtually all Coptic minor dialects and a good chunk of texts from the Bohairic and

so on. The digitization of the corpus of Late Egyptian texts is the domain of our partner project RAMSÈS at the University of Liège, run by Jean Winand and Stéphane Polis.

The other core tool, the *VTLA*, an integrated word list of the entire Egyptian-Coptic vocabulary, is still under preparation. Two of its components, a hieroglyphic plus hieratic lemma list and a Demotic lemma list, are already implemented,[54] but not yet linked with each other. A third component, a Coptic lemma list based on Crum's *Coptic Dictionary*, has recently been finished,[55] but is not yet implemented in the system. Further components will be an index of consonantal roots underlying Egyptian word formation patterns and Greek as well as Arabic lemma lists containing the loan vocabulary that became part of the Egyptian lexicon in the first millennium CE.

The main goal of the *VTLA* will be the intergration of all these components into one single, diachronically inclusive structure, so as to form lexical chains of cognates of any Egyptian-Coptic word from its earliest up to its latest attestations in the written language. Moreover, since all the hundreds of thousands word attestations in the text corpus *TLA* are fully lemmatized and therefore automatically running in the background of the *VTLA*, token frequency will be a parameter instantly recognizible and accessible to systematic analysis.

Both tools, the *TLA* and the *VTLA*, have their primary aim within the research agenda of the project "Structure and Transformation in the Vocabulary of the Egyptian Language" and its diachronic persective. Both of them will eventually contribute to a broader objective: the development of a comprehensive digital dictionary of the Egyptian language, which has recently become a *desideratum* in international Egyptology, thanks to the initiative of Jean Winand, director of the RAMSÈS project, and his team.

LOANWORD LEXICOGRAPHY: THE PROJECT "DATABASE AND DICTIONARY OF GREEK LOANWORDS IN COPTIC" (DDGLC)

The project "Database and Dictionary of Greek Loanwords in Coptic" (DDGLC) began in 2010 at the Institute of Egyptology—Georg Steindorff—of the University of Leipzig, and recently moved to the Egyptological Seminar of the Free University of Berlin.[56] Funded by the German Research Council, it will be running until 2024. Making use of the wizardry of digital technology, we are confident that in this time, we shall break the old curse shrouding Greco-Coptic loanword lexicography.

The core tool of the DDGLC project is a multi-layered database: the *Greek lemma-list*—the highest structural level of its data—encompasses at this time more than 5000 Greek words of almost all parts of speech, including Greek nouns, adjectives, adverbs, verbs, conjunctions, prepositions and particles, from a wide range of semantic domains. This number (or whatever it will come to be in the end) is derived from the painstaking

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Sahidic corpora. For the pre-Old Kingdom texts we are collaborating with Jochem Kahl, protagonist of the lexicography of the earliest Egyptian language of Dynasties 0–3.

54 See http://aaew.bbaw.de/tla/servlet/BwlSearch?u=sebricht&f=0&l=0&db=0.

55 It already forms the backbone of the *Coptic Dictionary Online*, https://corpling.uis.georgetown.edu/coptic-dictionary/ of Georgetown University.

56 Current team members are Dylan M. Burns, Anne Grons, Katrin John, Elisabeth Koch, Frederic Krueger, Donald Malone, and Alberto Winterberg.

compilation of available indices from published Coptic texts and text corpora. It documents the entirety of Greek loan vocabulary in an undifferentiated Coptic of all eras, regions, and text-types.

The *attestation level*—the basic level of the database and the main workplace of everyday lexicographical labor—contains records of individual instances (tokens) of Greek-derived words (what in traditional lexicography used to be lexicographical slips). Approximately 75,000 single loanword attestations from a wide range of literary and nonliterary, dialectal and diachronic varieties of Coptic have already been incorporated in the DDGLC database.[57] An established lexicographical procedure allows us to increase our data by around 1700 attestations a month. Each attestation is linked to manuscript- and text-metadata, allowing to differentiate the borrowability of Greek words in Egyptian not just alongside linguistic features, but also according to sociohistorical parameters such as region, dating, content and genre or type of text. Each attestation is accompanied by a quotation of its context and an English translation thereof. The individual spelling of each loanword attestation is recorded, and a formal description of its syntactic properties as a part of Coptic speech is annotated by grammatical codes. In the case of nouns, for instance, these codes relate to nominal categories such as gender, number and determination; in the case of verbs they systematically provide information on Coptic verbal syntax, argument structure and valency patterns.[58] Each attestation is linked to a Greek lemma and to the *Coptic lemma interface*.

The *Coptic lemma interface*, the layer between the lemma level containing unspecified Greek input forms and the attestation level with its individual descriptions of specific instances, is the part of the database which is becoming increasingly similar to a finished dictionary. Recurrent types of usages are distinguished here according to explicit parameters such as morphology, semantics, pragmatics, syntactic properties, word formation patterns and phraseology.

