BERLIN-BRANDENBURGISCHE AKADEMIE DER WISSENSCHAFTEN

Thesaurus Linguae Aegyptiae 3

Texte und Denkmäler des ägyptischen Alten Reiches, herausgegeben von Stephan J. Seidlmayer

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INHALT

VORWORT

Dieser Band geht auf eine Konferenz zurück, die die Arbeitsstelle Altägyptisches Wörterbuch an der Berlin-Brandenburgischen Akademie der Wissenschaften im Februar 2001 in der Tagungsstätte der Akademie in Schloß Blankensee bei Berlin ausgerichtet hat. Der Hermann und Elise geborene Heckmann Wentzel-Stiftung gilt unser Dank für eine Zuwendung, die diese Veranstaltung erst ermöglicht hat. Der Leiterin der Tagungsstelle, Frau Freia Hartung, und ihren Mitarbeiterinnen und Mitarbeitern, die die Tage im malerisch verschneiten Schloß zu einem unvergeßlichen Erlebnis des konzentrierten Austauschs werden ließen, wissen wir uns herzlich verbunden. Ebenso gilt unser Dank den angereisten Gästen wie allen Berliner Kollegen, Studierenden und Freunden, die vielfältig zum herzlichen und produktiven Charakter dieses Zusammenseins beigetragen haben.

Gegenstand der Tagung sollten die Texte und die Sprache des Alten Reiches sein. Hier zeigte sich in den Vorträgen, die im Rahmen der Konferenz präsentiert wurden und in den sich anschließenden Gesprächen einmal mehr, in welchem Maß dieses Forschungsgebiet durch den laufenden Zugewinn neuen Materials entscheidend geprägt wird. Die Verschränkung der Textzeugnisse mit archäologischen Kontexten, ihre Einbindung in ikonographische und epigraphische Zusammenhänge als Grundvoraussetzung ihres angemessenen Verstehens bildete denn auch ein Leitmotiv zahlreicher Projekte, über die berichtet wurde. Darin zeigt sich exemplarisch die charakteristische Situation gerade der altägyptischen Überlieferung, der sich auch jede systematische Erfassung und Erschließung des Textguts stellen muß.

Für den vorliegenden Band wurden die Beiträge der Konferenz teils wesentlich erweitert und aktualisiert. Den Autoren ist zu danken, daß sie sich der Mühe unterzogen haben, ihre Präsentation auch in schriftlich ausgearbeiteter Form vorzulegen. Die redaktionelle Bearbeitung wurde durch Angela Böhme übernommen und mit der gewohnten Sorgfalt durchgeführt. Doris Topmann ist für Hilfe bei den Korrekturen zu danken. Die Berlin-Brandenburgische Akademie der Wissenschaften hat die Herausgabe des Bandes bis in die Drucklegung unterstützt. Um die verlegerische Betreuung hat sich Dr. Norbert Dürring verdient gemacht. Ihnen allen sei auch an dieser Stelle herzlich gedankt.

Berlin, im August 2005 Stephan Johannes Seidlmayer

OLD EGYPTIAN AND PRE-OLD EGYPTIAN

TRACING LINGUISTIC DIVERSITY IN ARCHAIC EGYPT AND THE CREATION OF THE EGYPTIAN LANGUAGE

FRANK KAMMERZELL

Summary

Die Erscheinungsform einer bestimmten Einzelsprache resultiert aus dem Nebeneinander und Zusammenwirken *vertikaler* und *horizontaler Transmission* von sprachlichen Merkmalen und umfaßt demzufolge normalerweise neben Phänomenen, die über eine Kette früherer Sprechergenerationen ererbt wurden, auch solche, die aus anderen Sprachen entlehnt wurden. Deutliche Spuren einer komplexen Entstehungsgeschichte und der Interaktion verschiedener Sprachgemeinschaften lassen sich nicht erst im Altägyptischen oder gar erst in der Sprache des Neuen Reiches ausmachen, sondern bereits die frühesten schriftlichen Quellen aus der Zeit um 3000 v. Chr. erlauben – trotz ihrer Knappheit – überraschende Einblicke in die zeitgenössischen sprachlichen Verhältnisse. Bislang nur durch Sprachvergleich rekonstruierbare Entwicklungen sind nunmehr historisch nachweisbar, und das phonologische System einer dem Altägyptischen vorausgehenden und erheblich von ihm abweichenden Sprachstufe wird greifbar. Da das *Voraltägyptische* ein für eine afroasiatische Sprache eher untypisches Konsonanteninventar besitzt und sich zudem lexikalische Übereinstimmungen (nicht-genetischer Natur) mit indoeuropäischen Sprachen abzeichnen, erscheinen fundierte Hypothesen über die Herausbildung des Ägyptischen nicht länger unmöglich. Damit wäre das Ägyptische nicht nur die am längsten bezeugte Einzelsprache der Menschheitsgeschichte, sondern wohl auch die einzige, die von ihrer Entstehung bis zu ihrem Aussterben schriftlich dokumentiert ist.

1. Theoretical setting

A simplified classification of scholars of modern Linguistics according to their respective approach towards language might result in a grouping that includes (among others) the following parties:

- *Individual Language Grammarians* study utterances, rules, and the system of a particular tongue in a synchronic or diachronic perspective and aim at understanding the way its elements and sub-systems operate, interact, vary, came into being and changed.
- *Generative Linguists*, working in the field of *Universal Grammar*, treat language as a formal system and are interested ultimately in understanding how the language faculty is embodied in the human brain.
- *Comparative Linguists* deal with similarities and dissimilarities between different individual ("genetically related") languages, which are explained as being obtained from a common source by vertical transmission from one generation of speakers to the subsequent one. Their remote aim is to reconstruct and locate in space the common proto-language.

– *Typologists* investigate similarities and dissimilarities between languages that are not necessarily genetically related to gain insight into the frequency, distribution, and co-occurence of particular linguistic features in the languages of the world.
– *Areal Linguists* (or *Areal Typologists*) are interested in to what extent and because of which factors geographically adjoining languages, be they genetically related or not, share common linguistic features.

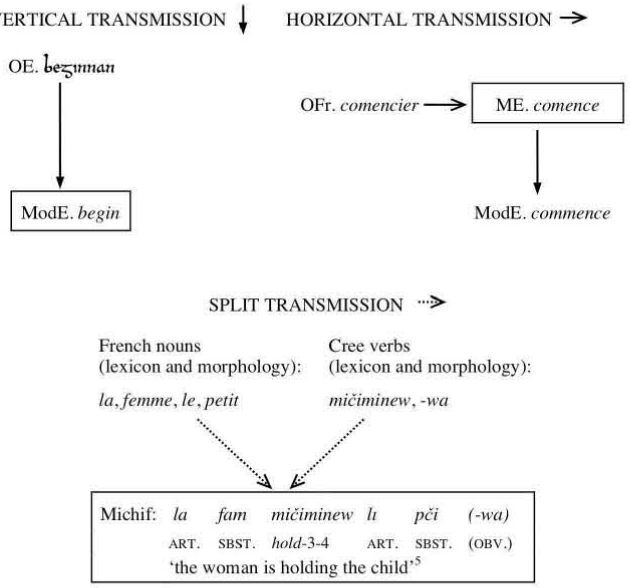
The approach of this paper differs fundamentally from Universal Grammar and may be best located in a domain where individual language studies, Comparative Linguistics, Areal Typology, and Sociolinguistics overlap. Language-specific linguistic features of a given idiom are not considered as inherent qualities of an abstract formal system but as more concrete elements constituting a communicative medium and reflecting the actual communicative practice of a community of speakers. Even though comparisons between linguistic features of different languages play a role, the reader must not expect a typical comparative study. In many cases, a genetic relationship between the respective items can be definitely ruled out.

The notion *linguistic features* is understood in its broadest sense and thus shall be applied not only to morphological and lexical elements or syntactic structures, but also to such dissimilar items as phonological units, phonetic properties, pragmatic rules and idiomatic expressions, determining, for instance, about what it is appropriate to talk in a certain community of speakers and how to put particular situations and events into words. Features as such constitute an indispensable supplementation of the innate human language faculty and have to be acquired by their users. The acquisition takes place by means of transmission from one speaker or group of speakers to another. There are two principal ways of transferring linguistic features: *vertical transmission* works within the speech community of one particular language from one generation to the subsequent ones (usually from parents to children), while *horizontal transmission* may take place between speakers of distinct languages or different varieties of one language. A typical result of vertical transmission is the bulk of "inherited" words and structures of a language, whereas cases of interference and borrowings emerge from horizontal transmission. A special case that has gained some attention in recent years is what may be called *split transmission*: the non-genetic formation of a *mixed language* by deriving particular sub-systems from one language, while others are supplied from a different source. Notable examples of languages that emerged in this way are Ma'a (or Mbugu, spoken in north-eastern Tanzania), that combines Cushitic basic vocabulary with Bantu grammar,[1] Media

[1] See THOMASON and KAUFMAN (1988: 223–228), BAKKER and MUYSKEN (1995: 46), MOUS (1994), SEBBA (1997: 265–266).

Lengua (central Ecuador), which replaced Quechua lexemes with Spanish stems while retaining Quechua grammatical features,[2] Mednyj Aleut (Commander Islands in the Bering Sea), that shows Russian inflectional morphology on finite verbs but maintains Aleut features in the rest of the grammar,[3] and Michif (Western Canada, North Dakota and Montana), which exhibits a lexicon (above all nouns, including numerals and articles) derived from French and a Cree grammar (primarily verbal morphology, but also demonstratives, postpositions, question words, and personal pronouns).[4] The different types of language transmission are illustrated in the diagram below.

(1)



[5]

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[2] See BAKKER and MUYSKEN (1995: 43–45).

[3] See THOMASON and KAUFMAN (1988: 233–238), GOLOVKO (1994), SEBBA (1997: 266–267), MITHUN (1999: 596–598).

[4] See THOMASON and KAUFMAN (1988: 228–233), BAKKER (1997), SEBBA (1997: 266). THOMASON and KAUFMAN (1988: 229) describe the split as one between the nominal and the verbal systems. BAKKER and MUYSKEN (1995: 45), however, prefer to draw a line of demarcation between Cree grammar and French lexicon, since verbs in Cree tend to consist of bound morphemes only.

[5] The example is taken from THOMASON and KAUFMAN (1988: 230).

While, for methodological reasons, Historical Linguists often exclusively focus their attention on cases of vertical transmission, it is manifest that most if not all human languages have acquired their contemporary appearance not without the impact of horizontal transmission. Each speaker of an individual language does not only copy the linguistic system (s)he has inherited from her/his parents, but is also in contact with other speakers, who use a slightly different system, or a distinct dialect, or even a foreign language. The quota of persons growing up in a bilingual or multilingual environment and speaking more than one language today has been computed at about two thirds of the world's population,[6] and there is no reason to assume that the proportion was considerably lesser at a time prior to the formation of national states. Thus, monolingualism should perhaps be considered rather an exception than the rule in the history of human communication. Nevertheless, the effect that language contact and language shift – the abandonment of one communication system by its speakers in favour of another – may have on linguistic change is often dramatically underestimated, and A. Martinet's dictum that only internal developments be of any relevance for linguists[7] has not yet been overcome everywhere.

An increasing similarity between source system and target system is a normal consequence of the transmission of linguistic features from one language to another.[8] At the same time, transmission eventuates in an extension of complexity or an increase of variation within the goal system. The main part of this paper deals with variation in what until now has been considered a more or less homogeneous chronolect – customarily referred to as "Old Egyptian"[9] – as well as with lexical similarities between Egyptian and other languages.

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[6] See CRYSTAL (1997: 14).

[7] Cf. MARTINET (1963: 163–164).

[8] Other causes of similarities between different languages are mere chance, onomatopoeia, and universal properties of the innate human language faculty. Perhaps one should also consider the possibility of a convergence of two systems without immediate transmission (or exchange) of features: Speakers of two distinct languages trying to communicate with each other but having no common language may modify their respective mode of speech in a way that the resulting utterances share similarities which do not belong to either system. If encounters as such occur on a habitual basis, they may have considerable impact on the respective languages and eventually cause a process of convergence of the two systems. In particular linguistic and socio-cultural situations, language shift, the creation of a pidgin, or abrupt creolization – like, e.g., in the case of Pitcairnese (see HOLM 1989: 546–551) – are possible outcomes of language contact as well (cf. THOMASON and KAUFMAN 1988: 110–199).

[9] Certain cases of variation and diachronic change within Old Egyptian, especially differences between the language of the Pyramid Texts and that of other texts, have indeed been described (cf. EDEL 1955/64: §§ 12–15) and gave rise to divers speculations upon a dialectal division of Egyptian (cf. EDGERTON 1951: 11–12, EDEL 1955/64: §§ 21–22, SATZINGER 1994: 202–204). The fact that the conclusions drawn by different scholars are contradictory

Whereas the exposition here and there is rather technical (especially in the sections dealing with the graphophonemic and phonological foundations of the investigation), I should like to stress that – in a way contrary to the amount of space devoted to it – reconstructing the sound shape of Pre-Old Egyptian is all but a major focus of this paper. To know how a specific linguistic element was precisely pronounced at a certain point of time is *per se* of no particular concern – and perhaps not even attainable with a satisfactory degree of certitude. If, however, a minute analysis of the relations between the elements of written and of spoken language enables us to gain insight into the speech behaviour of a linguistic community and its members' interaction with other people, and if this in turn reveals extra-linguistic processes which may be related to evidence of a distinct type (e.g., archaeological findings) and even tell something about how the Egyptian language came into being, the situation is different. Readers who are less interested in linguistic details than in their historical implications can pass over Chapters 4, 5.2 and 5.3 without losing too much of the general issue of this paper.

2. *Lexical variation indicating interactions of linguistic communities*

2.1 The lexical stock of a particular language often – especially if we are dealing with one that has been (or was) attested in written form for a considerable span of time – may be classified as consisting of several historical strata. As a consequence of successive occasions of language contact bringing about lexical borrowing by horizontal transmission, many languages exhibit sets of synonyms or nearly equivalent lexical items, the individual members of which were supplied from different sources at distinct points of time. If there are ample clusters of words appearing for the first time more or less simultaneously, belonging to the same semantic domains, showing common linguistic features (e.g. a particular phonological or morphological structure hitherto uncommon in that very language), or suggesting the same source language, they convincingly indicate the presence of contacts between different speech communities – even in case there is no further, extra-linguistic evidence for any cultural and linguistic impact available.

English is a well-known example of a language that underwent heavy borrowing. Several groups of near synonyms including rather basic words of Modern English are presented under (2).[10]

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to a high degree, may be taken as an indication that detailed studies on diatopic variation in Earlier Egyptian are still wanting (for the time being see ROQUET 1979; PANTALACCI in this volume).

[10] The sources of the English etymologies presented in this paper are ONIONS (1996) and HOAD (1986). A modern account of the historical development of English has been provided by BARBER (2000).

(2)

Germanic stock	Borrowings into ME.	Borrowings into ModE.
begin (OE. *beginnan*)	*commence* (14th cent.)	*initiate* (17th cent.)
OE. *friþ* (now obsolete)	*peace* (12th cent.)	*harmony* (16th cent.)
great (OE. *grēat*), *mickle* (dial., OE. *micel*)	*large* (12th cent.), *big* (13th cent. ←Scand.?)	*colossal* (18th cent.)
heart (OE. *heorte*)		*cardio-* (19th cent.)
leader (OE. *lǣdere*)	*chief* (13th cent.), *chieftain* (14th cent.), *captain* (14th cent.)	*boss* (19th cent. ←Dutch), *chef* (19th cent.)
old (OE. *ald*)	*ancient* (14th cent.)	*antique* (16th cent.), *archaic* (19th cent.)
show (OE. *scēawian*)	*display* (14th cent.)	*indicate* (17th cent.)
sick (OE. *sēoc*)	*ill* (12th cent.)	*indisposed* (16th cent.)
ward (OE. *weard*)	*defender* (13th cent.), *guard* (15th cent. ←Fr. ←Gmc.), *protector* (14th cent.)	*sentry* (17th cent.), *sentinel* (18th cent.)
watch (OE. *wæccan*)	*observe* (14th cent.)	*scrutinise* (17th cent.)

The segment depicted is just microscopic, but still sufficient to substantiate a rough historical classification of the English lexicon and to shed light on what we might come across in diachronic lexicology: (a) Three of the more prominent lexical strata of Modern English are clearly to distinguish – words attested since the Old English period (c. 700–1100 AD) and constituting the "inherited" Germanic stock, elements borrowed into Middle English from French via Anglo-Norman, as well as learned loans of the 16th–19th centuries. Moreover, we are able to define in a general way a few structural characteristics of the respective strata. Words of Germanic origin are on the average shorter in shape than loans from Romance languages, while several of the last-named show typical elements of Latin word-formation (e.g. the derivative affixes *de-*, *con-*, *in-*, *dis-*, *-tor*) as well as orthographic properties uncommon in "native" words (e.g. *-que*). On the other hand, individual words once borrowed from a foreign language need not show any distinguishable structure as compared with the original lexical stock (cf. *big*, *ill*, *boss*). (b) We notice that it is not impossible that one and the same lexeme of a source language is borrowed more than once into a particular target language, e.g. into distinct dialects or chronolects. Different paths of borrowing often result in different forms (cf. ModE. *chief*, *chieftain*, *captain*, and *chef*, all having its origin in formations on the base of Lat. *caput* 'head'). (c) Furthermore, it may happen that a word is re-loaned from a foreign

language that had taken over the very item earlier from an earlier chronolect of what is now the target language or a closely related idiom. So, for instance, English adopted Fr. *garde* (ModE. *guard*) during the 15th century and thus acquired a word which may be traced back to the same Germanic source like inherited *ward* (OE. ⲣⲉⲁⲣⲇ *weard*), as Fr. *garde* for its part was borrowed from Frankish.

A similar scenario like the one sketched in the preceding sections can be observed in Later Egyptian. The table under (3) illustrates three distinct layers in the lexicon, two of which are the consequences of borrowing. As in the case of English, loan-words sometimes show particular orthographic and/or phonological structures.

(3)

"Original" stock	Borrowings into LEg.	Borrowings into Copt.
jf 'flesh' > ⲁϥ		ⲥⲁⲣⲝ 'flesh'
wꜣḏ-wr 'sea'	*ym* 'sea' > ⲉⲓⲟⲙ	ϩⲁⲗⲁⲥⲥⲁ 'sea'
mrr.t 'street'	*ḫr* 'street' > ϩⲓⲣ	ⲡⲗⲁⲧⲓⲁ 'street'
ns.t 'throne' (> ⲛⲏⲥⲉ 'stair, step, bench')	*jsb.t* 'throne'	ⲑⲣⲟⲛⲟⲥ 'throne'
ḥtp 'peace' > ϩⲱⲧⲡ	*šlm* 'peace'	ⲉⲓⲣⲏⲛⲏ 'peace'
šmꜣ 'alien' > ⲱⲙⲙⲟ	*qrj* 'alien' > (ⲣⲙⲛ)-ⲍⲟⲓⲗⲉ	ⲃⲁⲣⲃⲁⲣⲟⲥ 'alien', ⲁⲗⲗⲟⲧⲣⲓⲟⲛ 'alien'
n'.t 'town', *dmj* 'town' > ϯⲙⲉ	*qrt* 'town' (only in toponyms)	ⲡⲟⲗⲓⲥ 'town'
ḏnd 'rage' > ⲍⲱⲛⲧ	*hsmq* 'rage'	ⲟⲣⲅⲏ 'rage'

2.2 Until now, we have dealt exclusively with cases of language contact that took place in historical periods and distinguished between an "original" stratum on one side and later loans on the other side. However, not every lexical item that is attested from the very beginning of a particular language's history necessarily belongs to the "inherited" stock of vocabulary. This is illustrated by the words quoted under (4), which are extant already in Old English texts but nevertheless have a non-Germanic origin and form another important stratum of the English lexicon.[11]

[11] For a more comprehensive survey of the different strata in the borrowed lexicon of English see, e.g., SKEAT (1884: 603–612), MCARTHUR (1992: 143–145).

(4) *bishop* < OE. bisceop ←PopLat. **biscopus* < ecclLat. *episcopus* ←Gr. ἐπίσκοπος
church < OE. cirice, circe, cyrice, cyrce < WGmc. **kirika* ←medGr. κυρικόν < κυριακόν 'pertinent to the Lord'
cross < OE. cros ←ON. *kross* ←OIr. *cros* ←Lat. *crux*
muscle < OE. muscle ←Lat. *musculus*
rose < OE. rose ←Lat. *rosa* ←... (?) (further history dubious)
sack < OE. sacc ←Lat. *saccus* ←Gr. σάκκος ←AA ... (?)[12]

Most of these lexemes were borrowed from or via Latin at a time prior to the earliest attestation of written English. As such, they give some hints about language contact in what is the prehistory of English. As there are other, textual sources providing information about the historical situation in Roman and Early Medieval Britain, the linguistic findings – although a welcome corroboration of our knowledge about the role Roman culture and the Latin language played in North-western Europe during that period – are not as essential as they would be, if we had nothing besides them but some scarce archaeological evidence.

2.3 The immediate aim of this paper is to suggest that different lexical strata already existed in Old Egyptian, to identify (segments of) them and to trace the early history of some Egyptian lexical elements and their relationships with elements of other languages. As a result, the view is taken that (at least) two distinct linguistic communities had taken an active part in the formation process of the Egyptian language, that Egyptian had not developed lineally from an Afroasiatic proto-language, and that the – perhaps non-genetic – emergence of Egyptian had happened not long before the beginning of its written documentation. Finally we will ask, whether it is possible to verify the presence of several different groups of speakers for a time as late as the Old Kingdom. Yet, before entering upon the study of the lexicon, it is necessary to touch another topic: the phonological system of the earliest written documents.

3. Reconstructing the sound shape of Earlier Egyptian – a short review

3.1 In order to be able to recognise other languages (or language families) as possible sources – or targets – of Egyptian lexical items, one must have some ideas about the historical sound shape of Egyptian. Inasmuch as we are dealing with possible language contacts of Earlier Egyptian, a basic knowledge of the phonological system of Old Egyptian (and, as will be seen soon, of Pre-Old Egyptian as well) is indispensable.

[12] The specific source of borrowing is not known; cf. Hebr. *śaq*, Akk. *šaqqu*; LEg. *sg* 'sackcloth', Copt. **сок**, **сωк** 'sack, sackcloth, bag'. OEg. *s3q* 'collect' should probably not be connected, cf. HOCH (1994: 269, no. 383), PEUST (1999a: 112 no. 120).