The DDGLC project seeks to produce a systematic, comprehensive and detailed lexicographical compilation and description of Greek loanwords from the entire Coptic corpus in all its dialects and text genres. There are further plans to expand the DDGLC database in two directions: first, by the incorporation of Greek words

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57 One of the objectives from the beginning was to represent at any given time the highest possible diversity of local varieties, linguistic registers and different periods of Coptic in the loanword attestations. By now the data includes early Coptic literary and non-literary varieties (such as *P.Bodm.* III, VI; *P.Neph.*; *P.NagHamm.*), late Sahidic and late Bohairic varieties (such as Junker's tenth-century Coptic poetry, the Triadon, and the *Martydom of John of Phanijot*), selected pieces of Bohairic and Sahidic hagiographical and homiletic literature, selected manuscripts of the Sahidic Septuagint, the entire corpus of the Middle Egyptian dialect and minor dialects from Middle Egypt (V, W), the entire corpus of the Akhmimic dialect, Sahidic and Subakhmimic Gnostic texts from Nag Hammadi, specimens of Manichean literature, a good chunk of documentary texts—letters as well as legal documents—mostly from Thebes, larger magical manuscripts, and a good share of the extant medical manuscripts.

58 The data and annotations relating to borrowed verbs will soon be exploited by the German Israeli Foundation project "Transitivity and Valency in Language Contact: The Case of Coptic," with Eitan Grossman of Hebrew University and the present author as principal investigators.

in pre-Coptic Egyptian, notably in Demotic,[59] and second, by the integration of Arabic loanwords[60] in later Coptic texts. In the long run, the DDGLC project thus aims at including entire repertoires of loanwords in the Egyptian text corpus from the fourth century BCE up to the fourteenth century CE.

The future outcome of the DDGLC project is meant to serve the requirements and interests of numerous groups of scholars, such as Coptic and Greek philologists, Egyptian linguists, and general linguists. We want to provide Coptic philologists with detailed semantic and syntactic information on the Coptic usage of Greek words, historical linguists of Egyptian with data for the history of contact-induced change in the Egyptian lexicon, and general linguists with evidence for language contact and loanword typology.

The DDGLC data are not accessible online as of yet. A migration of the database and the data into a *MySQL* target system is underway and will allow us to offer an online user interface by the end of 2017. What we can already offer now is a by-product of our work, the *Gertrud Bauer Zettelkasten Online*.[61] It is a digitized card index containing about 15,000 token attestations of 150 types of Greek prepositions, conjunctions and particles in Coptic from the whole range of Coptic dialects and types of text, arranged on the basis of a detailed analysis of their semantic and syntactic properties. This admirable work was conducted by Gertrud Bauer, to whom this article is dedicated, in the 1970s and 1980s under the auspices of Alexander Böhlig at the University of Tübingen. With Gertrud Bauer's kind permission to make use of her work, we scanned the original slips and slotted them into a database replicating the hierarchical structure of the original compilation. It is our pleasure to provide the public with a new lexicographical tool which helps to cope with a particularly difficult and interesting kind of Greek loanwords in Coptic.

CONCLUSION

This article is a progress report and as such an inevitably ephemeral, preliminary piece of writing. So far I cannot offer many hard results; instead I had to resort to advertising two projects with which I have been charged, and to prefiguring their prospective benefits. Future benefits rest on the hopes of future success.

The two projects introduced here, "Structure and Transformation in the Vocabulary of the Egyptian Language" and "Database and Dictionary of Greek Loanwords in Coptic," respond to enduring *desiderata* in the lexicography of the Egyptian-Coptic language:

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59 The relevant data from Demotic manuscripts, especially late Demotic texts such as the London-Leiden magical papyrus, the medical papyrus from Krokodilopolis and the ostraca from Medinet Madi, ancient Narmuthis, will be entered into the database by Robert Kade who is working on a thesis entitled "Kontaktinduzierter Sprachwandel im Lexikon des jüngeren Ägyptisch."

60 On Arabic words in Coptic see most recently Richter, 2015b, 2016a, and 2016b.

61 Available online at http://research.uni-leipzig.de/ddglc/bauer/index.html. The work on this *parergon* to the lexicographical labors of the DDGLC project was funded by the Gertrud-und Alexander-Böhlig-Stiftung. The digitization of the original card index was conducted by temporary collaborators and volunteers in the DDGLC project: Jenny Böttinger, Claudia Gamma, Tami Gottschalk, Josephine Hensel, Katrin John, Mariana Jung, Christina Katsikadeli, and Elen Saif. The IT concept and programming were carried out by Katrin John and Maximilian Möller.

- the strict separation of the Egyptian lexicon into diachronic layers in the wake of the "Berlin school" of Egyptology and the structuralist methodological claim for synchronicity, and
- the Coptic lexicographers' disregard of the huge number of loanwords forming part of the Egyptian lexicon of the first millennium CE.

We now seem to be ready to take the way back, one floor up: to re-establish the diachronic integrity of the Egyptian-Coptic lexicon, to re-integrate the discarded loan vocabulary of its terminal phase, and, as a result, to gain a fuller picture of the most continuously documented case of diachronic retension and change in any human language—the case of Egyptian-Coptic.

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