Even though by now most Egyptologists are well aware that any of the customarily used transcription systems (be it according to GARDINER 1957, to ERMAN and GRAPOW 1957, to EDEL 1955/64, FECHT 1960, OSING 1976, or to SCHENKEL 1983) is conventionalised to a high degree and rather unhistorical,[13] it might be appropriate to give some condensed information about the procedures, results, and consequences of reconstructing the phonological system of the chronolects preceding the New Kingdom.[14]

3.2 It is a well-known fact that the first successful efforts to establish the sounds corresponding with hieroglyphic and Demotic signs strongly depended on Egyptian transcriptions of foreign words as well as on Egyptian words represented by means of other writing systems. Representations of the Greek basilonyms Κλεοπάτρα, Πτολεμαῖος and Ἀλέξανδρος in Demotic and hieroglyphic script served J.-F. Champollion as a key for deciphering Egypt's autochthonous writing system (CHAMPOLLION 1822: 6–20), and at the same time he was also able to recognise the hieroglyphic equivalents of Egyptian king names known from classical sources. Subsequently, the identification of Hieroglyphic-Egyptian elements with their Coptic counterparts, the analysis of what Semitic lexemes and proper names occurring in Egyptian texts tell about the function of particular Egyptian graphemes, and the study of Egyptian linguistic items written in the Hebrew alphabet or in Akkadian cuneiform script gained some importance (cf. SCHENKEL 1990: 28–33). These procedures have in common one crucial disadvantage: they do not produce reliable results for the chronolects prior to the New Kingdom. Moreover, as a consequence of filter processes operating when people using two distinct phonological systems communicate with each other, the evidence obtained by studying transcriptions of foreign language material must not be considered direct.[15]

By means of comparative inquiries, scholars have linked Egyptian lexemes with genetically related elements of other Afroasiatic languages and thus were able to expand the temporal scope of investigations on Egyptian sounds and to reconstruct the "original" shape of Egyptian phonemes. Two

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[13] On the nature of the conventional Egyptological transcription system, see KAMMERZELL (1995: XXXVII–XXXIX).

[14] The main sources of the following paragraphs are RÖSSLER (1971), SCHENKEL (1990: 24–93), SCHNEIDER (1997), PEUST (1999a), KAMMERZELL (1998 and 1999b).

[15] Cf. KNAUF (1982: 31–32) and see SÁENZ-BADILLOS (1993: 80–86) on the role of Greek and Latin transcriptions of Biblical Hebrew words and BLAU (1998: 267–271) on "pitfalls of transcriptions in other languages" biassing the reconstruction of Proto-Canaanite. Further complications arise from the circumstance that phonological interpretations of Akkadian or Biblical Hebrew graphemes are not necessarily self-evident. This is an all but trivial obstacle, and one should be well aware of it, even if we are not in a position to solve it.

things are to be kept in mind: Evidence gained by means of genetic comparisons resembles the analysis of foreign transcriptions in that it is always of an indirect nature. To state that a particular Egyptian consonant has a cognate sound in Semitic does not imply that the respective two phonemes are identical with respect to their phonetic distinctive features, since either in Egyptian or in Semitic or in both language groups a sound change might have taken place.[16] Further shortcomings result from the fact that now and then we may find several lexemes within one language each of which at first glance looks as if it were a promising candidate for an etymological identification with a particular word of an genetically related language.[17] And: There is a temporal gap of several millennia between what may be determined as the sound shape of Later Egyptian by means of analysing foreign transcriptions and what can be reconstructed by way of etymological considerations.

3.3 Due to the accidental circumstance that the shape of lexical roots in Old Egyptian is controlled by a set of strict rules of phonotactic well-formedness, this breach can be filled to a good deal. From the compatibility of those elementary graphonemes the sound shape of which has been determined with a fair degree of certainty, it becomes apparent that the place of articulation is

[16] The fact that Old Egyptian 𓄡 ⟨j⟩ is not only the equivalent of Semitic *r, but may also occur in words the Semitic cognates of which show *l (cf. RÖSSLER 1971: 311–312, SCHENKEL 1990: 53, SCHNEIDER 1997: 193–198, nos. 2, 22, 32), does not prove the presence of /l/ in the respective Egyptian words but should rather make us seek in either linguistic system for conceivable environmental conditions which might have caused a sound change *r > *l (in Semitic) or *l > /r/ (in Egyptian). Alternatively, we might feel urged to reconstruct – besides AA *r > Sem. *r, Eg. /r/ and AA *l > Sem. *l, Eg. /l/ – an additional Afroasiatic phoneme (distinct from *r und *l) that developed into *l in Semitic and into /r/ in Egyptian. But these are not yet all possible prospects. The irregular correlation may indicate that the respective words were not acquired from a common Afroasiatic stock but had been borrowed in one or other direction or from a third language.

[17] Egyptological discussions of recent years have shown that the decision between competitive candidates for an etymological comparison is not an easy task, cf. the divergent attitudes towards Egyptian-Semitic etymology propagated, e.g., by OSING (1980, 1997, 2001), OREL and STOLBOVA (1995), and TAKÁCS (1999) on one side, or by RÖSSLER (1966, 1971), SCHENKEL (1990), SATZINGER (1994, 1997), SCHNEIDER (1997), PEUST (1999a), and KAMMERZELL (1998, 1999b) on the other side. Contrary to what one may believe, the most promising approach is not necessarily the one generating less complicated rules of correspondence nor that which brings forth the largest number of cognates, but that which can account for and explain a maximum of significant linguistic phenomena without violating general linguistic principles the validity of which is based on cross-linguistic evidence.

The least intricate candidates for etymological identifications are elements having a meaning which may be precisely distinguished and rarely undergoes semantic change, above all fundamental grammatical morphemes like derivational affixes, pronouns, and numerals (cf. KNAUF 1982: 32). The sound shapes of Egyptian consonants occuring in such elements are scarcely controversial among advocates of the divergent "schools".

the predominant constraint. Non-identical obstruents of the same place of articulation do not co-occur within the limits of one morpheme (cf. RÖSSLER 1981: 175–177, ROQUET 1973, BAER 1985). By means of correlating the compatibilities of all elementary graphonemes the graphemic side of which consists of an obstruent or an sibilant – and without necessarily having any preknowledge about the sound shape of a single graphoneme –, we discover that the respective matrices of compatibility cluster into four groups (see KAMMERZELL 1998: 30–32):

(5) a. ⟨p⟩, ⟨b⟩, ⟨f⟩,

b. ⟨t⟩, ⟨d⟩, ⟨ᶜ⟩, ⟨z⟩,

c. ⟨ṯ⟩, ⟨ḏ⟩, ⟨k⟩, ⟨q⟩, ⟨g⟩,

d. ⟨š⟩, ⟨ḫ⟩, ⟨ḥ⟩, ⟨ḫ⟩.

Combining these findings with etymological considerations, we learn that consonants corresponding with elementary graphemes of one particular group once belonged to the same place of articulation. By this means, O. Rössler was able to demonstrate that the sound shape of several Egyptian phonemes once must have differed considerably from what had been reconstructed on the basis of New Kingdom transcriptions.[18] The most consequential disparities between the traditional assumptions, prevalent since the early 20th century, and Rössler's suggestions apply to the following graphonemes:

- ⟨d⟩ did not regularly correspond with the voiced alveolar stop /d/, but with its emphatic counterpart /t'/ – which, however, does not imply that this elementary grapheme never occurred as a counterpart of spoken /d/.[19] In Late Egyptian ⟨d⟩ served as a makeshift notation of those (not particularly frequent) instances of old /d/ which had not undergone the weakening process /d/ > /ʕ/. Moreover, there are a few convincing

[18] Cf. RÖSSLER (1971), SCHENKEL (1990: 43–57). As a result, several then well accepted comparisons of Egyptian and Semitic lexemes must be reconsidered. In the course of the discussion between scholars who favour Rössler's approach und those adhering to the traditional concept, one crucial issue failed to attract attention: Even though various of the older etymologies can no longer be interpreted as indicators of a genetic relationship between Egyptian and Semitic, they did not become entirely obsolete. On the contrary, many of the traditional etymologies kept their significance (as valid identifications of two elements deriving from one source) and are even more valuable now, since they must be no longer traced back to a hypothetical common source in a remote past but rather interpreted as borrowings and thus indicating a contact between the respective languages which can be located in historical times.

[19] On OSING's (1997) arguments in favour of the "traditional" interpretation of ⟨d⟩ as /d/, cf. SATZINGER (1999).

cases of Old Egyptian ⟨d⟩ matching Semitic *d. Whereas some of these may be considered the results of cross-linguistically common phonetic processes[20], others cannot be explained yet and may hint at borrowing.[21]

- ⟨ḏ⟩ likewise did not correspond with a voiced consonant, but was the standard graphemic counterpart of an emphatic back obstruent obviously realised as /c'/ in Old Egyptian.
- ⟨ᶜ⟩, in contrast of what renderings by means of Hebrew ע ⟨ᶜ⟩ suggest for a later period, did not correspond with a low back fricative or glide at the time, when the rules of compatibility were valid. Instead, the respective phoneme may be determined as a voiced dental obstruent /d/, which was cognate with Semitic *d,*z,*ð, and *d' (and might have had matching allophones or even be separated into several phonemes).
- ⟨z⟩ in general did not correspond with a voiced alveolar fricative, but with voiceless /s/ or /θ/.
- ⟨ḫ⟩ corresponded with a voiceless non-anterior fricative /x/ or /χ/, belonging to the same place of articulation as the consonant that is written ⟨ḥ⟩. The traditional opinion that ⟨ḫ⟩ was pronounced /ç/ in Earlier Egyptian[22] cannot be sustained.
- ⟨ḥ⟩ probably corresponded with the voiced counterpart of /x/ or /χ/, /ɣ/ or /ʁ/.

3.4 The problem as to when the old phonemes, disclosed from the study of compatibilities and Afroasiatic etymologies, shifted to sounds close to those which can be reconstructed by means of New Kingdom and later transcrip-

[20] E.g. AA *prd- 'four' > OEg. *fd.w* /fiˈtˈaw/ or /fiˈdˈaw/. In this case, the modification of *d was caused by contact with *r (cf. KAMMERZELL 1994: 23–24 with no. 55).

[21] TAKÁCS (1999: 240–245) has presented almost 30 examples of Eg. ⟨d⟩ corresponding with Sem. *d. Even though some of those are implausible for semantic reason and in several cases the time of attestation is so late that they might be makeshift notations of unchanged *d, there is a core group of equations deserving special attention, in particular: (a) the group  *wdj/dw* 'place, put, cast', OEg.  *wdn* 'enthrone, lay down offerings', OEg.  *ndj* 'throw down' (*Pyr*. 819a[P.M.N], 957c[P.M.N], 1256b[P.N]), Hebr. *ydh* 'shoot' (Qal), 'cast' (Pi[cc]el); Akk. *nadānu* 'give', Hebr. *ntn* 'give', Ug. *ytn* 'give'; Akk. *nadû* 'throw, lay down'; (b) OEg.  *jd* 'boy' (e.g. MARIETTE 1889: 113, col. 2; 156, line 12), MEg.  *jdy.t* 'girl' (pWestcar 12,14), Akk. *līdu* 'child', Eth. *ləd* 'child, son'; probably related to MEg. *jd.t* 'uterus, womb' (*CT* II 213c), Bedja *ʾad*, *ʾaḍ* 'vulva, pudenda'; (c) OEg. *dmj* 'red linen' (*Pyr*. 1202b[P]), variant (?) *jdmj* (*Pyr*. 1202b[M.N]), Akk. *adammu* 'red', *adammu* [kind of garment], Qabyle (Berb.) *ddemdem* 'be violet', Awngi (Cush.) *dəmmi* 'red'. NB: There are some irregular correspondences among the attestations in other languages, too, cf. NWSem. *ntn*, *ytn*, Bedja *ʾaḍ*.

[22] Cf. EDEL (1955/64: § 120).

tions, was discussed controversially in a series of contributions by ZEIDLER (1992: 206–210), SCHENKEL (1993), and KAMMERZELL (1999b). In the case of ⟨ᶜ⟩, the former two have suggested that – not later than during the Sixth Dynasty (c. 2297–2166 BC) but likely already much earlier – the originally corresponding phoneme *d had been weakened to /ʕ/ in one particular diatopic or diastratic variety of Egyptian, while it had changed into /t'/ in another variety and left traces in Late Egyptian writings with  ⟨d⟩ instead of ⟨ᶜ⟩.[23] My own approach to some extent differs from this, especially in respect of how to understand synchronic and diachronic variations of written forms. Of particular concern is the conviction that a variation of graphemes (which correspond with phonological units) does not necessarily imply an analogous variation of spoken elements. We must not expect, that a language which had been in use as a medium of written communication for several centuries exhibits entirely regular correlations between elementary meaning-differentiating graphemes and minimal segments of the spoken language. In other words: there is no aged writing system in which each "uni-consonantal" sign always corresponds with one and the same consonantal phoneme. Anybody intending to establish an analysis of the Egyptian sound system on the basis of one-to-one correspondence rules between written signs and sounds first has to explicitly disprove this fact, which is widely accepted among grammatologists. A systematic analysis of synchronic and diachronic variation of written forms may serve as a suitable procedure to reconstruct the existence of – often secondarily acquired or somewhat marginal – sounds[24] which do not correspond regularly with one particular elementary grapheme.[25] In order to illustrate the principle, we will have a look on one particularly lucid case, that has not yet been discussed in detail.

As far as we know, the inventory of the hieroglyphic script does not contain any sign serving as an elementary grapheme that corresponds regularly with a velar nasal /ŋ/. Consequently, this sound in general has not been considered an element of the Egyptian consonantal system. The absence of a special elementary grapheme for "representing" the nasal /ŋ/ is a property the Egyptian script shares with many other writing systems. Irrespective of the circumstance, whether a language has or has not a velar nasal /ŋ/ functioning as a phoneme, a particular sign corresponding with this sound – be it a plain

[23] See ZEIDLER (1992: 208–209), SCHENKEL (1993: 140–144) and cf. also LOPRIENO (1997: 434–436).

[24] According to Ian Maddieson (p.c.), *marginal sounds* should be classified in two distinct categories, those which are rare, but occur in common words (e.g. ModE. /v/), and those appearing only in special expressions (e.g. ModG. [m͡ŋ] in *(m)njamnjam* 'dainty-dainty', [ǁ] in *Hü! Hott!* [ǁ-ǁ] 'gee up', ModE. [!] in *tut-tut* or *tsk-tsk*).

[25] See KAMMERZELL (1998: 33–35).

sign like in (6a) or a base grapheme modified by means of a diacritic element like in (6b) – is not very common outside the Indian subcontinent and adjacent areas. Instead, /ŋ/ may correspond with the standard sign of a velar obstruent (6c) or an anterior nasal (6d), or with a combination of more than one grapheme (6e). Cases of variation within one particular language also occur, see (6f).

(6) Graphemic devices corresponding with /ŋ/

a.	⟨ŋ⟩ /ŋ/	ङ	in OI. प्राङ् *prāṅ* /praːŋ/ 'eastern' (nom. sg.)
		ང	in Tib. ངག་ *ṅag* /ŋa/ 'speech'
b.	⟨ŋ⟩ /ŋ/	ڭ	(Osm., base: ⟨ ⟩ /k/)
		غ̇	(Mal., base: ⟨ ⟩ /ʕ/)
c.	⟨g⟩ /ŋ/	γ	in Gr. ἄγγελος /ˈaŋgelos/ 'messenger'
		𐌲	in Goth. 𐍃𐍄𐌹𐌲𐌲𐌰𐌽 *stigqan* /ˈstiŋkʷan/ 'clash'
d.	⟨n⟩ /ŋ/	*n*	in Lat. *angelus* /ˈaŋgelus/ 'angel'
		n	in ModG. *Schrank* /ˈʃraŋk/ 'cupboard'
e.	⟨ng⟩ /ŋ/	*ng*	in ModE. *long* /ˈlɔŋ/
		ڭ	(Urdu, that is ⟨ ⟩ /n/ plus ⟨ڭ⟩ /g/, base ⟨ ⟩ /k/)
f.	⟨g~gg⟩ /ŋ/	𐌲~𐌲𐌲	in Goth. 𐌹𐌲𐌲𐌿𐍃~𐌹𐌲𐌲𐌿𐍃 *ig(g)qis* /ˈiŋkʷis/ 'you two' (dat./acc.)
	⟨n~ng⟩ /ŋ/	𐌽~𐌽𐌶	in OHG. 𐍆𐌿𐌽𐌰~𐍆𐌿𐌽𐌶𐌰 *zun(g)a* /ˈt͡suŋa/ 'tongue'

Two distinct strategies are commonly exercised to write the velar nasal in systems which do not possess a specialised grapheme. Either signs the corresponding phonemes of which show a maximal degree of similarity with /ŋ/ are also used as a makeshift writing for this sound, or the most characteristic distinctive features of /ŋ/, nasality and velarity, are indicated by means of a grapheme combination consisting of one element that normally corresponds with nasal (and non-velar) /n/ and one that regularly corresponds with velar (and not nasal) /g/. The Egyptian word forms listed under (7) all designate a kind of bovine, usually a long-horned bull. Obviously, there is neither a semantic contrast, nor do we find a significant grammatical, chronolectal, or diatopic distribution. Some writings representing different types occur within one text (e.g. **a** and **j**, **b**, **f**, **l**, **q** and **z**, as well as **c**, **g**, **w**, and **y**), and *ngʾ* and *gn* have already been regarded representatives of a single lexeme – without any explanation for the dissimilarities suggested (see ERMAN

and GRAPOW 1957: II 349,1–5, for a different approach cf. the studies mentioned by MÜLLER, in: GOLDWASSER 2001: 19* note a).

(7) Variant writings of *ng(ȝ)(w) / gn / g(w) / n(w)* 'bovine'

a , **b** , **c** , **d**  , **e**  , **f**  , **g**  , **h**  , **i**

j , **k** (pl.), **l** , **m**

n , **o** , **p**

q (pl.)

r , **s** [26], **t** , **u**  , **v** 

w , **x**

y , **z** (pl.)

References:
a Tomb of Jy-mr.y at Giza (*LD* II 49a, 3rd register; *LD* II 54, 3rd register), tomb of Jntj at Deshasheh (PETRIE 1898: pl. XII, 4th reg.), tomb of ỉḫ.t-ḥtp at Saqqara (DAVIES 1901: pl. VIII, 1st reg.). **b** *Pyr*. 286e[W], 547a[T]. **c** Tomb of Mṯn at Abusir (*LD* II 4, left part, 3rd register), similar *Pyr*. 386b[N], 547a[P.M]. **d** Tomb of Ḥ[c]-bỉ.w-Skr at Saqqara (KAHL, KLOTH and ZIMMERMANN 1995: 188, D3/Sa/9c). **e** Tomb of Šdw at Deshasheh (PETRIE 1898: pl. XVIII, 4th reg.). **f** *Pyr*. 547a[M]. **g** Tomb of Mṯn (*LD* II 4, left part, 1st register). **h** Sinuhe R37 (KOCH 1990: 15). **i** Sinuhe B120 (KOCH 1990: 48). **j** Tomb of ỉḫ.t-ḥtp (DAVIES 1901: pl. XXI, 1st reg.; XXII, 2nd reg.). **k** Tomb of Špss-R[c]w at Saqqara (*LD* II 60). **l** *Pyr*. 386b[W], similar *Pyr*. 286e[T]. **m** *Pyr*. 1302a[P]. **n** Temple of Dendera (MARIETTE 1870–75: III, pl. 56d). **o** Temple of Debod (ROEDER 1911: § 113). **p** Temple of Philae (JUNKER 1958: 59,14). **q** *Pyr*. 547a[N], similar *Pyr*. 547a[P.M]. **r** Tomb of Ḥtp-kȝ at Saqqara (MARTIN 1979: pl. 13). **s** Temple of Luxor, Sanctuary of Amenophis III (ABDEL-RAZIQ 1986: 105). **t** pEbers 22,7 (GRAPOW 1958: 201,14). **u** Temple of Sety I at Abydos (MARIETTE 1869: I, pl. 53). **v** pLeiden 345 vso. F5,2 (*DZA* no. 30633880). **w** Tomb of Mṯn (*LD* II 3, centre). **x** Stela of Nastasen, line 38 (PEUST 1999b: 39).[27] **y** Tomb of Mṯn (*LD* II 6, top). **z** *Pyr*. 547a[T].

[26] Square brackets indicate that the word is written without classifier but accompanied by a depiction of the object.

[27] A distinct interpretation of the word *nw*, which appears in the group *jwỉ nw* as part of a list of words refering to different sorts of bovines, is suggested by PEUST (1999b: 169, cf. also 134–136). He relates *nw* with the lexeme *nw* 'hunt' and translates *jwỉ-nw* as 'Wildrind' (that is "cattle that has to be hunted"). However, the writing with the 'plant'-classifier (the original looks rather different, more like  , see PEUST 1999b: 132) recalls some relation with MEg.  *gn.w* 'branches' (pLeiden I 344 rto. 4,14 = GARDINER 1909: pl. 4,14), and thus gives additional reason for the connection proposed above.

The different types of graphemic shapes in (7) precisely resemble the cross-linguistic variations indicating the presence of a velar nasal /ŋ/. Consequentially, one should consider all the forms, that have customarily been interpreted as belonging to three distinct lexemes *ngʒ*, *gw*, and *nw*, allographs of only one root. The graphic contrasts of ⟨n-g⟩, ⟨g-n⟩, ⟨g⟩,  ⟨n⟩,  ⟨n-k⟩, and  ⟨nk⟩(?) do not imply analogous contrasts in spoken language, but rather reveal that the consonantal shape of that very root was /ŋw-/ or /ŋ-/[28] and thus testify the existence of the velar nasal /ŋ/ occurring as a marginal phoneme in Egyptian.[29]

3.5 Another procedure to gain insight into the sound shape of Egyptian utterances and the structure of its phonological system is analysing imperfect rhymes and puns. By this we are able to identify consonants which at the very time the respective text was composed would have shared some phonetic distinctive features. Although the occurrence of clumsy rhymes which are recognisable as such is presumably not very frequent and only a small portion of them happens to be profitable, some results concerning the date of the sound change /d/ > /ʕ/ have been obtained by this means.[30] In order to validate the reconstruction of phonological properties of a dead language, typological information should be taken into consideration. Whenever possible, one should try to avoid assumptions which imply the existence of entities or processes without cross-linguistically attested parallels. Of course it cannot be excluded that a certain feature occurs in no more than a single language, but given the case that there were two equally possible reconstructions and one of them would result in a scenario extremely rare in natural languages, the alternative should be preferred.[31]

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[28] To read Egyptian *ngʒ(w)* and *gw* 'long-horned bull, bovine' as *ŋ(w)* has already been suggested by GAMKRELIDZE and IVANOV (1994: 491), who compare the word with IE *k'ʷou-, k'ʷu- (traditional *gʷou-, gʷu-, cf. OI. *gáuḥ*, Gr. βοῦς, Lat. *bōs* 'bull, cow', Oir. *bó*, OHG. *chou*, Toch. A *ko*, B *keu* 'cow'), Sum. *gud* or *gu₄* 'bull, cattle', OChin. *'kuo* and *ˌngi̯ə̯u* 'bull, cattle' and considered it "a Near Eastern migratory term of wide distribution." Sum. *gud*, however, is no longer interpreted as /ŋu/ but as *gʷud < Proto-Sum. *gʷuz (see WHITTAKER 1998: 120 and 129), which is more closely linked to the Indo-European forms. In the light of this analysis, a historical connection between the Egyptian and Indo-European forms seems unlikely for phonological reason. It is more probable that the widespread similarities are the result of sound symbolism.

[29] There are a few other doublets of written forms which may indicate the presence of a phoneme or allophone /ŋ/ in the respective words, e.g. *wbn / wbg* 'shine' (but see also *wbḫ*), *bn / bng* [kind of bird] (perhaps 'wagtail'), *ng / ngg / g(ʒ)g(ʒ)* 'yell, cackle', *gnn / gw / nw* 'weak, limp'. These shall be treated elsewhere in more detail.

[30] KAMMERZELL (1998: 35–36, 1999b: 69–73).

[31] Two examples of how to apply typological assumptions have been submitted by KAMMERZELL (1998: 32–33).

3.6 In one of the preceding sections, a view has been taken according to which aged writing systems tend to display some irregularities in the set of relations between minimal graphemic elements and phonological elements. The conviction that one-to-one correlations must not be taken for granted is an essential part of any refined theory of graphophonemic relations. Nevertheless, a statement as such requires specification: In the case of writing

(8)

Means	Scope	Limitations
transcriptions of foreign words in Egyptian script	Late Egyptian, Demotic, and Coptic	indirect evidence as a consequence of filter processes; prerequisite: reliable knowledge about the sound shape of the foreign elements
transcriptions of Egyptian words in other ancient writing systems	Late Egyptian, Demotic, and Coptic	indirect evidence as a consequence of filter processes; prerequisite: reliable interpretation of the respective foreign writing system
attestations of Egyptian words in Coptic script	Coptic	prerequisite: reliable interpretation of the Coptic writing system
genetically related words in other Afroasiatic languages	earliest consonantal system	indirect evidence as a consequence of filter processes; prerequisite: being able to distinguish borrowings
phonotactic regularities (incompatibilities of consonantal phonemes within the boundaries of one morpheme)	Old Egyptian consonantal system	enables to constitute natural classes of consonants, but no clue to their specific shape is given
synchronic variation of written forms	all chronolects	enables to identify consonants sharing some features, without indicating their specific nature
diachronic variation of written forms	all chronolects	enables to identify consonants sharing some features, without indicating their specific nature
rhymes and puns	all chronolects	enables to identify consonants sharing some features, without indicating their specific nature
typological considerations on markedness, the architecture of phoneme systems and the naturalness of phonetic and phonological change	all chronolects	not a discovering procedure, but rather a means for verifying preliminary hypotheses
the earliest inventory of elementary graphemes and the *GPCC-principle* (*graphophonemic correspondence complexity principle*)	inventory of the consonantal system of Pre-Old Egyptian	enables to identify the inventory of consonants, without indicating their specific nature

systems that have a set of correspondence rules governing the relations between elementary graphemes and minimal segmental units of the spoken language, there is a strong preference for such *graphophonemic correspondence rules* (*GPC rules*) to apply to phonological, rather than phonetic, elements (see STETTER 1994: 693, GLÜCK 2001: 103–104; and cf. VOYLES 1976: 1–3, on Old High German). Designers of an alphabet – and the same holds true for creators of the *alphabetic module* of a complex writing system as well – regularly are inclined to establish efficient graphophonemic correspondences. In order to provide a *phonologically flat* writing system, the phonemic principle has been the fundamental principle in constituting an alphabetic (module of a) script, be it by means of the first creation of a script or be it by means of the adaptation of an already existing writing system. This almost universal tendency provides us with what may be called the *graphophonemic correspondence complexity principle* (*GPCC-principle*): Close to the date of creation or adaptation of a particular writing system, the regularity and simplicity of its *GPC rules* is highest. In the course of time, *GPC rules* often become more complex and result in a decline of the phonological flatness – presumably due to divergent speed of change in spoken and in written language.

3.7 The procedures which have been employed to reconstruct the sound system of Egyptian, their respective range and limitations are summarised in table (8) on the preceding page. That reliable conclusions can often be obtained only by combining several operations is self-evident.

4. Phonological properties of Pre-Old Egyptian

4.1 As a consequence of the *GPCC-principle* formulated in Section 3.6, we have good reason to assume that the earliest inventory of hieroglyphic signs corresponding with single phonemes reflects the contemporary system of consonantal phonemes fairly well and pays attention to all those sound contrasts which were felt relevant by the creators of the writing system. Investigations based on research that was conducted by J. KAHL (1994: 61–73) show that eighteen members of the classical inventory of 24 signs corresponding with single consonants are attested (in this very function) not later than the reign of King Djer (c. 2949–2902 BC). One fact is of outstanding concern: those pairs of elementary graphemes which later should correspond with a velar consonant and its palatal counterpart – that is  ⟨k⟩ /k/ and  ⟨ṯ⟩ /c/,  ⟨q⟩ /k'/ and  ⟨ḏ⟩ /c'/, as well as ⟨ḥ⟩ /x/ and ⟨š⟩ /ç/[32] – were

[32] Even though those scholars transfering Egyptological transcription symbols into IPA signs generally render ⟨š⟩ by ʃ, there is no doubt that ⟨š⟩ systematically corresponded with a

represented by only one sign respectively in the hieroglyphic writing system of the early First Dynasty. The opposite signs turned up as elementary graphemes for the first time not before several generations later.

(9)

AA equivalent	Hieroglyphic sign	Earliest occurrence as a phonogram
*k	⟨t̲⟩	reign of Narmer (about 3000 BC)
	⟨k⟩	reign of Qa^{c}a (c. 2828–2803 BC)?[33]
*k'	⟨d̲⟩	Tomb U-j at Abydos (c. 3380–3330 cal BC)
	⟨q⟩	Second Dynasty (c. 2803–2657 BC)
*x	⟨š⟩	reign of Djer (c. 2949–2902 BC)
	⟨h̲⟩	end of Third Dynasty (c. 2600 BC)

The elementary graphemes ⟨t̲⟩, ⟨d̲⟩ and ⟨š⟩ are well attested in sources written before their respective counterpart appeared for the first time. Without aspiring to completeness, J. KAHL quotes eleven occurrences of ⟨t̲⟩ which are older than the first indisputable attestation of ⟨k⟩ (1994: 767–768 and 879)[34], seventeen cases of ⟨d̲⟩ preceding the oldest

phoneme that belonged to the palatal series in Classical Egyptian (cf. SCHENKEL 1990: 52). Actually, IPA ʃ denotes a voiceless postalveolar fricative. The IPA symbol for the voiceless palatal fricative is ç, and this letter is also employed here. This usage must not be confused with the Egyptological tradition, according to which /ç/ is the conventional modern pronounciation of the consonant corresponding with ⟨h̲⟩. The counterpart of ⟨h̲⟩ in spoken Earlier Egyptian presumably was the voiceless velar fricative /x/ (cf. RÖSSLER 1971: 300–303, SCHENKEL 1990: 52, KAHL 1994: 64–65, PEUST 1999a: 115–117).

[33] There are one or two earlier documents that look at first glance as if they exhibit instances of ⟨k⟩, one from the period of Djet, Meritneit or Den (c. 2902–2842 BC), the reading of which is not established (cf. KAHL 1994: 783, n. 2672), and one from the reign of Djer, that is even less likely to furnish a case of ⟨k⟩ (cf. KAHL 1994: 783, n. 2675). The respective hieroglyphs might be cases of , an allographic variant of ⟨nb⟩ (not included in KAHL 1994, but cf. KAPLONY 1963: III pl. 52, figs. 192 and 193 for an unambiguous variation of and ⟨nb⟩).

[34] A considerable amount of further examples can be found in documents dating from the time prior to the reign of Qa^{c}a, see e.g.: ENGEL (1997: 410, fig. 205, dating from the first half of the First Dynasty) as well as KAHL's (1994) nos. 283a (PETRIE 1901: pl. X,2), 284a (PETRIE 1901: pl. XI,2) from the reign of Aha; no. 133 (PETRIE 1901: pl. VII,11) from Dynasty "0"; nos. 721 (PETRIE 1901: pl. XXVI,59), 727 (PETRIE 1901: pl. XXVI,65), 729 (PETRIE 1901: pl. XXVI,67), 743 (PETRIE 1901: pl. XXVI,81), 764 (PETRIE 1901: pl. XXVII,102), 765 (PETRIE 1901: pl. XXVII,103) from the reign of Djer; no. 877 (KAPLONY 1963: III, pl. 37,124) from the reign of Djer or Djet; no. 887 (KAPLONY 1963: III, pl. 23,48), from the reign of Djet; no. 1105 (PETRIE 1900: pl. XXXII,20) from the time of Djet, Meritneit or Den; no. 1234 (KAPLONY 1963: III, pl. 23,49), from the time of Meritneit or Den; nos. 1248 (Petrie 1900: pl. XIV,11), 1253 (PETRIE 1900: pl. XV,16), 1358 (KAPLONY 1963: III, pl. 88,334), 1396 (PETRIE 1900: pl. XXXII,12) from the reign of Den; no. 1674

example of 𓃀 ⟨q⟩ in the role of a phonogram (1994: 547–549), and as much as 45 instances of 𓊃 ⟨š⟩ prior to the first attestation of 𓎛 ⟨ẖ⟩ (1994: 500–501). Hence, we are on safe ground, if we assume that these findings do not result from mere chance but rather reflect some linguistic reality.

An opposition between velar and palatal obstruents is not reconstructed for Afroasiatic,[35] but considered an Egyptian innovation (cf. RÖSSLER 1971: 300–306, SCHENKEL 1990: 45 and 51–52). So it seems reasonable to infer that the phonemic split[36] resulting in this contrast had not yet been completed at about 3000 BC. Looked at superficially, the situation might appear confusing: What is attested first are not the signs corresponding with velar obstruents in Classical Egyptian, but on the contrary those which are persistently interpreted as corresponding with palatals. A naïve explanation – that would run as follows: Afroasiatic *k, *k', *x developed by palatalization into Archaic Egyptian /c/, /c'/, /ç/ (in all distributions!), which later underwent a phonemic split into /c/, /c'/, /ç/ and /k/, /k'/, /x/ – can be ruled out for various typological reasons. A phonological system having a series of palatal obstruents and at the same time lacking velar consonants is hardly ever found in the languages of the world. Moreover, an unconditioned sound change from [+high, –coronal] to [+high, +coronal] is extremely unlikely, and an extensive reversion of such a development is cross-linguistically improbable as well.[37] A far more adequate explanation can be found, if we bear in mind the relative frequencies of velar and palatal consonants in Earlier Egyptian (see Diagram 10).

Palatal obstruents did not exist as phonemes in the language reflected in the inscriptions of the early First Dynasty. In that period, the elementary graphemes 𓊪 ⟨ṯ⟩, 𓈙 ⟨ḏ⟩, 𓊃 ⟨š⟩ corresponded with the "original" Afroasiatic consonants /k/, /k'/, /x/. An allophonic variation between velar [k], [k'], [x]

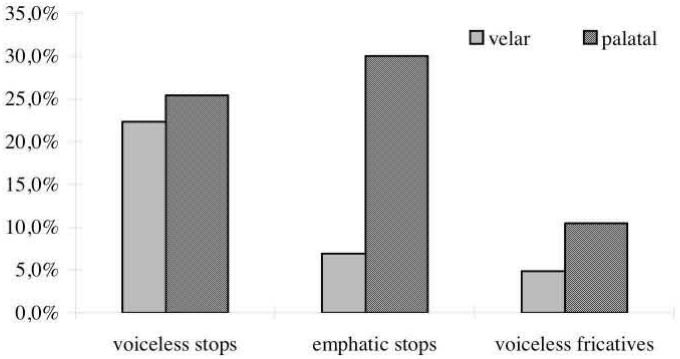
(PETRIE 1900: pl. VII,11) from the reign of Semerkhet.

[35] Linguists stressing the role of Cushitic, Chadic, and Omotic in reconstructing Afroasiatic tend to postulate the existence of a set of palatal and lateral affricates and sibilants in the "proto-language" (e.g. OREL and STOLBOVA 1995: XVI, EHRET 1995: 480–482, TAKÁCS 1999: 268–269), which must not be confounded with the class of palatal stops and fricatives (or affricates) in Egyptian, that show a systematic relationship with the velar series.

[36] Excellent comprehensive accounts of the general characteristics of phonemic splits and mergers are given by HOCK (1991: 52–60) and LABOV (1994: 295–418).

[37] Whereas in some varieties of Arabic (e.g. early Andalusian Arabic, Cairene Arabic, Southern Coastal Arabic) the phoneme corresponding with Classical Arabic ǧīm /d͡ʒ/ < Proto-Semitic *g is pronounced [g], it is not certain, whether this actually testifies a reversion of the sound change *g > /d͡ʒ/ or should better be described as a preservation of the Proto-Semitic velar (cf. LIPIŃSKI 1997: 138–139). General reflections on the reversibility of language change have been put forward by THÜMMEL (1999), who considers most cases which were dealt with as possible candidates for reversible processes in the fields of phonology and morphology as "improper examples."

(10) Frequencies of velar and palatal obstruents in Earlier Egyptian (source: PEUST 1999a: 295–296)



and palatalised [k^{j}], [k^{ʲ}], [x^{j}], conditioned by the respective environment, probably existed already, but for the time being left no traces in the writing system. Some generations later, the phonetic distinction became phonologically significant by loss of the environmental determinants that predicted the allophonic difference. The majority of instances of old /k/, /k'/, /x/ having become /c/, /c'/, /ç/ (which we know for sure from the relative frequencies in Old Egyptian), the standard *GPC rules* had changed from

⟨t̲⟩ ⇒ /k/, ⟨d̲⟩ ⇒ /k'/, ⟨š⟩ ⇒ /x/

to ⟨t̲⟩ ⇒ /c/, ⟨d̲⟩ ⇒ /c'/, ⟨š⟩ ⇒ /ç/.

Since the hieroglyphs ⟨t̲⟩, ⟨d̲⟩, ⟨š⟩ were no longer suitable for corresponding with /k/, /k'/, /x/, the signs ⟨k⟩, ⟨q⟩, ⟨h̲⟩ were introduced as new elementary graphemes corresponding with unchanged /k/, /k'/, /x/.[38] From then on we find the classical set of *GPC rules*:

⟨k⟩ ⇒ /k/, ⟨q⟩ ⇒ /k'/, ⟨h̲⟩ ⇒ /x/

[38] With regard to the phonological system of a language, the modifications represent a uniform type of sound change and can be described as one development, the change of a single phonetic distinctive feature, namely [–coronal] > [+coronal]. Actually, however, we are not dealing with a punctual process that took place at a certain point of time and immediately affected all velar consonants which were to become palatals. More precisely, a phonological change like palatalization (*Palatalwerdung*) is a modification of the pronounciation behaviour arising in *some* instances of *some* velars in *some* distributions within the speech of *some* speakers and spreading in the course of time (cf. LABOV 1994: 43–112).

and 𓊪 ⟨ṯ⟩ ⇒ /c/, 𓎛 ⟨ḏ⟩ ⇒ /c'/, 𓈙 ⟨š⟩ ⇒ /ç/.

This explanation can be further verified, if we succeed in uncovering some examples of words with a velar consonant that were written in the beginning with one of the original "velar graphemes" 𓊪 ⟨ṯ⟩, 𓎛 ⟨ḏ⟩, 𓈙 ⟨š⟩ and later underwent an *orthographic shift* and exchanged this grapheme for one of the classical "velar signs" 𓎡 ⟨k⟩, 𓐍 ⟨q⟩, 𓎟 ⟨ḫ⟩. To find "bi-consonantal" hieroglyphs which still corresponded with a velar (besides any other consonant) in Old Egyptian, but were interpreted ("complemented") by 𓊪 ⟨ṯ⟩, 𓎛 ⟨ḏ⟩ or 𓈙 ⟨š⟩ , instead of 𓎡 ⟨k⟩, 𓐍 ⟨q⟩, 𓎟 ⟨ḫ⟩, in the period prior to the phonemic split would be profitable, too.

4.2 Examples involving the velar fricative /x/ – obviously the last of the series to be split into two phonemes – are not uncommon and have already been discussed recently.[39] So it may be sufficient now to present a few instances of words the Coptic successors of which prove that they retained the original velar consonant throughout Egyptian language history.

(11)

𓈙 ⟨š⟩ /x/	𓎟 ⟨ḫ⟩ /x/	Transcr., meaning	Coptic successors
a	b	*ʿḫm.(w)* 'divine images'	ⲁϩⲱⲙ^{S}, pl. ⲁϩⲱⲙⲉⲓ^{S} 'eagle'
c	d	*pḫr.jw* (ptcp. pl.) 'attending'	ⲡⲱϩⲣⲉ^{L}, ⲡⲟⲭⲣⲓ^{OC} 'bewitch'
e	f g	*ḫʿq* 'shave'	ϩⲱⲱⲕⲉ$^{S.L}$, ϩⲱⲕ$^{S.L}$, ϩⲟⲩⲟⲩⲕ^{A}, ⲋⲱⲕⲓ^{B}, ⲋⲱⲕϩ^{B} 'scrape, shave'
h	i	*ḫpȝ* 'navel, navel-string'	ϩⲁⲡⲉ$^{S.L}$, ϩⲉⲁⲡⲉ$^{S.OC}$, ϩⲟⲁⲡⲉ^{S}, ⲋⲉⲁⲡⲓ^{B}, ϩⲉⲁⲡⲓ^{F} (fem.) 'navel'
j	k	*ḫrd.t* (collect.) 'children, young'	ⲋⲣⲱⲧ^{OC}, ⲋⲣⲟϯ^{B}, ϩⲁⲇϯ^{F} (pl.) 'children, young'
l m	n	*ḫkr* 'adorn, decorate; ornament'	ϩⲱⲱⲕ^{S}, ϩⲱⲕ$^{S.Sf.L.F}$, ϩⲱⲕ^{A}, ⲋⲱⲕ^{B} 'gird, prepare, arm'
o	p	*zḫ'* 'write; writing'	ⲥϩⲁⲓ^{S}, ⲥⲁϩⲉⲓ^{S}, ⲥⲁⲓ^{B}, ⲥⲋⲁⲓ$^{B.OC}$, ⲥⲉⲓϩ^{F}, ⲥϩⲉ^{F}, ⲥⲉⲓ^{F} 'write, writing'

[39] See KAHL (1994: 63–65), KAMMERZELL (1999b: 75–76). The fact that the orthographic shift ⟨š⟩ > ⟨ḫ⟩ does not imply a sound change was already noticed by EDEL (1955/64: § 120), even though his explanation is now outdated.

References:
a *Pyr*. 407b^{W} (sim. 407b^{T}, 1779a^{N}). **b** *Pyr*. 1766c^{N}. **c** *Pyr*. 711c^{N}. **d** *Pyr*. 711c^{T} (sim. 711c^{M}). **e** *Pyr*. 1428a^{P} (sim. 1428a^{M}). **f** *CT* VII 156f $^{pGard.\ III,\ pGard.\ IV}$. **g** *CT* IV 338d^{B5C}. **h** *Pyr*. 118c^{W}. **i** *CT* IV 112d^{S1P} (sim. IV 112d$^{S3C.\ S1C}$, IV 209f^{BH1Br}, VI 391p^{T1L}). **j** EDEL (1955/64: § 120). **k** EDEL (1955/64: § 120). **l** *Pyr*. 1244a$^{M.N}$ (sim. 1244a^{P}). **m** *CT* I 104c$^{B1P.S1C.S2C}$ (sim. *CT* I 104c$^{B3Bo,.S10C}$, VII 251b$^{pGard.\ II}$). **n** *CT* I 104c^{T1La,b} (sim. I 104c^{B3L}, IV 327t^{B1L}, V 209p^{M1C}, VI 72a$^{B3La,\ B3Lb}$, VI 83a$^{B3L,\ T3Bc}$). **o** *Pyr*. 467b$^{W.N}$, 475b–c$^{W.N}$ (sim. 906f^{P}). **p** Amduat in the Tomb of Ramses' IX., Third Hour, Introduction, col. 52–53 (GUILMONT 1907: pl. LXIII, HORNUNG 1987: 276)[40].

4.3 A few more words must be made about graphonemes with the voiceless velar stop /k/, because these have not yet been described and the interpretation of the respective sources is not always self-evident. According to the hypothesis developed at the beginning of this chapter, every instance of 𓎛 ⟨ṯ⟩ corresponded with the velar phoneme /k/ prior to a time which is roughly marked by the reign of King Qa^{c}a. Further empirical evidence for this notion can be drawn from early attestations of words which retained the original sound shape of /k/ and for this reason underwent a graphemic shift 𓎛 > 𓎡 (analogous processes affecting "multi-consonantal" signs would be useful as well). Since the total amount of distinct lexemes with 𓎛 ⟨ṯ⟩ that are not only attested before the time of Qa^{c}a but are also identifiable with a fair degree of certitude is not abundant, one must not expect too many examples. Nevertheless, there are two or three instances which look very promising (see examples 12 to 14), and some more occurrences that may – but need not necessarily – be interpreted as cases of what we are looking for.

(12)

Sbkṯj 'The one belonging to the Crocodile God'
(seal impression from Tomb W 33 at Umm al-Qa^{c}âb, reign of Djet)[41]

Not without doubts, KAPLONY (1963: II 1100) proposed to identify a personal name *Jṯ-Sbk*. His hesitancy is fully justified, since anthroponyms of this type are unfamiliar[42] and one may suspect that a name meaning 'The one

[40] This writing is extremely rare (I do not know of any other attestation besides the one quoted above). Apart from old and archaising texts, which show forms like example **o** (e.g. Old Kingdom inscriptions, Sun Litany, inscriptions of the Saïtic Period), the root *zḥ*' 'write' is ordinarily not interpreted phonographically.

[41] PETRIE (1900: pl. XXXII,40), KAPLONY (1963: III, pl. 23,48), KAHL (1994: no. 887).

[42] There are no examples in RANKE (1935: 52–53), and none of those names which KAPLONY (1963: 441) and KAHL (1994: 642, no. 1646) presume to mean 'Whom the god NN has

who is taken by the Crocodile God' would not have been considered appropriate by speakers of Egyptian, too. On the other hand, the reading suggested in (12) yields a name which does not only belong to a well attested class of proper names constructed with a theonym and an adjectivising affix (e.g. *Jmn.j*, *Mnṯ(w).j*, *Ḫnsw.j*, *Stḫ.j*), but also appears in other Egyptian texts of the third and early second millennium in forms like *Sbk.y*[43] or *Sbk.j*[44] as well as in a feminine variant *Sbk.t*[45]. An early instance of a more classical writing of the theonym *Sbk* can be found in the name *Nfr-Sbk* incised on a cylinder seal of the Third or Fourth Dynasty.[46]

Another possible candidate for an inscription representing the old *GPC rule* ⟨ṯ⟩ ⇒ /k/ is depicted under (13) and discussed below.

(13)

jkẖn 'scoop'
(ink label on a calcite jar found in Tomb S 3504 at Saqqara, reign of Djet or Qaᶜa)[47]

EMERY (1954: 109) perceived *jṯz*, but gave no interpretation. KAPLONY (1963: I 662) read the very signs as *ṯz.j* and took it as a proper name. In this he was followed later by KAHL (1994: 642), who transcribed *čʾs.î* – that is *ṯ(ʾ)z.j* in a more traditional rendering –, but did not rule out the possibility to identify a group *ỉč Mn.w* instead. This would be another case of a name having the peculiar meaning 'The one taken by the god NN'. Neither solution is particularly convincing.[48] As an alternative, the three hieroglyphs may be analysed as . Reading this as *jkẖn*, we can assign it to the MEg. root *jkn*,

taken' is written with the sign . Thus, the presence of the verb *(j)ṯj* 'take, seize' is all but indisputable, the more so as one should not expect the appearance of a in a passive participle (The root of this lexeme is presumably not *jṯj* but rather *ṯj* – and as such identical with the Late Egyptian word which is conventionally transcribed *ṯʾj* but exhibits only two consonants. Initial seems to occur solely in inflected forms belonging to those classes which occasionally show an augment *j*-).

[43] MARIETTE (1889: 402, Mast. E 9, Sixth Dynasty); name of two High Priests of Heliopolis during the late Old Kingdom or First Intermediate Period (see DARESSY 1916: 198–209, MOURSI 1972: 34–36); on the stela Cairo CG 20189 (LANGE and SCHÄFER 1902: pl. XVI).

[44] Owner of the stela Munich, Glyptothek 35 (DYROFF and PÖRTNER 1904: 8–10, pl. III) dating from the Middle Kingdom.

[45] Mentioned on the stela Cairo CG 20540, b6 (LANGE and SCHÄFER 1908: 159, line 4).

[46] See KAPLONY (1963: III, pl. 89,339, for the date cf. KAHL 1994: 13). The differentiation between ⟨*MSḤ*⟩ and ⟨*SBK*⟩, suggested by GARDINER (1957: 475) and maintained by KAHL (1994: 542–543), seems to be quite artificial, since there are several instances of used in writing the name of the god *Sbk*.

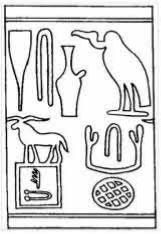
[47] See EMERY (1954: 109, fig. 137), KAHL (1994: no. 1137).

[48] Cf. above footnote 42.

which manifests in the words  *jkn* 'cup'[49] and *jkn* 'cup, handful; scoop, draw'[50]. How these – as well as Eighteenth Dynasty Egyptian  *jkn* 'bowl (of metal)'[51], and Coptic ⲁⲕⲱⲛⲉ^{S}, ⲉⲕⲱⲛⲉ^{S}, ⲉϭⲱⲛⲉ^{S} 'vessel' – are related to Akkadian *akunu* 'large bowl (of copper or silver)'[52], is not transparent.[53] Nevertheless, interpreting the sequence of signs in (13) as a label  *jkꜣn* 'scoop', that denotes either the specific type or a particular purpose of the vessel, is not the least probable among the solutions previously suggested.

The document in (14) can also contribute to the inquiry about the original function of the elementary grapheme ⟨t̲⟩.

(14)



smr
ḥw.t-Ḫnmw-jkꜣ (or *ḥw.t-bꜣ-jkꜣ* or *ḥw.t-zr-jkꜣ*)
'Companion
Temple-of-the-Attacking-Ram-(God)

Ḫnm-mꜣ'w.t
Sḫ-kꜣ(=j)
Ḫnm-mꜣ'w.t[54]
Sḫ-kꜣ(=j)'

(seal impressions found in Tombs Y and Z
at Umm al-Qaᶜâb, time of Djet or Meritneit)[55]

KAHL (1994: 879) abstains from giving an interpretation of the group  , which KAPLONY (1963: 633) analysed as the name of a building, identifying the group inside the enclosure as an epithet of the Ram God. Instead of read-

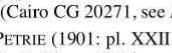
[49] Attested once in the Instruction of Kagemni: *jw jkn n(j)- mw ᶜḥ=f jb.t* 'A cup of water quenches thirst' (pPrisse 1,5).

[50] Attested twice in The Tale of King Cheops' Court: *šꜣz -pw jr.n t- wbꜣy.t r- jn.t -n=s jkn-mwt* 'The maid went to get herself a handful of water' (pWestcar 12,17–18), *ᶜḥᶜ.n[=s š]m.tj r- jkn -n=s nhy n(j)- mw* 'Then she went to draw herself some water' (pWestcar 12,25–26).

[51] Attested several times in the Annals of Thutmosis' III (*Urk*. IV 665,16, 717,16, 722,3, 731,11). The word  (oPetrie 28 = GARDINER and ČERNÝ 1957: pl. VIII, no. 7, vso. 5) is better identified with *jknw* 'hoe'.

[52] Attested twice in Amarna Letters written in Egypt (*EA* 14 iii,36) and in Tyrus (*EA* 148:12 [*a-ku-ni*, gen.]). For related words in other Semitic languages, see HOCH (1994: 42–43). VON SODEN (1959–74: I, 286) considered *akunu* a word borrowed from Egyptian into Akkadian.

[53] Cf. MEEKS (1997: 36, with more references), WARD (1996: 27 and 31–32). The connection of *jkn* with Coptic ⲁϭⲟⲛ^{S}, ⲁϭⲟⲛ$^{S.A}$ 'vessel, stand for jars' propagated by HOCH (1994: 42) was already rejected by OSING (1976: no. 823 and no. 886).

[54] *Ḫnm(.w)-mꜣ'w.t* is attested as a feminine name in the form  on a Middle Kingdom stela (Cairo CG 20271, see *DZA* no. 40443530).

[55] See PETRIE (1901: pl. XXII,34), KAPLONY (1963: 1124 and 1963: III, pl. 67,241 [corrected drawing]), KAHL (1994: no. 1093).

ing  *jṯ* 'conquering', like Kaplony did, one might consider to correlate with the verb *jkj* 'attack, strike'[56] of the Pyramid Texts.

Accordingly, the sequence , occurring in other inscriptions of the First Dynasty[57] and customarily interpreted as a proper name *Jṯ*, should also be read *jkṯ* and might perhaps be connected with the root *jkj* as well.

The stela of a male person found in precinct Z at Umm al-Qaᶜâb and dating from the reign of King Djet bears the name  .[58] Since there is no Egyptian word of the form *jwṯ*, the name must consist of more than one morpheme – at least, if a meaning can be determined at all. Dividing the group into + is a suitable segmentation and results in a second element looking like the standard spelling of the feminine second person singular pronoun *=ṯ* of Earlier Egyptian. This, though, does not conform with the fact that should be a masculine anthroponym.[59] Taking instead as an archaic spelling of the masculine suffix pronoun *=k* and reading *Jwkṯ*, we can solve the puzzle. If the name *Jwkṯ* had to be translated, the best explication is probably 'You-will-come'.[60]

A stone vessel excavated in Tomb U at Umm al-Qaᶜâb has an inscription  ⟨mr-s-ṯ⟩ and dates from the time of Semerkhet (c. 2836–2828 BC).[61] Whereas a word °*mrsṯ* or °*mrsk* does not exist and °*mr=s-ṯ* is not grammatical, a reading  ⟨ṯ⟩ ⇒ /k/ results in a well-formed utterance *mr=s-kṯ(w)* 'She will love you'.[62]

Further cases may be hidden in sequences of hieroglyphs which cannot yet be decoded with reasonable certainty, cf. e.g., the supposed proper names from stelae erected in the age of Djer  [63],  (?)[64],  [65].

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[56] E.g. *Pyr*. 959a[M.N]. For its belonging to the class of 3ae-inf. verbs, see ALLEN (1984: § 738).

[57] See e.g., KAPLONY (1963: III, pl. 48,179 = KAHL 1994: no. 1185, time of Meritneit); PETRIE (1900: pl. XXII,30 = KAPLONY 1963: III, pl. 51,190 = KAHL 1994: no. 1236, time of Meritneit or of Den); PETRIE (1900: pl. XXI,29 = KAPLONY 1963: III, pl. 48,180 = KAHL 1994: no. 1466, time of Den); KAPLONY (1964: pl. 4, fig. 895 = KAHL 1994: no. 1427, time of Den).

[58] See PETRIE (1900: pl. XXXI,6 and XXXIII,6), KAHL (1994: no. 953).

[59] Cf. KAPLONY (1963: 415): „*ṯ* kann auf dieser Männerstele nicht für das Feminin-Suffix der 2. Person Sing. erklärt werden". In Middle Egyptian, *Jwṯ* is attested as a name of a female person (see RANKE 1935: 18,29).

[60] It is unlikely that *jw* should be identified with the dummy topic – for some: "auxiliary" – *jw*, which does not occur in this form before a second or third person singular pronoun in Old Egyptian (see EDEL 1955/64: § 881).

[61] See PETRIE (1900: pl. VII,11), KAHL (1994: no. 1674).

[62] For the shorter form of the enclitic suffix pronoun of the second person masculine, see EDEL (1955/64: § 167).

[63] See PETRIE (1901: pl. XXVI,59 and pl. XXVII,102 = KAHL 1994: no. 721 and no. 764). The interpretation offered by KAPLONY (1963: 665, quoted by KAHL 1994: 720–721 not without scepticism), *Dwꜣ-mšṯ(=j)* '(The God) Dwꜣ is my mšṯ-cloth', is scarcely justified and

Of particular interest is a slightly different scenario involving the toponym which is usually rendered as *Ṯḥnw* and refers to Libya. Apparently, the word is attested for the first time at about 3000 BC on an ivory cylinder seal of Narmer, in the form  .[66] Among later instances may be one or two, still prior to the emergence of the *GPC rules* ⟨ṯ⟩ ⇒ /c/ and ⟨k⟩ ⇒ /k/, which exhibit the form  , then corresponding with /kẖnw/.[67] A document dating from the reign of Qaᶜa instead shows  .[68] This group represents the oldest incontestable attestation of ⟨k⟩ in the function of an elementary grapheme and is usually interpreted as *ḫknw* 'sacred oil', written with a graphical metathesis.[69] Since, however, space and disposition of signs on the label do not justify a metathesis, an alternative analysis seems more convincing. Read in the appropriate order, the graphemes of  constitute a writing of *Kḫnw* 'Libya, Libyan' and nicely illustrate how and why the system of *GPC rules* was modified: original /k/ must have already changed to /c/ in a number of distributions, but this process had not yet taken place in the word which later became *Ṯḥnw*. To indicate that the toponym still exhibited a velar stop in initial position, a writing with the new elementary grapheme ⟨k⟩ was chosen. An interpretation as such is further substantiated by the existence of a feminine proper name  on a Third Dynasty stela from Saqqara,[70] which may be read *Kḫnw* or *Kḫnw(.t)* 'The-Libyan'.[71] Later on, the phonemic shift /k/ > /c/ affected also this word, resulting in better known writings like 

somewhat eccentric in meaning.

[64] See PETRIE (1901: pl. XXVI,81 = KAHL 1994: no. 743). There is an Old Kingdom word  *smk* '*curl, wig*'? (*Pyr.* 1390d[M]) as well as a title *smk- Jȝ.t* in the tomb of *ỉ.n-ḥtp* at Saqqara (MARIETTE 1889: 70), but these help little in understanding the anthroponym, the reading of which might also be  .

[65] See PETRIE (1901: pl. XXVII,103 = KAHL 1994: no. 765).

[66] See KAPLONY (1963: III, pl. 5,5 = KAHL 1994: no. 79).

[67] Oil labels found in Tomb T at Umm al-Qaᶜâb and dating from the reign of Den (see PETRIE 1900: pl. XV,16 = KAHL 1994: no 1253 and, partly destroyed, PETRIE 1901: pl. VIIA,4 = KAHL 1994: 1312). It is dubious whether the sign ⟨ḫ⟩ is part of or rather belongs to the preceding, unanalysable group.

[68] See PETRIE (1901: pl. VIII,3 and XII,6 = KAHL 1994: no. 1870).

[69] Cf. KAPLONY (1963: 315–316), HELCK (1987: 171), KAHL (1994: 783 with no. 2673).

[70] See KAPLONY (1963: III, pl. 139,835 = KAHL 1994: no. 3343). KAPLONY (1963: 662) reads the name *Ṯḥnw-kȝ*.

[71] Whether and how this should be related with  (?) *Kḫn* (?) on a stela from the time of Djet, Meritneit, or Den (PETRIE 1900: pl. XXXII,16 = KAHL 1994: no. 1101; cf. also above no. 68) and/or with the Middle Kingdom feminine name  *Kḫn.t* (see *DZA*: nos. 40549560–40549580) is not clear. If we keep in mind that proper names often undergo a historical development that differs from the fate of the originally underlying lexemes, it seems not impossible that an archaic pronounciation be preserved in an anthroponym, which in turn was no longer identified with its base.

Ṯḥnw.[72] The graphophonemic development hence runs from  , , (?) /kẖnw/ (prior to the reach of Qa^{c}a) via  , /kẖnw/ (from the reign of Qa^{c}a until the Third Dynasty) to  /cẖnw/ (Old Egyptian).

The findings are summarised in the following table.

(15)

⟨ṯ⟩ ⇒ /k/	⟨k⟩ ⇒ /k/	Transcription, meaning	Late successors
		*Sbk.j* ‘Crocodile God’	(cf. Σουχος ‘Crocodile God’)
		*jkn* ‘scoop’	ⲁⲥⲟⲛ^{S}, ⲁⲥⲟⲛ$^{S.A}$ ‘vessel’ (?)
		*jkj* ‘attack, strike’	
		*=k* ‘you’ (m.)	*=*ⲕ ‘you’ (m.)
		*-k(w)* ‘you’ (m.) > *-ṯw* > *-tw*	
(?),	,	*Kẖnw* > *Ṯḥnw* ‘Libya, Libyan’	

4.4 Analogous cases with  ⟨ḏ⟩ and  ⟨q⟩ cannot be presented. This is not surprising, since the overwhelming majority of instances of the old phoneme /k’/ underwent palatalization and became /c’/.[73] As a consequence, the change of the original *GPC rule*  ⟨ḏ⟩ ⇒ /k’/ to  ⟨ḏ⟩ ⇒ /c’/ and the emergence of a new *GPC rule*  ⟨q⟩ ⇒ /k’/ would have left few traces in the written documentation. Up to now, I did not succeed in finding a single persuasive example.

4.5 The role of the sign  ⟨g⟩ and the corresponding phoneme in Pre-Old Egyptian is difficult to ascertain. With regard to Classical Egyptian, scholars agree in defining the latter as a voiced velar stop /g/ (cf., e.g. PEUST 1999a: 111). The elementary grapheme ⟨g⟩ belongs to those which are not yet attested at the beginning of the First Dynasty. According to KAHL (1994: 796), the earliest attestation occurs in the word  *bg.t* ‘raven’ on a stela[74] dating from the reign of Den (c. 2889–2842 BC). Since this is later than the eighteen signs constituting the earliest inventory of elementary graphemes but prior to the introduction of the “new” signs  ⟨k⟩,  ⟨q⟩,  ⟨ẖ⟩, the status of  ⟨g⟩ is somewhat ambiguous. The fact that there is no special elementary grapheme which corresponds regularly with the palatalised counterpart of /g/, the voiced palatal stop /ǵ/, does not help to clarify the

[72] *Pyr*. 455c^{W} (similar 1458c$^{P(770)}$).

[73] See above the diagram under (10).

[74] PETRIE (1901: pl. XXVII,127 = pl. XXX,127), KAHL (1994: no. 1288).

problem. Afroasiatic *g is represented by Earlier Egyptian 𓎼 ⟨g⟩ /g/ and 𓇋 ⟨j⟩ /ɟ/.[75] The frequency of *g* /g/ in Egyptian is very low, much lower than that of *k* /k/ and similar to the relative numbers of *q* /k'/ and *ẖ* /x/.[76] The instances of Eg. *k*, *q*, and *ẖ* constitute only the smaller portion of the representations of AA *k, *k', and $*x_{1/2}$, which in the majority of cases appear as *ṯ*, *ḏ*, and *š* respectively.

(16) Frequencies of Afroasiatic velars *g, *k, *k' in initial position[77]

Hebrew velars		Egyptian velars		Egyptian palatals		entirely	
ג: 390	36,7 %	*g*: 322	32,0 %	*j*: ?	> 0,0 %	*g*/*j*: 322+x	> 14,4 %
כ: 336	31,6 %	*k*: 297	29,5 %	*ṯ*: 668	< 54,5 %	*k*/*ṯ*: 965	< 43,2 %
ק: 338	31,8 %	*q*: 388	38,5 %	*ḏ*: 557	< 45,5 %	*q*/*ḏ*: 945	< 42,3 %

The table shows that *g is seemingly not particularly rare in Afroasiatic languages and that the frequency of Eg. *g* /g/ is well within the limits of what we expect, if we compare it with unchanged *k* /k/ and *q* /k'/, but very low in relation to all the reflexes of AA *k and *k' in initial position. It would be no surprise, if the number of cognates exhibiting Eg. *j* /ɟ/ in place of AA *g turned out to be much larger than the amount of equations of Eg. *g* /g/ and AA *g.

In contrast of the situation prevailing in the cases of 𓎡/𓍿, 𓈎/𓆓, and 𓄡/𓈙, there is no evidence that the elementary grapheme 𓇋 ⟨j⟩ originally corresponded with /g/ and acquired its well-known function as a sign for /j/ < AA *y[78] only secondarily. Accordingly, 𓎼 ⟨g⟩ /g/ seems to be an original member of the most ancient stock of "uni-consonantal" hieroglyphs, that is attested for the first time a little later because of its scarcity. When AA *g had split into Eg. /g/ and /ɟ/ cannot be determined. As voiced velar stops seemingly undergo palatalization more easily than their voiceless or emphatic counterparts[79], one may guess that the development *g > /ɟ/ started prior to the changes *k > /c/ and *k' > /c'/.

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[75] Whether Eg. /ɟ/ < *g and /j/ < *y (and /j/ < *ʔ) actually formed more than one distinct phoneme is dubious. It is not unlikely that the outcome of the palatalization of AA *g and the original glide /j/ (and Eg. /j/ < AA *ɣ as well) had merged.

[76] See PEUST (1999a: 296).

[77] Sources: KOEHLER and BAUMGARTNER (1986), PEUST (1999a: 296).

[78] See SCHENKEL (1990: 52), SCHNEIDER (1997: nos. 40, 41, 51, 112).

[79] Cf. Sem. *g > Arab. *ǧ* /d͡ʒ/; Germ. *g, OE. ʒ /g/ > OE./ME./ModE. *y* /j/; MLG. /g/ > Northern, Middle and Southern Märkisch /j/ (STELLMACHER 1980: 467).

4.6 Another elementary grapheme that is attested for the first time rather late is ⟨z⟩. The earliest unquestionable instance occurs in an ink inscription dating from the time of Qaᶜa (c. 2828–2803 BC) and running *Mzḥ* 'Crocodile' (proper name).[80] Previously – beginning not later than the reign of Djer (c. 2949–2902 BC), perhaps even earlier –, a few words that later regularly or occasionally exhibited a ⟨z⟩ appeared in shape of makeshift writings with ⟨s⟩ or another grapheme normally corresponding with /s/:

- The word designating 'King (of Upper Egypt)' could be written ⟨sw⟩[81] or ⟨sw-t⟩[82], which W. SCHENKEL (1986) persuasively interpreted as *nzw* /nt͡sw/.[83]
- On a seal of a certain Zḫn, dating from the time of Djer, Djet, or Meritneit, the name has the form ⟨zḫn-ₛ-ₛ-ₛ-ₛ⟩.[84] This has been analysed as a representation of the root *zḫn*, with a logogram partially and approximately complemented by ⟨s⟩.[85]
- To these one may perhaps add the group ⟨s-ḫ-t-BOAT⟩ to be found on a stela from the reign of Semerkhet (c. 2836–2828 BC).[86] A reading *Sk.t* has been suggested by KAPLONY (1963: 640), but met with scepticism by KAHL (1994: 667 with n. 1812 and 781 with n. 2657). Even though a connection with MEg. *zḫy.t* [type of ship] (*hapax*) is all but certain, this prospect should not be ignored.

From these data and the compatibility behaviour of ⟨z⟩, which indicates that this grapheme corresponds with a voiceless alveolar continuative phoneme, be it affricate /t͡s/[87] or fricative /θ/,[88] we may conclude that this sound did not belong to the phoneme inventory at about 3000 BC. It rather developed in the course of the next two centuries, most probably by a split of original /t/. That ⟨z⟩ /t͡s/ has a low frequency in Old Egyptian and in the late third millennium even merged with ⟨s⟩ /ṣ/ (as a consequence of the chain shift /x/ > /ç/, /ṣ/ > /s/) is well in accordance with its being the product of a split of original /t/.

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[80] PETRIE (1900: pl. X,4), KAHL (1994: no. 1860).

[81] See KAHL (1994: no. 733, from the reign of Djer, as well as nos. 944 and 974 from the reign of Djet).

[82] See KAHL (1994: nos. 1390 and 1423, from the reign of Den).

[83] See SCHENKEL (1986: 72) and cf. KAHL (1994: 65–66).

[84] See KAHL (1994: no. 878 quinquies).

[85] Cf. KAHL (1994: 69).

[86] PETRIE (1900: pl. XXXI,42 and XXXVI,42), KAHL (1994: no. 1763).

[87] Cf. SCHENKEL (1986: 70–71), KAHL (1994: 65), KAMMERZELL (1998: 30–32).

[88] Cf. LOPRIENO (1997: 439).

4.7 The elementary grapheme 𓇋 ⟨s⟩ is not absolutely incompatible with alveolar graphonemes: it may co-occur with 𓏏 ⟨t⟩ /t/ or 𓐍 ⟨d⟩ /t'/ within the boundaries of a single morpheme,[89] and combinations with 𓎛 ⟨ᶜ⟩ seem to appear, too.[90] This indicates that the consonant customarily transcribed as *s* or *ś* did not belong to the series of alveolar obstruents. One might easily account for that by supposing that 𓇋 ⟨s⟩ systematically corresponded with a sibilant and therefore was not influenced by the rules of compatibility, which above all applied to obstruents. However, a stronger explanation is possible: If we assume that the phoneme corresponding with 𓇋 ⟨s⟩ had a more backish articulation and was realised as /ʃ/ or /ʂ/[91], we can not only perfectly explicate the phonotactic behaviour, but also account for the merger of 𓊃 ⟨z⟩ and 𓇋 ⟨s⟩ in Old Egyptian.

(17) Contrasts of [+high] continuants

c. 2800 BC	𓊃 ⟨z⟩ /t͡s/		𓇋 ⟨s⟩ /ʂ/		𓈙 ⟨š⟩ /x/
	𓊃 ⟨z⟩ /t͡s/		𓇋 ⟨s⟩ /ʂ/	𓈙 ⟨š⟩ [xʲ]	𓈙 ⟨š⟩ /x/
c. 2600 BC	𓊃 ⟨z⟩ /t͡s/	𓇋 ⟨s⟩ /s/	𓈙 ⟨š⟩ /ç/		𓎛 ⟨ẖ⟩ /x/
c. 2400 BC	𓊃 ⟨z⟩ ~ 𓇋 ⟨s⟩ /s/		𓈙 ⟨š⟩ /ç/		𓎛 ⟨ẖ⟩ /x/

At the time of the late First Dynasty there were three continuants having the phonetic distinctive feature [+high] – that is being produced between the dent-alveolar and the (post)velar places of articulation. The splitting of /x/ into /x/ and [xʲ] > /ç/ brought about a reduction of the distance between the new phoneme /ç/ and the sound originally corresponding with 𓇋 ⟨s⟩ and results in "pushing" the place of articulation of the latter more forward. This process in turn diminished the distance between the sounds corresponding with 𓊃 ⟨z⟩ and 𓇋 ⟨s⟩ and ended in a merger. Speakers could put up with that more easily than with an eventual merger of 𓇋 ⟨s⟩ /ʂ/ and 𓈙 ⟨š⟩ /ç/, because – due to the low frequency of the graphoneme 𓊃 ⟨z⟩ /t͡s/ – the functional load of the contrast 𓊃 ⟨z⟩ versus 𓇋 ⟨s⟩ was much less than that of the opposition 𓇋 ⟨s⟩ versus 𓈙 ⟨š⟩.

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[89] See ROQUET (1973: 108), KAMMERZELL (1998: 30).

[90] See PEUST (1999a: 197 with no. 231) in contrast to the statements quoted in the last note.

[91] IPA ʃ denotes a palato-alveolar sound, while ʂ is the sign of a retroflex. In this paper, the symbol ʂ is used. This practice does not imply that we have reason to assume a retroflex articulation, but only aims at avoiding confusion with the sign ʃ that some authors use to refer to the phoneme corresponding with Middle Egyptian ⟨š⟩.

4.8 The elementary grapheme ⟨h⟩ seems not to be attested as such prior to the time of Ninetjer (c. 2760–2717 BC).[92] According to its compatibility, ⟨h⟩ shows significant similarities with ⟨s⟩ and with ⟨f⟩.[93] ⟨h⟩ and ⟨f⟩ – as well as ⟨f⟩ and ⟨s⟩ – are totally incompatible within the limits of a single morpheme in Old Egyptian, and ⟨h⟩ in this chronolect never (be it immediately or following one or more intervening phonemes) succeeds ⟨s⟩ in a lexical or grammatical element, whereas the opposite sequence ⟨h(..)s⟩ is extremely rare.[94] From these findings, from the allomorphic variation in the third person personal pronouns – masculine singular suffixed form ⟨f⟩ versus enclitic ⟨sw-^{w}⟩, feminine ⟨s⟩, ⟨s-j⟩ and plural ⟨s-n⟩ – and from the existence of some pairs of (near) synonyms that originally might have belonged to one root respectively[95] we may draw the conclusion that Old Egyptian /h/, /ṣ/ and /f/ developed from a single phoneme and this formerly had been the only sibilant of the language that was to become Egyptian. A typological parallel of a development as such may be seen in what has been traditionally considered the Japanese phoneme /h/ and its allophones [h], [ç] and [ɸ], which are in complementary distribution as [ha], [he], [ho], [çi], and [ɸɯ].[96] By the time of the early First Dynasty, the original (pre-) Egyptian sibilant already had been split into two phonemes corresponding with ⟨s⟩ and ⟨f⟩.

4.9 A distinction between velar and palatal obstruents is not reflected in the rules of compatibility (see above Section 3.3). On the other hand, an opposition between what in Old and Middle Egyptian corresponded with non-

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[92] Cf. KAHL (1994: 71 and 627). There is a certain number of earlier attestations of a sign (KAHL 1994: 628–629), the function of which cannot be established with a reasonable degree of certainty.

[93] Cf. ROQUET (1973: 108–111), KAMMERZELL (1998: 30–31).

[94] I do not know any example besides *hꜣṯs* 'stone jar' (*Pyr*. $33b^{N}$, $36b\text{–}c^{W.N}$). The root occuring in the noun *hmz* 'cord, rope' (*CT* V $280f^{B1Bo}$), and perhaps also in (*CT* V $249d^{S2C^a}$), or (*CT* V $249d^{B2Bo}$) *jhmz.t* (?) 'cord, rope', and in the divine name or epitheton *jhms.w* (*CT* IV $48a^{B1C.B2L}$) is not attested prior to the end of the Old Kingdom.

[95] See OEg. *hh* 'heat, fire, scorching breath', MEg./Neo-MEg. *ss* 'burn', LEg. *ssf* 'burn', and Neo-MEg. *sfsf* 'burn'; NEo-Meg. *hb* '*cut off* (water supply)' (Philensis II, 9 = *Urk*. II 222,7), and OEg. *sb* 'circumcise'; MEg. *hb* 'set foot in, enter' and MEg. *sb* 'set foot in, trespass on' (Sinuhe B 116 = KOCH 1990: 47,9); OEg. , *h(jw)* '(sort of) snake' and Late Period Eg. *fy* 'viper' (pBrooklyn Museum 47.218.48, § 65a = Sauneron 1989: pl. 4^{haut}, line 12 – NB: the photographic reproduction is mirror-inverted), Dem. *fj* 'snake' as well as the sign ⟨f⟩ that had possible derived its function from a word **f(j)-* 'viper'.

[96] Cf. SHIBATANI (1990: 166–167), who also refers to the possibility that the allophones of Japanese /h/ in native and Sino-Japanese words diachronically developed from /p/ by way of a weakening process [p] > [ɸ] > [h] > [ç].

anterior high stops – ⟨ṯ⟩,  ⟨ḏ⟩,  ⟨k⟩, ⟨q⟩,  ⟨g⟩ – and with non-anterior high fricatives –  ⟨š⟩,  ⟨ḫ⟩,  ⟨ḥ⟩,  ⟨ḥ⟩ – is apparent, since the members of each grouping are absolutely incompatible with each other (but not necessarily with the members of the other class). This fact may be readily explained, if we assume that the respective consonants originally belonged to two distinct places of articulation and formed a velar and a uvular series. As ⟨š⟩,  ⟨ḫ⟩, ⟨ḥ⟩,  ⟨ḥ⟩ are absolutely incompatible with  ⟨h⟩, which does not hold true for the other group, the consonants corresponding with ⟨š⟩, ⟨ḥ⟩,  ⟨ḥ⟩ must have been those of the uvular series. For the period of the early First Dynasty the following contrasts can be reconstructed:

 ⟨ṯ⟩ /k/,  ⟨ḏ⟩ /k'/,  ⟨g⟩ /g/

and  ⟨š⟩ /χ/,  ⟨ḥ⟩ /χ'/,  ⟨ḥ⟩ /ʁ/.

Since, as a consequence of this assumption and the status of  ⟨z⟩ /t͡s/ discussed before, there is not a single contrast between obstruents which is characterised by nothing but an opposition [–fricative] versus [+fricative], the distinction between stop and fricative articulation is phonologically irrelevant, and we may rewrite this chart as:

 ⟨ṯ⟩ /k/,  ⟨ḏ⟩ /k'/,  ⟨g⟩ /g/

and  ⟨š⟩ /q/,  ⟨ḥ⟩ /q'/,  ⟨ḥ⟩ /ɢ/.

The consonantal system of the language reflected in the inscriptions of the 30th century BC now can be described with a reasonable degree of confidence. It exhibits the following typological characteristics:

- a relatively low number of about twenty phonemes,
- contrasts between three different series of obstruents, which can be determined (by means of later evidence) as unvoiced, voiced, and one distinguished by the presence of a secondary articulatory feature and traditionally labelled "emphatic"[97],
- no systematic opposition between plosive and fricative obstruents,
- a low number of continuants,
- the absence of the phonemes /ʔ/ and /ʕ/.

4.10 It has been suggested in Sections 4.7 and 4.9 that a set of elementary graphemes regularly corresponding with fricative or affricate obstruents did not exist in the Egyptian writing system of the early First Dynasty. Hence, according to the *GPCC-principle*, I assume that such consonants did not belong to the phoneme inventory at the time of the development of the hieroglyphic writing system (or: were not part of the phoneme inventory of the

[97] That "emphatic" should be taken as a purely conventional label for the third series of obstruents has already been stressed by RÖSSLER (1971: 266).

variety spoken by those people who developed the script). There is, however, some evidence – in form of systematic synchronic variation of written forms which show an alteration between 𓋴 ⟨s⟩, 𓊪 ⟨z⟩ and 𓂧 ⟨d⟩, between 𓋴 ⟨s⟩ and 𓎛 ⟨ꜥ⟩, or between 𓈙 ⟨š⟩ and 𓐍 ⟨ḏ⟩ – that a certain number of voiced and of emphatic fricatives or affricates did exist later.[98] These consonants may have developed either internally by a split of the respective stops, or they might have entered the linguistic system of the carriers of written communication by means of horizontal transmission from an external source. Be that as it may, it is obvious from a comparison of (18) and (19) that significant changes took place in the course of the development from Pre-Old Egyptian to Old Egyptian. Even though the sheer difference in number of the respective consonantal systems is impressive, the fact that we can observe the emergence of a new phonemic contrast, characterised by the distinctive feature [±continuative], is of more relevance.[99]

The consonants registered in (19) represent all those distinctions that left traces in written communications. It is likely that not all of them have phonemic status but are rather allophones. One circumstance is of particular importance: The Old Egyptian consonantal system of the late third millennium looks much more typical of an early Afroasiatic language than its "predecessor".

(18) The consonantal phonemes of Pre-Old Egyptian (c. 3000 BC)

Consonants and Glides		[+anterior]		[–anterior]			
		[–coronal]	[+coronal]		[–coronal]		
		[–high]	[+high]			[–high]	
		[–low]					[+low]
		Labials	Alveolars	Palatals	Velars	Uvulars	Glottals
Nasals		m	n				
Laterals			l				
Vibrants			r				
Glides		w		j			
Obstruents	Voiced	b	d	[ɟ]	g	G	
	Emphatic		t’		k’	q’	
	Voiceless	p	t		k	q	
Sibilants		ɸ	s̱				[h]

[98] See KAMMERZELL (1998: 33–34).

[99] Cf. THOMASON and KAUFMAN (1988: 65–109).

(19) Consonantal inventory of Old Egyptian (c. 2200 BC)[100]

Consonants and Glides		[+anterior]		[–anterior]			
		[–coronal]	[+coronal]	[–coronal]			
		[–high]	[+high]	[–high]			
		[–low]					[+low]
		Labials	Alveolars	Palatals	Velars	Uvulars	Glottals
Nasals		m	n	[ɲ]$_{n}$	[ŋ]$_{n}$ ŋ^{w}		
Laterals			l	[ʎ]$_{l}$			
Vibrants			r			[ʁ]$_{r}$	
Glides		w		j			[ʕ]$_{d}$
Voiced	Stops	b	d	ʄ	g	g^{w}	
	Fricatives	[β]$_{b}$	z or ð	ʝ	ɣ	or ʁ	
Emphatic	Stops	p’	t’	c’	k’	k’^{w}	
	Fricatives		s’ or θ’	ç’	x’	or χ’, ḥ	
Voiceless	Stops	p	t	c	k	...	
	Fricatives	f	s or θ	ç	x	or χ	
Sibilants		[ɸ]$_{f}$	ʂ				h

4.11 The vowel system of Pre-Old Egyptian cannot be reconstructed thoroughly, even though it seems not impossible to determine the vocalic structure of particular linguistic elements by means of a combination of etymological evidence and information gained from younger sources.

5. Distinct strata in the lexicon of Earlier Egyptian

5.1 The examples quoted above in Chapter 2 under (3) show that the lexicon of Old English consisted of different strata already at the very beginning of its written documentation and thus illustrate the rather trivial fact that lexical borrowing between different languages can take place irrespective of the circumstance whether or not the speakers use a script. In this chapter, I will suggest that a similar situation of linguistic diversity existed in the Egyptian language of the early third millennium BC.

For this purpose, a small selection of synonyms or nearly synonymous lexemes will be examined. The examples presented in table (20) have been chosen from a rather basic section of the vocabulary and above all include body part expressions and a few verbs denoting fundamental actions and states. A sufficient similarity in meaning between two lexemes is taken for granted, if they occur as equivalents of the same heading in the German-

[100] Light shading marks sounds occuring only marginally.

Egyptian glossaries of ERMAN and GRAPOW (1957: vol. VI) or HANNIG (2000). On the whole, an elaborate study of the semantic scope, usage and later history of particular words, which would be an attractive task, is not intended, but now and then a short discourse about lexical form and meaning is inevitable.

(20)

Meaning	Written form, transcription, phonological interpretation
'face; facing'	**a** *ḫnt* /ɣnt-/ < /ʁnt-/ < /ɕnt-/, **b** *ḥr* /hl-/ < /q'l-/
'head'	**c** *tp* /ˈkap-/ > /ˈcap-/ > /ˈtap-/, **d** *ḏ𓂝ḏ* /ˈcʼarcʼar/; **e** *ḥn* /hn-/, **f** *dbn* (LEg.) /tʼbn-/, **g** *db.t* (LEg.) /tʼb-/, **h** *ḏnn.t* (MEg.), **i** *rš* (LEg.) /rʃ-/
'heart'	**j** *ḫ𓂝tj* /ˈhurtii/ < /q'rt-/, **k** *jb* /ˈjib/
'phallus'	**l** *mt* /mt-/, **m** *bḥ* /bħ-/ < /bq'-/ **n** *ḫnn* /ħn-/ < /q'n-/, **o** *mtỉ* (since LEg.) /mc-/
'milk (product)'	**p** *jrṯ.t* /ɟlc-/ < /ɟlk-/ < *glk-, **q** *jr.t.j* 'milk-' /ɟl-/ < *gl-, **r** *smj* 'fat milk, cream' (MEg.) /smj-/ < *ʂml-
'suckle'	**s** *mnᶜ.t* 'wet-nurse' /mnd-/, **t** *snq.t* 'wet-nurse' /ʂ-nk'-/
'grow old'	**u** *j𓂝*- /ɟr-/, **v** *j𓂝k* /ɟrk-/, **w** *wt* /wt-/, **x** *smsw* /ʂmʂ-/
'descendant, child'	**y** *z𓂝* /tir/ > /ˈʦir/, **z** *šrr.w* (pl.) /ɕl-/ < /xl-/ < /ql-/, **aa** *ḫrd* /xlt'-/ < /qlt'-/, **ab** *nn* /nn-/, **ac** *ḥᶜ𓂝* /ħdr-/ < /q'dr /, **ad** *nḫn* /nɣn-/ < /nʁn-/ < /nɕn-/, **ae** *jd* /jt'-/
'be(come) black'	**af** *mr-* (MEg.) /ml-/, **ag** *kmm* /km-/
'be(come) long'	**ah** *𓂝wj* /rw-/, **ai** *wsḫ* /wʂɣ-/ < /wʂʁ-/ < /wʂɢ/
'bend, stretch'	**aj** *pḏ-* /pk'-/ > /pc'-/, **ak** *dwn-* /t'wl-/
'door, gate'	**al** *ᶜ𓂝* /dr-/, **am** *ᶜrr.t* /dl-/

Commentary on table (20):

c The conventional transcription and phonological interpretation of 'head', retained in table (20), is *tp* /ˈtap/.[101] Considering the reputed absence of phonographically interpreted writings with explicit indication of

[101] See OSING (1976: 313).

the initial consonant in Earlier Egyptian, this reading is based on the spelling , occasionally appearing in sources of the Graeco-Roman Period, and on a chain of assumptions that might be summarised as follows: (I) The hieroglyphs ⟨tp⟩ and  ⟨tp⟩ are sometimes interchangeable and hence probably correspond with the same sequence of consonants. (II) The lexeme  *mtpn.t* 'scabbard, sheath'[102] is supposed to be a derivation on the basis of 'dagger'[103] and as such to contain the consonants of the latter, which at the same time are the phonemes of 'head'.[104] (III) Hence 'dagger' and 'head' both should have corresponded with /tp-/.

To exercise some caution against the unlimited validity of this hypothesis seems indispensable for a few reasons: (I) The purported connection of 'dagger' and 'scabbard' is not apparent,[105] for we do not encounter other denominal nouns formed by means of a prefix *m-* and a suffix *-n*. (II) The word *mtpn.t* 'scabbard' is presumably never written with the grapheme ⟨tp⟩ – which one might expect, if an etymological relationship between and were transparent to the speakers. (III) At least one instance of the Egyptian word for 'scabbard' written with ⟨t̲⟩ /c/ has been quoted.[106] As a consequence, it is not unlikely that *mtpn.t* of ERMAN and GRAPOW (1957: II 170,6) and the lexeme manifesting in  [107] or [108] and subsumed under *mtpn.t* 'apron' (ERMAN and GRAPOW 1957: II 175,14)[109] have an identical root, the general meaning of which might be inferred as 'covering, wrap'. This would be strong evidence in favour of a *GPC rule* ⟨tp⟩ ⇒ /cp/, had we not to take into account that depalatalization of /c/ occasionally occurs as early

[102] Attested on coffins Cairo CG 28034, 28035, and 28037 (LACAU 1904: 92, 98, 114), similar on coffins Berlin 45 (STEINDORFF 1901: 9 and pl. II), Cairo CG 28036 (LACAU 1904: 104) and 28089 (LACAU 1906: 22). Deviating designations – perhaps misspellings – of the same object occur on Cairo CG 28088 ( *mtf.t*, see LACAU 1906: 18), 28087 ( *ʿtpn*, see LACAU 1906: 7; probably instead of  *mtpn*), and on pMac Gregor dating from the XXVI[th] Dynasty ( *mdpz*, see CAPART 1907: pl. 1, 2[nd] col. from the left, line 4–5).

[103] Attested on the coffin of Mn̲w-ḥtp(.w), see STEINDORFF (1896: 29 and pl. V).

[104] Cf. GARDINER (1957: 511, comment on sign T 8).

[105] Regarding formations with an prefix *m-*, KAPLONY gives a statement „hinzuzufügen *t̲pl 'Dolch' Var. *mt̲plt̲" (1966: 184, no. 268), which, I must confess, is enigmatic for me.

[106]  on the coffin of a man named Ḥr(w) from Saqqara, cf. STEINDORFF (1896: 19).

[107] Attested on the coffin Cairo CG 28092 (see LACAU 1906: 56–57).

[108] Coffin Cairo CG 28123 (see LACAU 1906: 141).

[109] The exact nature of the object is not known, but it is presumably not an apron. HANNIG (1995: 376–377) seemingly follows JÉQUIER (1921: 94–95 with fig. 260) in identifying *mtpn.t* with a kind of amulet.

as in late Old Kingdom[110] and ends in writings like and being possibly pseudo-etymological spellings.

Be that as it may, we do not depend on such meagre evidence alone for reconstructing a correspondence /cp-/. There is an instance of the hieroglyphic sign phonographically interpreted by means of ⟨ṯ⟩ in a First Dynasty inscription. On a fragment of a label dating from the reign of King Den we find the group ⟨ṯ-tp⟩.[111] KAPLONY (1963: 313), adhering to and generalising his belief that the sequence of hieroglyphs in archaic inscriptions frequently does not mirror the sequence of linguistic elements in spoken language,[112] takes ⟨ṯ⟩ as belonging to a partially destroyed word  *Ṯ[ḥnw*], combines it with the signs  , and reads *stj-Ḥrw-Ṯ[ḥnw*] 'Libyan Perfume-of-Horus'. Notwithstanding the basic problem, whether archaic or  ⟨st⟩ may be analysed as a possible variant of the elementary grapheme ⟨s⟩,[113] and the fact that the interpretation of  is dubious,[114] one should take the arrangement of signs more serious. Considering the position of to the left of the number  'x+200', it was probably part of what occurs on other labels as  or with or without one, two, or three strokes.[115] can either read *tp-* [... *(1+x)*] 'upon [(1+x) jars]', thus indicating on how many vessels the commodity of oil was distributed,[116] or – less probable – it might be identified with  *tp(.j)-ḥ3.t* 'top quality oil'[117]. Either alternative results in analysing as *tp* (or, in accordance with the exposition of Chapter II, as *kꜣp*) and corroborates that the "original" sound shape of the lexeme 'head' was not /tp/ but /kp/.

d-h The other words referring to 'head' seem to be more specific in meaning than *tp* and may denote 'skull, skullcap, vault of the head' (cf. WALKER 1996: 279 on *ḏ3ḏ3*). The words **e-h** have been included in the list and are treated here comprehensively, because they are of particular interest with respect to the study of how lexical meanings may develop in Egyptian.

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[110] Cf. EDEL (1955/64: § 112 with addition vol. II, p. LVIII).

[111] See PETRIE (1900: pl. XI,6 and XIV,11), KAHL (1994: no. 1248).

[112] Cf. KAPLONY (1963: 9–10, 32–34, 381–382), for a serious review of this practice see KAHL (1994: 16–18).

[113] Cf. KAPLONY (1963: 391), disapproved by KAHL (1994: 668–669).

[114] Cf. HELCK (1987: 171–172), KAHL (1994: 669, no. 1825).

[115] See KAPLONY (1963: 292 with nos. 1580–1581) and cf., e.g., EMERY (1954: 104–105, fig. 108–109).

[116] See KAPLONY (1963: 292).

[117] Attested, e.g. in the Tomb of Hesy (Saqqara S 2405), see KAHL, KLOTH and ZIMMERMANN (1995: 90).

Lexemes **e-h** all illustrate a shift of meaning from 'receptacle (chest, vessel)' to 'skull, head', a development that is well known from other languages[118]:

– *hn-* 'chest, jar' ⇨ *hn* 'skull':
hnw? 'chest'[119], *hnw* 'chest'[120], *hnw* 'jar'[121]; *hn* 'brain-pan, skull, head'[122],

– *dbn-* 'case, chest' ⇨ *dbn* 'skull':
dbn 'case, chest'[123]; *dbn n(.j)- tp* 'helmet'[124]; *dbn* > *tbn* 'skull, head, top'[125],

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[118] Cf. Lat. *testa* 'potsherd' ⇨ PopLat. (Ausonius) *testa* 'skull, head' → OFr. *teste* 'pot, brain-pan, skull, head', Prov. *testa* 'nutshell, head' (ERNOUT and MEILLET 1985: 688–689, MEYER-LÜBKE 1935: 719–720); Lat. *cuppa* 'cup' → OE. *cuppe* 'cup', OHG. *chopf* 'cup' ⇨ ModG. *Kopf* 'head' (ONIONS 1966: 235); MLG. *schedel* 'box, case' ⇨ ModG. *Schädel* 'skull'; OE. *hēafodpann*, ME. *pan* 'pan, skull', ModE. *brain-pan*; ON. *hverna* 'cooking-vessel', Goth. *hwairnei* 'skull'; Swed. *skal* 'bowl, cup; shell' ⇨ *skalle* 'skull' (BUCK 1949: 213–214); for a similar development see Gr. κόγχη 'sea shell' ⇨ 'brain-pan'.

[119] On a ceiling stela from Tomb 1241 H 9 at Helwan, dating from the Second or Third Dynasty (KAHL 1994: no. 3088, see SAAD 1957: pl. 24).

[120] E.g. on a false door of Tomb S 3073 at Saqqara (KAHL 1994: no. 3372, see KAHL, KLOTH and ZIMMERMANN 1995: 194 and 196, late Third Dynasty), similar on a ceiling stela from Helwan (KAHL 1994: no. 3370, see KAHL, KLOTH and ZIMMERMANN 1995: 178–179), *Pyr.* 491a^{W}, *CT* I 259f, V 107a–b.

[121] E.g. *Pyr.* 422c^{W}.

[122] One OEg. attestation on the relief Cairo CG 1535 (*wp -sw m- hn=f* 'crack his brain-pan', see ERMAN 1919: 58), more common in texts of the Ptolemaic and Roman Periods.

[123] E.g. false door of Tomb S 3073 at Saqqara (KAHL 1994: no. 3372, see KAHL, KLOTH and ZIMMERMANN 1995: 194).

[124] Attested in the Annals of Thutmosis III (*Urk.* IV 712,1 and, partly destroyed, 711,8), this word illustrates an intermediate state within the semantic shift: 'case' > 'case of the head' > 'skull, head'. See also Dem. *tbn* *tbn* 'helmet' (SPIEGELBERG 1908: 154–155; ERICHSEN 1953: 624).

[125] Attested since Late Egyptian, e.g., pBritish Museum 10731 vso.1 (EDWARDS 1968: pls. XXIV and XXIVA, rendered as *dbn* by BORGHOUTS 1978: 17), pAnastasi IV 10,12 (GARDINER 1937: 46,9), similar Magical pHarris 501, vso. A8 (pBritish Museum 10042, see LEITZ 1999: pl. 21,8 – cf. hieratic version, the hieroglyphic transliteration gives *tbn*!), Turin Strike Papyrus (pTorino Cat. 1880) rto. 4,5 (PLEYTE and ROSSI 1869–76: pl. XLVII,5, GARDINER 1948: 57,11), pChester Beatty IV, vso. 5,10 (GARDINER 1935: pl. 20,10 and 20A,10), pChester Beatty VII, vso. 1,7 (GARDINER 1935: pl. 36,7). To decide, whether one should transcribe *dbn* or *tbn*, is often difficult. Besides *dbn*, ERMAN and GRAPOW (1957: V 261,12–14) list another lemma *tbn* 'head, top', which one might feel inclined to consider merely a graphic (or even only transcriptional) variant, that came into being due to the similarity of ⟨*d*⟩ and ⟨*t*⟩ in hieratic, were there not Copt. ⲧϧⲏⲗ^{S}, ϭϧⲏⲗ^{B}, ϭϧⲇⲗ^{B} 'fold (for sheep), wickerwork, wicker-basket, protective roof'. Since Bohairic ϭ /t^{h}/ in general did not develop from earlier ⟨*d*⟩ /t'/ (see PEUST 1999a: 85–87), the current practice of straightforwardly identifying ⲧϧⲏⲗ^{S}, ϭϧⲏⲗ^{B}, ϭϧⲇⲗ^{B} with *dbn* 'case, chest' (OSING 1976: 202 with no. 890) is doubtful. As a consequence, it may indeed be justified to as-

– *ḏbꜣ*- (LEg. *db*-) ‘cage, case’ ⇨ *db*- ‘head’:
 ḏbꜣ ‘cage, case’[126];  *ḏbꜣ.t* ‘shrine, coffin’[127];  *db.t*[128] (var.  *db* or  *tb*)[129] ‘head’,

– *ḏn*- ‘jar, basket’ ⇨ *ḏn*- ‘skull’:
 ḏnj.t ‘jar’[130],  *ḏnj.t* ‘basket’[131],  *ḏnjw* ‘basket’[132], *ḏnj.w* ‘containers’[133];  *ḏnn.t* ‘head’[134].

A productive use of this path of semantic change, which however did not become lexicalized subsequently, is documented in *The Contendings of Horus and Seth*, when the god Baba insults Pre-Harakhte by telling him *kꜣr=k šw.y* ‘Your shrine is empty!’[135] Finally, it is worth noting that there is an analogous semantic relationship, that – according to the respective age of the words – seems to result from a process running in the opposite direction:

– *ḏꜣḏꜣ*- ‘head’ ⇨ *ḏꜣḏꜣ*- ‘vessel’:
OEg. *ḏꜣḏꜣ* ‘head’; MEg.  *ḏꜣḏꜣ.t* ‘jar’; ⲥⲱ[S.L], ⲥⲟϯ[Sa.A] ‘cup’.

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sume the existence of a lemma *tbn*, which perhaps developed from *dbn* under the influence of the written forms. On the meaning of *dbn* and/or *tbn*, cf. WALKER (1996: 278).

[126] E.g. Tomb of Ptahhotep at Saqqara (QUIBELL 1898: pl. XXXII), similar Tomb of Ti (STEINDORFF 1913: pl. 131). Cf. also *ḏbꜣ.w* ‘chest, case’ (pBritish Museum 10735 from Abu Sir, see POSENER-KRIÉGER and DE CENIVAL 1968: pl. XXI).

[127] Cf. ERMAN and GRAPOW (1957: V 561,8–12), especially ERMAN AND GRAPOW (1935–53: 99). That the initial consonant had already been depalatalized and changed to /t’/ in LEg. is confirmed by variants like (pChester Beatty IX rto. 6,12 = GARDINER 1935: vol. II, pl. 52), (*DZA* no. 31605830, similar 31605770), Dem. *dby.t* and ⲧⲁ(ⲉ)ⲃⲉ[S], ⲧⲏ(ⲏ)ⲃⲉ[S], ⲧⲉⲃⲓ[S], ⲧⲉⲉⲃⲉ[A], ⲧⲁⲓⲃⲓ[B], ⲧⲱⲃⲓ[B], ⲑⲏⲃⲓ[B], ⲑⲉⲃⲓ[B], ⲧⲉⲃⲉ[F] ‘chest, shrine, container, coffin, bag’.

[128] Attested on oLeipzig 42, rto. 2 (GARDINER and ČERNÝ 1957: pl. III, 1). One might be led to consider this word a mere variant of feminine *tp.t* ‘head’ (> ⲧ-ⲁⲡⲉ[S.A.L], with reinterpretation of the initial consonant as definite article), but the repeatedly alleged phonemic merger of ⟨*t*⟩ /t/ and ⟨*ḏ*⟩ /t’/ is obviously restricted to the verb *ḏd* ‘say’ (cf. PEUST 1999a: 84–85 with no. 72), and a variation of ⟨*p*⟩ /p/ and ⟨*b*⟩ /b/ is even less likely. Furthermore, *tp.t* ‘head’ is generally not written with an explicit phonographic indication of its initial consonant by means of an elementary grapheme. Thus, the likelihood that we have to deal with a graphical merger of hieratic ⟨*t*⟩ and ⟨*ḏ*⟩ is negligible.

[129] See oGardiner 300, rto. 1 (GARDINER and ČERNÝ 1957: pl. XCI, 1).

[130] E.g. *Pyr*. 437a[W]. For the conceivable shape of this type of vessel, see BALCZ (1934: 61).

[131] E.g. pBritish Museum 10735 (POSENER-KRIÉGER and DE CENIVAL 1968: pl. L–LI).

[132] E.g. pBritish Museum 10735 (POSENER-KRIÉGER and DE CENIVAL 1968: pl. L–LI).

[133] E.g. *CT* II 203a[B2P], see also ⲥⲁⲛⲟ[B] ‘basket, container’.

[134] E.g. *CT* II 134b[S1C], V 286d[B2Bo].

[135] See pChester Beatty I, rto. 3,10 (GARDINER 1931: pl. III,10 and IIIA,10; 1932: 40,15).

If we may reconstruct the existence of a root **gwꜣ-* 'head, skull' from the somewhat enigmatic appearance of the classifier  in the lexemes *gwꜣ* 'pull tight'[136] and  *gwꜣwꜣ* '…'[137], we might suppose that a similar development took place from **gwꜣ-* 'head, skull' to MEg.  *gwꜣ.t* 'case, chest'[138].

i LEg.  *rš* 'peak'[139] was borrowed from a Semitic word belonging to the root *rʾš-* 'head' (e.g. Akk. *rēšu* 'head, summit', Ugar. *rꜣš* 'head, top', Amarna-Akk. *ru-šu-nu* 'our head', Hebr. *rōš* 'head, uppermost, summit', Phoen. *rʾš* /ro:ʃ/ 'head', Aram. *reš* 'head, beginning', Arab. *raʾs* 'head, summit') and occurs in Egyptian texts only in its metonymic function, referring to the "head" of a mountain. That the basic meaning, however, was not unknown to the Egyptian scribes is indicated by the use of the classifier  .[140]

j-k On the meaning and mutual relation of *ḥꜣt(j)* and *jb* see VON DEINES AND WESTENDORF (1961/62: 39–42), who understand *jb* as an older and *ḥꜣt(j)* as a younger word – on the basis of the fact that the first-named can be related to Afroasiatic cognates (see below) and got lost in Later Egyptian, whereas the last-named became Copt. ϩⲏⲧ and was retained until the end of the Egyptian language history. For a recent attempt to ascertain a difference in meaning between *ḥꜣt(j)* and *jb*, see WALKER (1996: 147–186).

m  does not exactly signify 'penis', but rather 'glans penis'.[141] The word is common in medical texts (e.g., pEbers, pSmith). Its use is not confined to referring to a part of the male genitals, but *bḥ* is also used to designate a part of the sexual organ of a female hippopotamus.

n-o  *ḥnn*, that is perhaps etymologically related with  *ḥnn* 'hoe', was the most common expression designating 'penis, phallus' from OEg. to LEg., while  *mtꜣ* seems to be the standard lexeme in Late and Graeco-Roman Period texts.[142]

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[136] E.g. *CT* IV 164e^{Sq6C}, similar *CT* III 97e^{B9C}, IV 13d^{B2P}.

[137] Attested once in the inscription of Ahmose at Elkab (***Urk.*** IV 7,4), meaning unknown.

[138] E.g. pKahun VI.15 vso., line 17 (GRIFFITH 1898: 49 and pl. XIX), similar – but without the use of the classifier – pKahun VI.11 rto., line 20 (GRIFFITH 1898: 51 and pl. XX).

[139] E.g. pAnastasi I 21,5 (pBritish Museum 10247, see FISCHER-ELFERT 1986: 133), cf. HOCH (1994: 209–210, no. 285).

[140] Three among nine instances quoted by HOCH (1994: 209) exhibit this classifier.

[141] Cf. VON DEINES AND WESTENDORF (1961/62: 240–241).

[142] See, e.g., the use of *mtꜣ* as an explanation of the hieroglyph in the Sign Papyrus from Tanis (GRIFFITH 1889: pl. II).

w This word is perhaps already attested on seal impressions dating from the reign of Djet (cf. KAPLONY 1963: pl. 21,45A and 45B, KAHL 1994: no. 932).

5.2 Attempting to find etymologically related words in other languages without leaving the traditional paths of Egyptian etymology readily yields results for some of the lexemes listed in (20), since they have more or less well known cognates in Semitic and/or in other areas of the Afroasiatic group. Egyptian lexemes are connected with Semitic or Afroasiatic roots by means of the symbol ≡ only in case the respective lexical unit is well attested in several subgroups and thus probably forms part of the common Proto-Afroasiatic vocabulary. The sign ≡/↔ indicates that there is some historical relationship between the respective elements, be it genetic or by borrowing.

(20-b) Eg. **ẖl-** ≡ Sem. ***ʕl-** 'upper part, over, above' (BRUGSCH 1867/68: 978,[143] Sethe according to EMBER 1917: 89, no. 141)

- OEg. *ḫr* /ẖl-/ 'face, over, on, above'.
- Sem. *ᶜl- 'upper part; over':
  Akk. *eli*, Ebl. al_6 or al_6-*a* /ʕalay/, Ugar. ᶜ*l*, Hebr. ᶜ*al*, Phoen. ᶜ*l*, Aram. ᶜ*al*, Arab. ᶜ*alā*, ᶜ*al* 'over, above', SArab. ᶜ*l*, ᶜ*lw*, ᶜ*ly*, Eth. *lāᶜla* 'over, above' (RÖSSLER 1971: 298, SCHENKEL 1990: 52, LIPIŃSKI 1997: 466).
- Berb. ᶜl- 'on' (←Arab.):
  Qabyle *eᶜla*, ᶜ*ala* (in expressions borrowed from Arabic).

Cf. also parallel verbal formations in Egyptian (*ḫrj* /ẖl-/ 'be far, withdraw') and Semitic (*ᶜly- 'go up'), as well as in Berber (Qabyle ᶜly- 'rise, go up').[144]

A different etymology is propagated by TAKÁCS (1999: 298), who connects Eg. *ḫr* with Southern Berber *whr- (Tahaggart *ăwr*) 'be on, be elevated' (which perhaps may be related to Qabyle wr- in *iwriren* 'elevation' and *taurirt* 'hill' of DALLET 1982: 872). Takács' assumption seems improbable for more than one reason: There is etymological as well as typological evidence that OEg. and PreOEg. ⟨r⟩ corresponded with /l/, whereas /r/ formed a graphoneme with ⟨ỉ⟩ (cf. SCHENKEL 1990: 34, 36, 44, KAMMERZELL 1998: 32–33, PEUST 1999a: 128). Moreover, the empirical basis of the second consonant in Tuareg *whr- – Prasse's h_1, the existence of which is not generally accepted among Berberologists – is not particular strong: this elements has left no direct traces in any variety of Berber and is primarily reconstructed for deriving the attested forms from a triconsonantal root (M. Kossmann, p.c.). On the other hand, the Egyptian lexeme shows nothing which corresponds with the initial consonant of Tuareg *w(h)r-. So we better discard any relationship of Berber *w(h)r- and Eg. *ḫr*.

(20-d) Eg. **k'rk'r-** ≡/↔ Sem. ***qdqd-** 'head' (RÖSSLER 1971: 305)

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[143] In this case as well as in a few others, it is difficult to ascertain, whether Brugsch's manner of grouping together particular Egyptian and Arabic words indicates that he had conceived an etymological relationship. Since, however, ERMAN (1892: 106) stated that he had been amply inspired by Brugsch, it seems justified to give credit to the latter.

[144] According to M. Kossmann (p.c.), it is difficult to interprete Northern Berber ᶜly- as a loan from Arabic (in contrast to common presumptions).

- Eg. *ḏꜣḏꜣ* /ˈcʼarcʼar/ < /kʼrkʼr-/ 'head'.
- ESem. and NWSem. *qdqd- 'head':
  Akk. *qaqqadu-* < **qadqadu-* 'head' (SCHENKEL 1990: 47–48, LIPIŃSKI 1997: 214), Ugar. *qdqd*, Hebr. *qodqod* 'vertex' (RÖSSLER 1971: 305).
- Berb. *qr- 'head':
  Taqb. *aqeṛu* 'head, leader' (DALLET 1982: 672–673).

An untenable connection between Eg. *ḏꜣḏꜣ* 'head' and AA as well as IE lexemes meaning 'bald' has been drawn by BOMHARD (1984: 232, no. 133) and BOMHARD and KERNS (1994: 464–465, no. 310).

(20-k) Eg. **jb-** ≅ AA ***lb(b)-** 'heart' (ERMAN 1892: 107)

- OEg. *jb* /ˈjib/ < *ˈlib- 'heart'.
- Sem. *lbb- 'heart':
  Akk. *libbu*, Hebr. *lēb*, Aram. *lebbā*, Arab. *lubbun*, SArab. *lebb-* 'heart' (RÖSSLER 1971: 314, SCHENKEL 1990: 53).
- Berb. *ulĤ < *ulβ 'heart'[145]:
  Ahaggar *ul*, Taneslemt *ulh*, Shilh *ul*, Siwa *uli*, Augila *ul* 'heart' (Kossmann 1999: 65, no. 24, 79, no. 121 and 82–83, no. 133).
- Cush. *lb- 'heart':
  Bedja *lēb* 'belly, stomach, heart'; Somali *lāb* 'breast, heart'.
- Omot. *lb(b)- 'heart':
  Kaffa *nibbō* 'heart'; Basketo *lippe* 'belly', Shinasha *libbo* 'heart'.
- Chad.*lb- 'heart':
  Musgoy *lib* 'belly'; Daba *li̥bí* 'stomach'; Mokilko *ʾùlbé* 'heart' (TAKÁCS 1999: 87–88).

(20-m) Eg. **bħ-** ≅/↔ Sem. ***bwħ-** 'penis' (ERMAN and GRAPOW 1957: I 419, 15–16)

- OEg. *bḥ* /ˈbuħ-/ > ⲃⲁϩ, ϥⲁϩ.
- Sem. *bwḥ-'penis'
  Arab. *būḥ-* 'penis', *ʾabāḥa* 'violate a woman'; SArab. *bḥt* 'phallus (?)' (COHEN, BRON and LONNET 1993–: 51).

One might ask, whether the conventional transcription of 𓃀𓅡𓄿𓎛𓂸 as *bꜣḥ* should be altered to *bḥ*, since written forms with 𓃀𓅡 ⟨b-bꜣ⟩ or 𓃀𓅡𓄿 ⟨b-bꜣ-ꜣ⟩ are not familiar prior to a time, when these groups could be used for writing simple /b/. Coptic ⲃⲁϩ^{S}, ϥⲁϩ^{S} and the assumed connection with Arab. *būḥ* allow to reconstruct a root *bḥ* as well.[146] Whereas a form *bꜣḥ* – which might have corresponded with OEg. °bəˈruħ > LEg. °bəˈʔuħ – would be also compatible with the Coptic spellings, its relation with Arab. *būḥ* were more complicated.

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145 RÖSSLER (1971: 314) has Proto-Berber *lbw which is probably meant as developed from *lbb. A comprehensive study of the problem of Berb. *Ĥ (a consonant that is lost in most varieties of Berber, but in general has been preserved in Tuareg as /h/ and in the dialects of the Libyan oases Ghadamès and Augila as /β/) has been conducted by KOSSMANN (1999: 61–135). He mentions Augila *ul* 'heart' as one of the few exceptional words that show Ø < *Ĥ instead of regular /β/ < *Ĥ (1999: 79).

146 The word 𓃀𓅡𓎛𓏏 *bꜣḥj.t* 'belt with pearl string pendants' (worn over the apron), which is repeatedly written with 𓅡 or 𓃀𓄿 in Middle Kingdom texts (e.g. on the coffin Cairo CG 28089, see LACAU 1906: 22) is likely to be separated from *bḥ* 'glans', especially since the alleged meaning 'phallus bag' has been discarded (cf. BEHRENS 1982).

While the Egyptian lexeme was used in grammaticalized expressions like *m-bḥ-* 'in front of, before' already in the Pyramid Texts, it is attested as a concrete noun scarcely before the second millennium.

(20-r) Eg. **ṣml-** ≅/↔ Arab. ***ṯml-*** [milk product] (RÖSSLER 1971: 287)

- MEg. *smj* /smj-/ < OEg. *ṣml- 'fat milk, cream'.
- Arab. *ṯumāla.t* /θuma:lat/ 'milk foam' (RÖSSLER 1971: 287).

Perhaps one may also compare Berber (Tuareg) *esīm* 'melted fat' – which already COHEN (1947: 134, no. 264) identified with Eg. *smj* (as well as with Semitic and Cushitic lexemes that are less likely cognates[147]).

(20-t) Eg. **-nk'-** ≅ Sem. ***ynk'-** 'suck, give suck, nurse' (according to ERMAN 1892: 118 an etymology that was first proposed by Steindorff)

- OEg. *snq* /ṣ-nk'-/ 'suckle', *snq.t* 'wet-nurse' /ṣ-nk'-/.
  Possible derivations of the root /-nk'-/ by means of the prefix *m-* are PreOEg. *mnq- > OEg. *mnḏ* 'breast' (⇐ 'place of suckling'), NeoMEg. *mnq* 'milk' (⇐ 'object of suckling'), and perhaps also *Mnq.t*, the name of a goddess who has a connection to beer in texts of the Graeco-Roman Period.
- Sem. *ynq- 'suck':
  Akk. *enēqu-* 'suckle', *mušēniqtum* 'wet-nurse', Ugar. *ynq-*, Hebr. *ynq-*, Aram. *ynq-* 'suck', Arab. *nāqa* 'cow-camel' (RÖSSLER 1971: 294, SCHENKEL 1990: 53).

For possible connections with other Afroasiatic languages, cf. TAKÁCS (1999: 211).

(20-aa) Eg. **xlt'-** ≅/↔ Eth. ***ḫḏṭ-*** 'child, small' (RÖSSLER 1971: 296)

- OEg. *ḫrd* /xlt'-/ 'child, boy'.
- Eth. *ḫədāṭ* 'small' (RÖSSLER 1971: 296).

(20-ab) Eg. **nn-** ≅/↔ Sem. ***nn-*** 'child, offspring' (Kammerzell)

- OEg. *nn* /nn-/ 'child, boy'.
- Sem. *nīn- 'child, offspring' (LIPIŃSKI 1997: 544):
  Hebr. *nîn* 'offspring, posterity' (KOEHLER and BAUMGARTNER 1985: 615).

Unambiguous instances of the noun *nn* 'child' used as an appellative in Old Egyptian are not common.[148] Its existence can nevertheless be inferred from the occurrence of the group in the toponym *Nn-nzw* (later *Ḥw.t-Nn-nzw* > Copt. ϩⲛⲏⲥ, Arab. *Ehnasiya al-Medina*; Lat. *Heracleopolis magna*).[149] It seems not unlikely that the younger word 'child'[150] usually transcribed *nww* is identical with *nn*. The Semitic lexeme is considered a nursery word by LIPIŃSKI (1997: 544), thus one should not overestimate the significance of this etymology.

(20-ac) Eg. **ħdr-** ≅/↔ Arab. ***ḥdr-*** 'small' (Kammerzell)

- OEg. *ḥ^ʕ* /hdr-/ 'child, boy'.

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[147] COHEN (1947: no. 264) followed Brugsch and ERMAN (1892: 119) in comparing Eg. *smj* with Sem. *šmn- (e.g. Arab. *samn* 'melted butter').

[148] There are a few places of the Pyramid Text exhibiting *nnj* (*Pyr*. 428a[W.T(296)]) or (*Pyr*. 428a[T(305)], 445d[W]), which may be examples of that lexeme. The interpretation of the respective passages, however, is dubious.

[149] For an early attestation, see on the Palermo Stone, rto. 3, no. 9 (SCHÄFER 1902: 20).

[150] E.g. *CT* IV 179t[GIT] (similar 180a, 182i).

- Arab. *ḥaydar* 'small' (LIPIŃSKI 1997: 212).

This lexeme, appearing in Earlier Egyptian documents in forms like  *ḥ^{c}ʒ* 'boy, youth'[151],  *ḥ^{c}ʒ* 'boy, youth'[152],  *ḥ^{c}ʒ.(w)* 'adolescents'[153], is attested from the Third Dynasty until the Graeco-Roman Period, but seemingly was not very current. Contrary to what is stated in ERMAN and GRAPOW (1957: III 42,1), it is probably not possible to correlate *ḥ^{c}ʒ* with a particular age group. The word is used in opposition to *jʒw* 'old'[154] and may indicate a rank in contrast to *qʒj* 'high'.[155]

(20-ae) Eg. **jt'-** ↔/≅ Sem. ***ld-** 'child' (EMBER 1913: 113, no. 26)

- OEg. *jd* /jt'-/ 'boy'.
- Sem. *ld- 'boy' (from *wld- 'give birth'):
  Akk. *līdu* 'child', Eth. *ləd* 'son, child' (TAKÁCS 1999: 240); cf. Tigre *wad* 'son' (E. Littmann, p.c. mentioned by EMBER 1913: 113, no. 26).

The correspondence of Eg. /t'/ and Sem. /d/ is irregular. Cf. also above, footnote 21.[156]

(20-ag) Eg. **km(m)-** ≡/↔ Syr. ***-km-** ≡/↔ Cush. ***kmm-** 'be black' (EMBER 1917: 84, no. 103)

- OEg. *kmm* /kmm-/ 'be(come) black'.
- (Talmudic) Syr. *ʾukkāmā*, *ʾukkām* 'black'.
- Gawwada (ECush.) *kumma*, Gollango (ECush.) *kúmma* 'black' (TAKÁCS 1999: 219).

(20-ai) Eg. **wṯy-** ≅ Sem. ***wšʕ-** 'be wide' (BRUGSCH 1867/68: 278)

- OEg. *wsḫ* /wṯy-/ 'be wide, be spacious' > Dem. *wsḫ* > **ⲟⲩⲱⲱⲥ**^{SLBF}, **ⲟⲩⲟⲱⲥ**^{M}, **ⲟⲩⲱⲥϥ**^{A}.
- Sem. *wš^{ʕ}- 'be wide':
  Arab. *wasiʿa* 'be wide, be capacious' (RÖSSLER 1971: 299, SCHENKEL 1990: 52, TAKÁCS 1999: 305); cf. also Hebr. *yšʿ* 'help, assist, save'.
- Berb. ws^{ʕ}- 'be wide' (probably ←Arab.):
  Taqb. *ewseʿ*- 'be wide, be ample', *wesseʿ*- 'enlarge' (DALLET 1982: 876).

(20-ak) Eg. **ṯ'wl-** ≅ Sem. ***ṯwl-** 'stretch' (BRUGSCH 1867/68: 1619, CALICE 1931: 37)

- OEg. *dwn*, var. *dwʒ* (*Pyr*. 1098a^{M}) /ṯ'wl-/ 'stretch out; be stretched'.
- Sem. *ṯwl- 'be long, be stretched':

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[151] Ink inscription on a pot-sherd found in Tomb K1 at Bayt Ḫallāf, (KAHL 1994: no. 3149, see KAHL, KLOTH and ZIMMERMANN 1995: 14). The lexeme occurs in the form  *ḥ^{c}ʒ.(w)* or *ḥ^{c}ʒ.(wj)* (pl. or du.).

[152] E.g. *Pyr*. 1104c$^{M.N}$, 1105a$^{M.N}$ (pl. in all instances).

[153] E.g. *CT* II 245b^{S2C}, similar V 258h$^{B2Bo, B4Bo}$, VII 392c (most sources).

[154] See *jnk wnt ṯz jʒw mnʿ.t- ḥ^{c}ʒ.(w)* 'I was indeed the support of the old and the caretaker of the children' (stela Louvre C1, see SETHE 1928: 82,3).

[155] See *ḥ^{c}ʒ.w m-rʾ-pw qʒj.w* 'low or high' (Instructions of Any B 21,10, cf. QUACK 1994: 319,9); *wn.ḫr ḥz.wt=j mn.tj m- ḥr.j-jb qʒ.(w) ḥ^{cʾ}.(w)* '..., I will definitely meet with firm approval among the high and the low' (*Urk*. IV 1073,13).

[156] For a comparison of Sem. *wld- with Russ. *molod-* 'young' and even with ModE. *child*, see LEVIN (1995: 261–267).

Hebr. *ṯwl-* (hophal: 'be hurled down', hiphiʿil: 'cast out, cast from afar'), Arab. *ṯwl-* 'be extended, be long', OSAr. *ṯl-* 'length' (RÖSSLER 1971: 285, KOEHLER and BAUMGARTNER 1985: 351, SCHENKEL 1990: 53, TAKÁCS 1999: 247).

- Berb. ṯwl- 'be long, be stretched' (probably ←Arab.):
  Taqb. *ṯewwel-*, *ḏewwel-*, *ḏebbʷel-*, *ḏul-* 'lengthen, be long' (DALLET 1982: 844–845).

(20-al) Eg. **dl(l)-** ≡ Sem. ***dl-** 'door' (RÖSSLER 1971: 286)

- OEg. *ʿr.wt* /dl-/, *ʿr.wjj* (fem.) /dl-/, *ʿrr.t* /dll-/ 'door, gate'.
- Sem. *dl- 'door':
  Akk. *daltu* 'door, leaf of a door', Ugar. *dlt-* 'door', Phoen. *dl-*, *dlt-* 'door' Hebr. *delet* 'door, leaf of a door, lid' (RÖSSLER 1971: 286, SCHENKEL 1990: 50; different TAKÁCS 1999: 347).

In Egyptian texts of the late second millennium BC, when the phonetic shape of Eg. *ʿr(r)-* had undergone a considerable change from /dl(l)-/ to /ʕr(r)-/, the words *tr*' 'door, gate' and *trt* 'door-leaves' occur (HOCH 1994: nos. 528 and 533). These are loans from a Semitic language (*pace* MEEKS 1997: 53–54) and illustrate the fact (mentioned above in Chapter 2.1) that a language may exhibit synonyms which ultimately go back to the same source but entered the system at different points of time and were transmitted differently.

5.3 A second group of lexical units listed in table (20) primarily consists of elements that seemingly do not have Afroasiatic cognates, but surprisingly show a close resemblance to word forms of particular Indo-European languages. Besides those, there are a few others the shape of which may be compared with similar words of Afroasiatic and Indo-European languages. These are treated in this section, too. The Indo-European words are quoted exactly according to the respective source publications. This often results in distinct forms of a particular root or stem appearing side by side. It should be noted that most differences do not represent contrastive forms that might have co-existed in Proto-Indo-European but rather reflect alternative reconstructions within different linguistic models or are even only the outcome of divergent transcription systems. In any case, they might be easily transferred into each other. A list of the most common sound correspondences between Pre-Old Egyptian and Indo-European, including a synopsis of divergent notations of Indo-European phonemes, is presented as Appendix II.

(20-a) Eg. **ʁnt-** ↔ IE ***H$_2$nt-** 'forehead' (BOMHARD 1981: 435)

- OEg. *ḫnt* /ɣnt-/ < /ʁnt-/ < /ɢnt-/ 'face, forehead, front; in front of, opposite'.
- IE *Hant^h- (G&I 175), *ant (< *ə$_2$ant- < *ə$_2$ent-) (W 4), *ant-s- (P 48–50) 'forehead, front':
  Hitt. *ḫant-* 'front, forehead'; Gr. κατάντες 'down the front'; ON. *enni*, OHG. *andi* 'forehead'; OIr. *étan* (< **antono-*) 'forehead';
  IE *anti (locative singular) 'against, in front of':
  Hitt. *ḫanti* 'in front, especially'; OI. *anti* 'opposite,in front, near'; Gr. ἀντι 'against'; Lat. *ante* 'before, against' (cf. also LEVIN 1995: 382–387).

In Egyptian and in Indo-European similar derivations of this root exist: OEg. (*Pyr*. 1482e[N]), (*CT* VII 43g[T9C]) *ḫntj* '*cloth beam*' (note the determinative V97), IE *anətā- (W 4) 'doorjamb' > Lat. *antae* 'doorjambs', Gr. ὰντίον 'cloth beam' (Kammerzell).

NB: The interpretation of the resemblance of Eg. *ḫnt-* and IE *Hant[h]- proposed by BOMHARD (1981: 435, 1984: 262–263) and BOMHARD and KERNS (1994: 554, no. 414) differs fundamentally from the explanation suggested in this paper.

(20-c) Eg. **kp-** ↔ IE ***kp-** ↔ Berb. **ɣf-** 'head' (Peust and Kammerzell)

- PreOEg. *tp* /kp-/ > /cp-/ > /tp-/ 'head; on top'.
- IE *kup- and expressive form *kupp- (W[1] 30, P 591) 'vessel':
  Lat. *cuppa* 'drinking vessel' → OHG. *kopf* 'cup' > MHG. *kopf* 'head'; OE. cuppe 'cup'; ON. *koppr* 'vessel'.
  IE *keup- / *keub- (W[1] 30, P 589–592):
  Gmc. **haup-* > OE. *hēap* 'heap'; ModG. *Haufen* 'heap'.
  IE *k[h]ap[h]ut[h]- (G&I 713), *kaput (W 37), *kap-ut- (P 529–530) 'head':
  Lat. *caput* 'head'; Gmc. **haubidam* > ModE. *head*; ModG. *Haupt* 'head'.
  IE *k[h]ap[h]-el- (G&I 713), *kap-(e)lo- (P 529–530) 'vessel':
  OI. *kapāla-* 'bowl, brain-pan, skull'; Gr. κύπελλον 'cup, goblet'.
- Berb. *ɣf- (in some varieties > *xf-) 'head':
  Ghadames *êɣăf*, Ahaggar *éɣef*, Siwi *axfi* 'head' (KOSSMANN 1999: 237, no. 719), Taqb. *ixef* 'head, peak' (DALLET 1982: 894).

The IE forms are all derived from a core root *keu- (W[1] 30), which is considered the "base of various derivatives with assumed basic meaning 'to bend,' whence a 'round or hollow object'" (W[1] 30). If the elementary hieroglyphic grapheme  ⟨k⟩ gained its function in the way it is suggested by ERMAN and GRAPOW (1957: V 83,1) from a noun **k*- 'basket', this might be linked with  *tp* /kp-/ 'head' like IE *keu- is connected with *kup-, *kupp- or *keup- / *keub-. The respective path of semantic change would be the same as those discussed in Section 5.1 (**d-h**).

(20-j) Eg. **ḥrt-** ↔ IE ***k̂rd-** 'heart' (Kammerzell)

- OEg. *ḥꜣt(j)* /ʰhrt-/ < *qʾrt- 'heart'.
- IE *k̂[h]er- (nom./acc.), *k̂[h]er-t'- (G&I 160), *k̂erd-, *kerd-en-, *kṛd-yā- (W 41), *k̂erd-, *k̂ērd-, *kṛ̂d-, *k̂red- (P 579–580) 'heart':
  *kṛd-yā- > Gr. καρδία 'heart, stomach'; Lat. *cor*, gen. *cordis* 'heart'; OIr. *cride*, ModIr. *croidhe* 'heart, middle'; OE. *heorte* > ModE. *heart*; ModG. *Herz* 'heart'.

This grouping is intricate for several reasons. The correspondence of Eg. *ḥ* and IE *k̂ and of Eg. *t* and IE *d is not regular. This obstacle cannot be removed easily: Even though there are scarcely any instances of the sign  with phonographic notation of the first two consonants,[157] the conventional transcription *ḥꜣt* is obviously justified.[158] Traditionally, the word  *ḥꜣ(j)* 'heart' is considered an adjective formation on the basis of the noun  *ḥꜣ.t* 'forepart, beginning, first' and its "original" meaning interpreted as '(the one) being in front'.[159] This, however, is plainly a conjecture, since written forms which un-

[157] For an exception see  (*CT* I 56c[BH5C]).

[158] Cf. SETHE (1901) and see especially MEg. writings like  (e.g. *CT* I 196h[B12, B16C]).

[159] See SETHE (1901: 137).

ambiguously support this assumption are not familiar in Old Egyptian.[160] The possibility that a foreign word meaning 'heart' was borrowed in a phonetic form resembling Egyptian *ḥ3.t* 'forepart' and only later was interpreted as an adjectival derivation of that base should therefore not be dismissed from the start.

Neither /k/ nor /c/, which one should expect to correspond with IE *k̂, are compatible with /d/ – or with /t'/ – in Earlier Egyptian.[161] This might have resulted in the remodelling of a borrowed root that originally had the shape *krd-, *kʲerd- (traditional rendering), *kʰrt'- or *kʲʰert'-. Moreover, irregularities also occur within Indo-European: OI. *hṛd-*, *hṛdaya-* and Av. *zərəd-* both look as if they were derived from a form *ǧʰerd-.[162] Thus, there is some evidence that the word might have had a complicated history. Nevertheless, it would not have been included in this paper, were it not that two eminent scholars of Indo-European studies, Tamaz Gamkrelidze and Wolfgang P. Schmid, showed quite confident about relating the Egyptian and the Indo-European forms (p.c.).

(20-l) Eg. **mt-** ↔ IE ***mt-** 'phallus' (Kammerzell)

- OEg. *mt* /mt-/ [sign], MEg. *mt*, Dem. *mt* 'phallus' (ERICHSEN 1954: 184).
- IE *mēit-,*məit-, *mit- (P 709) 'upright, post; penis':
  OI. *mēthi-* 'upright, post'; Arm. *moit`* 'pillar'; Lat. *meta* 'peg, plug'; Lith. mìets 'post'; Ir. *moth* 'penis'.

A word  *mt* 'phallus' is but rarely if at all attested in Egyptian.[163] That a lexeme as such nevertheless was not unknown is indicated by the presence of the hieroglyph corresponding with /mt/ and also may be inferred from the existence of  *mtw.t* 'semen', which is best considered a derivation of *mt* meaning '(fluid) of the phallus'.[164]

One should also take into consideration the formal and semantic parallel in both linguistic areas between this lexeme and Eg.  *mt* 'vessel, cord, sinew, muscle' (VON DEINES AND WESTENDORF 1961/62: 400–408) or 'anatomical conduit' (WALKER 1996: 270) and Gr. μίτος 'cord, lace, heddle'.

TAKÁCS (1999: 227) compares HECush. *muta*, NOm. *mute* 'penis'. ERMAN (1892: 112) reconstructed an underlying Egyptian root with a meaning 'phallus'.

(20-p) Eg. ***glk-** ↔ IE ***glk-** and (20-q) Eg. ***gl-** ↔ IE ***gl-** 'milk' (Kammerzell)

- OEg. *jrṯ.t* /ɟuˈlaːcat/ < /ɟuˈlaːkat/ < *guˈlaːkat 'milk' (without 2nd velar: *jr.t.j* /ɟl-/ < *gl-).

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[160] According to *DZA* (no. 26525930) they do not exist in texts from the Old Kingdom at all. The plural is also written in a way that is not typical for adjectival derivations (OEg. , Late MEg. , without).

[161] See KAMMERZELL (1998: 30).

[162] Cf. BUCK (1949: 251).

[163] I know very few possible examples only, most of them occuring in slightly different versions of the same spell of the Pyramid Texts, cf. *bwt- Pjpj Nfr-kȝ-Rᶜw -pw ḥs n(j)- wm.n=f bwt- Pjpj Nfr-kȝ-Rᶜw nw mj- twr Stḥ mt- rḥ.(wj)=f ḏȝ.y p.t Rᶜw -pw ḥnᶜ Ḏḥwt* 'What Pijaapij Nafilkarliiduw detests is faeces, he cannot eat, for Pijaapij Nafilkarliiduw detests this like Seth rejects the *phallus* of his two companions who cross the sky' (*Pyr*. 128a–cᴺ, sim. 128a–cᴹ and 128a–cᵂ·ᵀ). Another possible instance is MEg. *mt* in *jw mt=j m- Rᶜw ḥtp n- Jwn-mʿw.t=f* 'My phallus is Re, who is favourable to Pillar-of-his-Mother.' (*CT* VII 160pᵖᴳᵃʳᵈ.ᴵᴵᴵ). WALKER, who translated as 'phallus' but suggested to read *b(ȝ)ḥ* (1996: 299), drew the attention to the association of and Horus' epitheton 'Pillar-of-his-Mother', a connection that deserves additional attention in the light of the situation in Indo-European.

[164] On *mtw.t* constructed as a plural noun, see EDEL (1955/64: vol. II, LXIV, addition to § 286).

- IE *g(a)lag- or *g(a)lakt- (W 54, s.v. melg-) 'milk, sap' (also forms without 2nd velar):
  Hitt. *galattar*, *galaktar* 'organic fluid, sap'; Gr. γάλα, gen. γάλακτος, Homeric γλάγος, Cretan κλάγος, κλάκκον 'milk'; Lat. *lac*, gen. *lactis* 'milk' (→ MIr. *lacht*, Cymr. *llaeth*).

Forms without a velar consonant in root-final position occur in Indo-European (cf. Gr. γάλα) and – rarely – in Earlier Egyptian (cf.  *bḫz jr.t.j* 'milk calf'[165],  *jr.t.j* 'milk calf'[166], and  *jr.yt* 'milk cow'[167]) and constitute a shared irregularity. Moreover, neither Eg. *glk- nor IE *glak- is in accordance with the respective rules of compatibility, since two non-identical velar stops usually do not co-occur within the limits of a single morpheme. This may imply that in both cases the word had been borrowed from a third language.

Etymologies relating Eg. *jrṭ.t* with IE words for 'milk' have been found independently from each other by CARLTON HODGE (1997: 211), who identified *jrṭ.t* (< **(')lH-kY*) with Lat. *lac* but suggested to abandon the "unnecessarily complicated efforts to connect lac with Gk *gála*", and FRANK KAMMERZELL, who first presented to the public this identification during a lecture on Afroasiatic and Non-Afroasiatic components of the Egyptian lexicon (with handout) held on the occasion of the Seventh International Congress of Egyptologists at Cambridge in September 1995.

(20-s) Eg. **mnd-** ↔ IE ***mnd-** 'suckle' (Kammerzell)

- Eg. *mnᶜ.t* /mnd-/ 'wet-nurse', OEg.  *mnᶜ.t* /mnd-/ 'milk-cow'.
- IE *mend-, *mond- (P 729) 'suckle, suck; suckling animal; breast':
  Alb. *ment* 'suckle, suck', *mezej* 'suckle', *mes, mezi* (m.) 'foal'; Rum. *minz* 'foal', *manzat* 'young cow'; MIr. *menn*, *mennán* 'young animal, calf, foal'; Cymr. *mynnan* 'kid'; OHG. *manzon* 'teat'.

BOMHARD (1984: 274, no. 287) as well as BOMHARD and KERNS (1994: 657, no. 534) identify the Indo-European root with OEg.  *mnḏ* /mnᶜ-/ < PreOEg. *mnk'- 'breast', and GREENBERG and RUHLEN (1992) even make use of Eg. *mnḏ* for their reconstruction of a "Proto-World etymology" **mälgi* 'suck the breast' (similar RUHLEN 1994: 242–251 and BENGTSON and RUHLEN 1994: 308–309)! This case lucidly demonstrates the fragility of some of the alleged "Nostratic" etymologies: Even though the respective lexeme is attested in no other branch of Afroasiatic besides Egyptian, the application of a genetic model requires to reconstruct a common Proto-Afroasiatic root, which in turn is compared with the Indo-European forms, and ends in forcing its adherents to presume an enormous time-depth between the historically attested languages and their purported common protolanguage. Apart from this methodological dilemma, the etymology can be incontestably dismissed, because the Egyptian lexeme is a morphologically transparent derivation of the root *-nk'- 'suckle' (see above the commentary on 20-t). KESSLER (2001: 1–2) mentions an array of scholars rejecting the assumptions of GREENBERG AND RUHLEN (1992). For a discussion of this case, see LASS (1997: 163–166).

(20-u) Eg. ***gr-** ↔ IE ***ĝr-** 'grow old' (Kammerzell)

- Eg. *jꜣ-* /jr-/ < *gr- 'grow old':
  OEg.  *jꜣ(wj)-* > MEg. *jꜣw(j)-* 'grow old', *jꜣ* > MEg. *jꜣw* 'old man', OEg. *jꜣw* 'old man', MEg. *jꜣw.t* 'old age'; MEg.  , *(j)ꜣꜣ-* 'ruin, ruined state'

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[165] *Pyr.* 27d[W].

[166] Stela Louvre C17, see *DZA* (no. 21180060).

[167] Annals of Thutmosis' III (*Urk.* IV 743, 12. 13, 14).

- IE *ĝ̑'erH-, *ĝ̑'ərH- > *ĝ̑'r̥- (G&I 177), *ĝerə- (W 27), *ĝerh$_a$- (MA 409–410), *ĝer-, *ĝerə-, *ĝrē- (P 390–391) 'grow old':
  OI. *járant-* (< *ĝerh$_a$-ont) 'old, old man'; Osset. *zärond* (< *ĝerh$_a$-ont) 'old'; Gr. γέρων 'old man' (< *ĝerh$_a$-ont); Arm. *cer* 'old man' (< *ĝerh$_a$-o-s); OI. *jūrṇá-* 'frail, rotten' (MAYRHOFER 1992–: I 577–578)

At least two alternative etymologies have been offered in recent years:
– Following suggestions of other scholars (e.g., COHEN 1947: 194, OREL and STOLBOVA 1995: 23, no. 84), TAKÁCS (1999: 53) interprets Eg. *jꜣ-* as /jry-/ < *ʔry- and relates it to lexemes of some Berber, Cushitic, and Chadic languages.
– EHRET (1995: 186, no. 284) lists Proto-East Cushitic *gerʕ- 'become old' and Chadic *garə- 'grow old' and reconstructs AA *gêrʕ- (without mentioning Eg. *jꜣ-*).
While neither hypothesis seems impossible *per se*, they are incompatible with each other and both suffer from a somewhat scanty empirical basis.

On the other hand, the Egyptian–Indo-European connection can be further substantiated by the fact that on both sides we find resembling roots having the meaning 'praise', cf.:

- PreOEg. *gr- > OEg. *jꜣ(w)-* /ɟr-/ > MEg. *jꜣw-* > Copt. ϵⲟⲟⲩ^{S} 'praise', perhaps also MEg. *jꜣ.t* 'offering' (⇦ 'gift of honour'?).
- IE *g^{w}erə- (W 34) 'praise, honour':
  OI. *gūrtí-* 'praise', *jarā-* (fem.) 'eulogy'; Gr. γέρας 'gift of honour'; Lat. *gratus* 'welcome', *grates* (pl.) 'thanks'; Lith. *gìrti* 'praise' (MAYRHOFER 1992–: I 468–469 with further examples and references).

(20-w) Eg. **wt-** ↔ IE ***wt-** 'old' (Kammerzell)

- OEg. *wt* /wt-/ 'old, eldest, first-born'.
- IE *wet^{h}o- 'old' (G&I 685), *wet- 'year' (W 101, P 1175) (suffixed *wet-ru-, *wet-es-):
  Hitt. *wett-* 'year'; OI. *vatsá-* 'year'; Gr. ἔτος 'year'; OCS. *vetŭxŭ* 'old'; Lat. *vetus* 'old', *vitulus* 'calf, yearling'; OE. *wether*; OHG. *widar*, ModG. *Widder* 'ram' (< 'yearling').

RÖSSLER (1971: 284 and 310) has proposed to identify Eg. *wt-* 'old' with the lexeme *jtj-* 'father' and to connect both with Berber, especially Canarian *ati=* and Tuareg *ti=* 'father'. This is not only problematic for semantic and phonological reasons, but we should also remember that the respective words for 'father' are all but ideal for drawing etymological assumptions because of the widespread occurrence of similar forms, that may be best explained as nursery words (*pace* BOMHARD and KERNS 1994: 565–566, who postulate distant genetic relationship on the basis of forms like OHG. *atto*, Elamite *atta*, Tamil *attaṉ*, Turkish *ata* 'father').

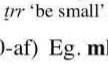
(20-y) Eg. ***tr-** ↔ IE ***tr-** 'son; young' (Kammerzell)

- PreOEg. *zꜣ* / tir-/ > /t͡sir-/ 'descendant, son', OEg. *zꜣ.t* / tr-/ > /t͡sr-/ 'daughter'.
- IE *ter-, *teru- (P 1070–1071) 'slight, dainty, weak' (suffixed form *tor-no- 'young creature'):
  OI. *taruṇa-* 'young, dainty; young man'; Av. *tauruna-* 'young'; Gr. τέρην 'slight, dainty'; Arm. *t`orn* 'grandchild'.

An inscription on a stone vessel from Tomb B 10 at Umm al-Qaᶜâb, which seems to run ,[168] is read *zꜣ- 'ꜣs.t* 'Son-of-Isis' and considered the earliest attestation of the lexeme *zꜣ* (cf. KAHL 1994: 530). The object mentioned is dating from the time of King Aha

[168] PETRIE (1901: pl. II,14 = KAHL 1994: no. 256).

(c. 2982–2950 BC) and thus older than the phonemic split of original /t/ into /t/ and /t͡s/ or /θ/ (cf. above Chapter 4.6). Given that the current interpretation of  is correct, here must have corresponded with spoken / tir-/, the primitive form of the lexeme *z3* 'son'.

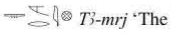
The IE root is related to *t^{h}er- (G&I), *terə- (W 91), *ter- (P 1071–1074) 'rub, wear away'. A similar relationship might be postulated between Eg.  *z3* / tir-/ > /t͡sir-/ 'son' and MEg.  *z3w* /t͡sr-/ < *tr- 'break, be broken, weak'.

Recently, Eg. *z3* has been compared with Akk. *šerru* 'small child, child' and Ugar. *ṯrr* 'be small' (SCHNEIDER 1997: 205, no. 89).

(20-af) Eg. **ml-** ↔ IE ***ml-** 'black' (Kammerzell)

- MEg. *mr-* /mj/ < OEg. *ml- 'be(come) black'.
- IE *mel- (G&I 685, W 53, P 720–721), suffixed form *melə-no-, 'of a darkish colour': OI. *malinā-* 'dirty, black'; Gr. μέλαϛ 'black'; Latv. *mę̆lns* 'black'.

A lexical root  *mr* 'be(come) black' is not registered explicitly in the dictionaries of Egyptian. Nevertheless its existence can be presupposed with certainty. There are several words which are built on the basis of a root *mr-* and have a meaning 'black':

 *T3-mrj* 'The Black Land'

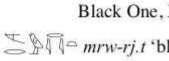
 *Km.t* 'The Black Land',

 *mr.t* 'black cow'

 *km.t* 'black bovines' (collective),

 *Mr-wr* 'The Great Black One, Mnevis' (theonym)

 *Km-wr* 'The Great Black One, Kemwer (theonym)',

 *mrw-rj.t* 'black stork'[169] (verbatim 'the one of black colour').

In some cases, a formation with *mr-* can be contrasted with a synonymous expression showing the alternative Egyptian word for 'black', *kmm-*, and once *mr-* is even combined with the word *rj.t* 'colour' in a bahuvrihi compound designating a bird of black colour and accompanying the following depiction:[170]

GUGLIELMI (1979: 255) thinks about relating *mrw-rj.t* 'black stork' with *Mrw.t(j)*, the name of two divine females attested in the Coffin Texts (e.g., *CT* V 293e^{S1C}), and compares this with *mr.t* 'singer' (cf. also BIANCHI 1987). Even though an unrestricted identification of the words *mrw-rj.t* and *Mrw.t(j)* is problematic,[171] it is worth noting that in Egyptian as well as in Indo-European the semantemes [BLACK], [SING], [CRUSH] and [ILL] could be all expressed by means of roots of the shape /ml-/ (cf. below table 24).

(20-ah) Eg. **rw-** ↔ IE ***rw-** 'be wide, be spacious' (Kammerzell)

- OEg. *3wj* /rw-/ 'be long, be wide, be spacious; stretch out', *3w.t* /rw-/ 'length'.

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[169] Attested in Tomb 15 at Beni Hasan (see NEWBERRY 1893: pl. IV, DAVIES 1949: pl. 2, no. 7) and prehaps in a late onomasticon (Osing 1998: 128–129 with note c and pls. 10 and 10A, fragment Q, line 3). For further possible instances in the Coffin Texts, cf. footnote 171.

[170] DAVIES (1949: pl. 2, no. 7).

[171] Forms like *mrw.t(j)* and *mrrw.t(j)* (e.g. *CT* V 69h^{L1Li}) – or *mrw-rw.t(-j)* (e.g. *CT* V 69h^{B2L}) – which are usually interpreted as orthographic variants of a single theonym *Mrw.t(j)* should perhaps better be analysed as representatives of several distinct words, since it is especially the forms with double ⟨*r*⟩ that are written with the 'BIRD' classifier in place of the 'DIVINE' classifier.

- IE *reuə- (W 71), *rewə- ,*rū- (P 874) 'open, space, wide', 'open land', with suffixes *rū-mo-, *reu(ə)-es- (W 71):
  Av. *ravah-* 'space, wideness'; Toch. *ru-* 'to open'; Lat. *rus*, gen. *ruris* 'countryside'; Goth. *rūms* 'spacious, wide' (< *rū-mo); Gmc. **rū-ma-* > OE. *rum* > ModE. *room*, ModG. *Raum* 'room' (< *rū-mo).
- Sem. *rwḥ- 'be wide, be spacious' (C. PEUST 1999b: 66):
  Hebr. *rwḥ-* (qal: 'feel easy, feel relieved', puᶜal part.: 'spacious'), *rewaḥ* 'space'; Arab. *rwḥ-* 'be wide, be spacious', OSAr. *rwḥ-* 'be wide' (KOEHLER and BAUMGARTNER 1985: 877).

(20-aj) Eg. ***pk'-** ↔ IE ***pg- / pk-** (Kammerzell)

- Eg. *pḏ-* /pk'-/ > /pc'-/ 'stretch, bend, fix':
  OEg. *pḏ* /pc'-/ 'stretch, bend' (e.g. in *pḏ-šs* 'stretch the line, fix the ground-plan (of a temple)'; OEg. *pḏpḏ* /pc'pc'-/ 'stick, spread (of a smell)'; OEg. *pḏ.t* /pc'-/ > MEg. *pḏ.t* /pt'-/, MBab. *-pí-ta* /pit'a/, ⲡⲓⲧⲉ S.A.A2 /ˈpiːt'ə/, B ϕⲓϯ /ˈpʰiːt'i/ 'bow'; OEg. *pḏ.t* /pc'-/ 'bow of the sky'.
- IE *pʰak̂ʰ-, *pʰak'-, *pʰakʰ- (G&I 123), *pak-, *pag- (W 61, P 787–788) 'fasten, fix', with nasal infix: *pa-n-g- (W61):
  OI. *páś-* 'sling, cord'; Av. *pas-* 'fix, join'; Gr. *πάγη* 'sling, trap', πακτόω 'fix, close, plug'; Lat. *pacīscō* 'fix an agreement', *pāx* (gen. *pācis*) 'peace', *compāgēs* 'joint'; OHG. *fah* 'enclosure wall', MLG. *vak* (m.) 'enclosure', ModG. *Fach* 'compartment'; Slov. *pâz* 'joint', *pâž* 'boarding, partition'; with nasal infix: *pangō* 'fix', Goth. *fāhan*, OIcel. *fā*, OHG. *fāhan*, OE. fāhan and fanȝan, ModG. *fangen* 'catch' (< *pa-n-g-).

(20-al) Eg. ***dr-** ↔ IE ***dʰr- / dʰwr-** 'door' (Kammerzell)

- OEg. /dr-/ 'leaf of a door, door', MEg. 'lid of a coffin'.
- IE *dʰur-, *dʰwer- (G&I 33, W 20–21, P 278–279) 'door, gate' (with suffixed forms *dʰur-n̥s-, *dʰur-o-, *dʰwor-ans-, *dʰwor-o-, *dʰwor-ois-):
  OI. *dvaraḥ-* (nom. pl.) 'doors'; Arm. *dur-k̂* (pl.) 'door'; Gr. θύρα 'door'; Alb. *derë* 'door'; Lat. *fores* (pl.) 'door with two leafs'; Cymr. *dor* 'door'; OHG. *turi* > ModG. *Tür* 'door'; lit. *durìs* (acc. pl.) 'door'; OCS. *dvьri* 'door'.

It does not seem impossible that Eg. *dr- ↔ IE *dʰr- / dʰwr- 'door' (20-al) and Eg. dl(l)- ≅ Sem. *dl- 'door' (20-ak) ultimately must be traced back to a common source.

5.4 For the sake of clarity, the results of the etymological identifications discussed in Chapters 5.2 and 5.3 are recapitulated in a simplified manner in table (21).

(21)

Meaning	Afroasiatic form	Egyptian forms Stratum A	Egyptian forms Stratum B	Indo-European form (traditional)
'face; facing'	Sem. *ᶜl-	q'l- > ħl-	ɢnt- > ɣnt-	*H₂ant-
'head'	E/NWSem. *qdqd-	k'rk'r- > c'rc'r-		
	Berb. *ɣf-		kp- > cp- > tp-	*kup-
'heart'	Sem. *lib-	jb-	q'rt- > ħrt-	*k̂er-
'phallus'	Sem. *bwḥ-	bq'- > bħ-	(mt-)	*mēit-,*məit-, *mit-
'milk (product)'	Arab. *ṯml-*	ṣml-	lk- < *glk-	*glak-

'suckle'	Sem. *ynq-	ṣ-nk'-	mnd-	*mend-, *mond-
'(grow) old'	ECush. *gr$^{\varsigma}$- (?)		r- < *gr- wt-	*gerə- *wet-
'be black'	ECush. *kmm-	km-	ml-	*mel-
'descendant, child'	Sem. *nīn- Sem. *ld- Arab. *ḥaydar* Eth. *ḥdt-* Ugar. *tr̲r-*	nn- jt'- q'dr- > ħdr- q'lt'- > χlt'-	tr- > t͡sr-	*ter-, *teru-
'be(come) long'	Sem. *wš$^{\varsigma}$- Sem. *rwḫ-	wṣG- > wṣɣ-	rw-	*rewə- ,*rū-
'bend, stretch'	Sem. *twl-	t'wl-	pk'- > pc'-	*pag-, *pak-
'door, gate'	Sem. *dl-t-	dll-t-	dr-	*d^{h}wer-, *d^{h}ur-

6. Significance of lexical similarities between Egyptian and Indo-European

6.1 The phonological shape of many words or lexemes compared with each other in the preceding chapter are somewhat short. Furthermore, there is no way to gain positive information about the vocalism of Earlier Egyptian, and – due to the circumstance that Egyptian might have integrated borrowings into native word classes – we should not even expect significant similarities with respect to the vowel structure.[172]

For this reason, the possibility that the affinities between Egyptian and Indo-European lexemes which have been described above are merely similarities by chance or the outcome of sound symbolism should not be dismissed precipitately. We are, however, not without means to reckon the significance of lexical similarities. To encounter not only systematic phonological correspondences but also common aberrances within pairs of formally and semantically similar lexemes of two (or more) different languages is an approved mode of distinguishing between chance similarities or onomatopoetic resemblances on one side and items which are matching because they go back to a common source – be it through vertical transmission or be it by way of horizontal transmission – on the other side.[173] The following conditions are of particular importance for justifying historical relations between two linguistic systems:

[172] A mistrust of comparing elements with less than three corresponding phonemes in each pair is widespread among linguists who consider themselves rigid advocates of the comparative method. KESSLER (2001) demonstrates in the course of a highly evolved analysis that applying such a suggestive "rule of thumb" does not provide better results than statistical significance tests on the basis of two or even one corresponding phoneme.

[173] Cf., e.g., LASS (1997: 104–171), FOX (1995: 57–69, 236–246, 276–279), LEHMANN (1993: 24–31), HOCK (1991: 556–564), ANTTILA (1989: 229–263, 310–322).

- There are not only roots or word stems which are similar in shape and meaning, but both systems also exhibit similar sets of stem extensions and/or derivative affixes used on the same bases.
- Particular lexemes exhibit formally similar suppletive stems in both systems.
- In either system there are similar groups of semantically distinct lexemes which share the same phonological shape or matching groups of phonologically distinct lexemes having the same meaning. So, e.g., roots of the consonantal shape *ml- serve to express the semantic concepts 'black', 'sing', and 'weak' in Indo-European as well as in Egyptian. Since there is no apparent universal conceptual resemblance between 'black', 'sing' and 'weak', the probability that two distinct languages denote these meanings by means of the same root independently from each other is extremely small.

If we comply with a few instances of situations as such, the probability of chance similarity is reduced considerably. Many Comparative Linguists will even consider the scenarios listed above sufficient criteria for confirming a genetic relationship between the respective languages – especially if the correspondences pervade large parts of the lexicon including basic vocabulary and function words or bound morphemes (HOCH 1991: 560).

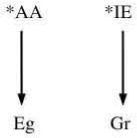
There are, however, several possibilities to explain the similarities between matching elements of two distinct languages, resemblance by chance or due to onomatopoeia and resemblance as a result of genetic relationship being only two particular cases from a set of much more scenarios. Some basic types of situations that may end in the emergence of similarities across the boundaries of language families are delineated under (22).

As a consequence, the material presented in tables (23) and (24) is *not* displayed with the purpose to establish a genetic relationship of Egyptian and languages of the Indo-European group, which can be traced back to a common proto-language. Yet, it should be sufficient to demonstrate that *some sort of historical relationship* did exist between the respective elements.

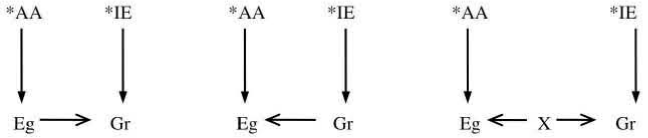
Table (23) includes a selection of lexemes exhibiting not only similar forms and meanings in Indo-European and Egyptian but having sometimes also matching extensions. In both linguistic spheres, there are cases of one particular root (or of several homophone roots) denoting several, rather distinct meanings, which cannot easily be interpreted as independent developments along cross-linguistically common paths of semantic change, e.g., *pk'- 'fix ≠ waters ≠ side'.

(22) Basic scenarios that may cause similarities across language families

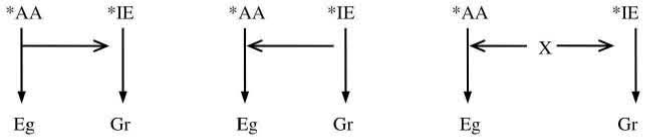
(22a) Chance, sound symbolism, language universals, etc.



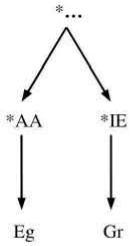
(22b) Borrowing between individual languages



(22c) Borrowing on the level of proto-languages



(22d) Genetic relationship



The root bases of table (24) also express several distinctive semantic concepts respectively (e.g., *ml- 'black ≠ weak ≠ sing'), but furthermore there are contrasts of different roots denoting more or less identical meanings (e.g., *dr- ≠ *wl- 'door(-post) ≠[?] strong').

(23)

Base	(Pre-Old) Egyptian		Indo-European		
			G&I	Traditional	Meaning
pt-	pt-pt-	fall trample down tumble down	p^ht^h-p^ht^h- p^ht^h-	pt-pt- ptH$_1$-, ptē-	fall fly charge, assail
	pt -	throw down spread	$p^ht^hH_2$-	ptH$_2$-	spread
pt'-	pt'-	knee run ground	p^ht'-	pd-	foot run ground place
	pt'-	container	p^ht'-	pd-	container
	pt'-l-	container band, bandage	p^ht'-l-	pd-l-	container band, bandage
	pt'-ṣ-	container			
pk'-	pk'-	fix bow	$p^h\hat{k}'$-/ $p^h\hat{k}^h$-	p$\hat{g}$-/p$\hat{k}$-	fix embracing
	pk'-pk'-	stick			
	pk'-	waters	$p^h\hat{k}'$-	p$\hat{g}$-	waters
	pk'-	side	p^hk'-	pg-	side
pn-	pn-	spool, reel	p^hn-	pn-	stretch spool, reel fabric, textile
	pn-n-	turn			
	pn-d-	turn over, turn	p^hn-t'-	pn-d-	stretch, hang
	ṣ-pn-d-	turn over	s-p^hn-t'-	s-pn-d-	stretch
	pn-d-nd-	turn			
	pn-d-ṣ-	turn over, twist	p^hn-t'-s-	pn-d-s-	weigh
	pn-n-	pour out			
	pn-pn-	swell			
			s-p^hn-	s-pn-	bucket
	pn-k'-	bucket, pour out	*s-p^hn-k'-*	*s-pn-g-*	bucket
			s-p^hn-t'-	s-pn-d-	pour out bucket
	pn-t'-	glance, shine	s-p^hn-t'-	s-pn-d-	glance, shine, jerk
			s-p^hn-k'-	s-p^hn-g-	glance, shine
pr-	pr-	before distinguished	p^hr-	pr-	before distinguished
	pr-	fly	p^hr-	pr-	fly

(23)

Base	(Pre-Old) Egyptian		Indo-European		
			G&I	Traditional	Meaning
pr-			(s)p^{h}r-	(s)pr-	squirt, splash
			p^{h}r-s-	pr-s-	squirt, splash
	pr-d-	sweat, perspiration	(s)p^{h}r-t'- (s)p^{h}r-t^{h}-	(s)pr-d- (s)pr-t-	moisture
			(s)p^{h}r-t'- (s)p^{h}r-t^{h}-	(s)pr-d- (s)pr-t-	clamp, squeeze
			sp^{h}r-k'- sp^{h}r-k^{h}-	spr-g- spr-k-	clamp, squeeze
	pr-d-	quail	p^{h}rt'-	prd-	partridge
			p^{h}r$\hat{k}^{h}$-	pr$\hat{k}$-	spotted
	pr-d-	panther	p^{h}r-t'-	pr-d-	panther
			p^{h}r-s- p^{h}r-	pr-s- pr-	panther beat, scratch
	pr-d-	tear tug, pull move vehemently			
			p^{h}r-s-	pr-s-	destroy
	pr-g-	tear scratch	p^{h}r-k'-	pr-g-	destroy beat greedy move vehemently
	pr-k'-	tear			
	pr-k-	be bald, be waste	p^{h}r$\hat{k}^{h}$-	pr$\hat{k}$-	rip open

(24)

Base	(Pre-Old) Egyptian		Indo-European		
			G&I	Traditional	Meaning
ml- ≠mr-	ml-	black	ml- mr-	ml- mr-	black
	ml-	mortar	ml- mr-	ml- mr-	crush, grind
	mr-t'-	mortar	mr-t'-	mr-d-	crush, mortar
	ml-	ill, weak	ml- mr-	ml- mr-	worn away, weak
	ml-	sing	ml-	ml-	recite, sing, say
dr-	dr-	door	dr-	d^{h}r-	door
≠wr-	wr-	lid of a coffin	wr-	wr-	fastener, lock
≠wl-	wl-	door-post	wl-	wl-	door-post, door-leaf
	dr-	strong, great	t'r-	dr-	firm, strong
	wl-	strong, mighty, rich	wl-	wl-	strong, mighty, able

6.2 Another thinkable objection to the identifications presented in Chapter 5.3 could be that some of the lexemes (e.g., Eg. *gl(k)- ↔ IE *gl(k)- 'milk') might be nursery words. Even though – particularly in view of ideophonic *gluck-gluck* in ModG. or some of the so-called "global etymologies"[174] – one might gain the impression that this could be the case, we should bear in mind that the degree of similarity between Eg. *jrṯ.t* /ɟuˈlaːcat/ and IE *g(a)lag- or *g(a)lakt- 'milk' is quite different from resemblances of the type presented by adherents of the "Amerind-Eurasiatic" hypothesis, cf.:

(25) "MALIQ'A 'to suck(le), nurse; breast'
AFRO-ASIATIC: Proto-Afro-Asiatic: **mlg* 'breast, udder, suck,' Arabic *mlǧ* 'to suck the breast,' Old Egyptian *mnḏ* (< **mlg*) 'woman's breast, udder'; Cushitic: Somali *maal-* 'to milk,' Rendille *mąąl-*. […] INDO-EUROPEAN: Proto-Indo-European: **melǧ-* 'to milk'; Greek ἀμλέλγω; Italic: Latin *mulg-ēre*; Celtic: Irish *bligim* 'to milk,' *mlicht* 'milk'; […]; Baltic: Lithuanian *milžti* 'to milk' […] URALIC: Proto-Uralic (Illich-Svitych) **mälye* 'breast,' Proto-Finno-Ugric (Rédei) **mälke*; Saami *mielgâ* 'breast, chest,' […] Hungarian *mell*, Yukaghir *meɬu-t*. […] DRAVIDIAN: Kurux *melkhā* 'throat, neck' and Malto *melqe* 'throat,' Tamil *melku* 'to chew, masticate,' […] Kannada […] *melaku* 'bringing up again for rumination,' […] ESKIMO-ALEUT: Aleut *umlix* 'chest,' Kuskokwim *milugâ* 'sucks it out,' *mulik* 'nipple,' *milûgarâ* 'licks (or sucks) it; kisses it (a child).' […] CAUCASIAN: Proto-Caucasian **mVq'VlV* 'throat, larynx,' Proto-Avar-Andi **maq̄'ala* 'throat,' Proto-Dido **muq'*, Proto-Dargi **muq'luq'* 'chute, gutter.' […] AMERIND: Almosan: Lower Fraser *məlqʷ* 'throat,' Nootka *mukʷ* 'swallow,' Kwakwala *mɬχʷ-ʔid* 'chew food for the baby,' *mɬqʷa* 'moisten the fingers with the tongue,' […]"
(BENGTSON and RUHLEN 1994: 308–309; cf. also RUHLEN 1994: 242–251).

Whereas the entries in (25) show only remote similarity in form and meaning,[175] Eg. *jrṯ.t* is much more closely related to Hitt. *galattar*, *galaktar*, Gr. γλάγος (Homeric), κλάγος, κλάκκον (Cretan), γάλα and Lat. *lac*. Denoting an organic fluid ('milk' and 'sap'), they are identical in meaning. Most of the consonants are related by what can be shown to be regular sound correspondences:

Eg. /ɟ/ ↔ Hitt. /g/, Gr. /g/, (Lat. Ø is irregular),
Eg. /l/ ↔ Hitt. /l/, Gr. /l/, Lat. /l/,
Eg. /c/ ↔ Hitt. /k/, Gr. /k/~/g/, Lat. /k/,
Eg. /t/ ↔ Hitt. /t/, Gr. /t/, Lat. /t/.

The stressed vowel is /a/ without exception, it generally follows the consonant /l/. In addition, matching irregularities can be observed in Egyptian and in Indo-European. In both spheres variants without a second velar consonant

[174] See, e.g., BENGTSON and RUHLEN (1994), and cf. LASS (1997: 159–169) for a rejection of theories about "hypertaxa" relationship.

[175] Why and how the authors exactly came to reconstruct *maliq'a as Amerind proto-form (RUHLEN 1994: 242) and as the basis of the alledged "global etymology" as well (BENGTSON and RUHLEN 1994: 308–309) is not apparent from their material.

occur. The reconstructed form *glk- does not conform to the rules of compatibility in Egyptian as well as in Indo-European. This circumstance might have been the ultimate reason for some of the variations and changes and hints at the possibility that the lexeme did not originate in Egyptian nor in Indo-European, but had been borrowed from a third language, which, according to the areal distribution of *glk-, could be an unknown Mediterranean or Near Eastern idiom.

In any case, the degree of similarity is such that – even if *glk- were an onomatopoetic formation – a common historical source of the Egyptian and Indo-European words may be taken for granted.

7. *Conclusions*

The lexicon of Earlier Egyptian consists of (at least) two different strata. This diversity is perceptible even with respect to rather basic vocabulary. The two principal components of the Egyptian lexical stock distinguished by now historically belong to two different linguistic phyla. One shows similarities with Afroasiatic, which are known for long and interpreted as resulting from a common prehistory of Egyptian and other Afroasiatic languages. Another segment of the lexicon of Old Egyptian and Pre-Old Egyptian exhibits striking resemblances with Indo-European. In addition, there seems to be a third group of lexemes, which show an even wider distribution and occur not only in Indo-European and Egyptian but also in some other Afroasiatic languages.[176] The affinities between Egyptian and Indo-European languages cannot be explained genetically for various reasons:

– Many of the lexemes discussed or mentioned in this paper must not be reconstructed as Afroasiatic, because they either do not appear in any other group of the Afroasiatic phylum or are attested in a way that we cannot exclude the eventuality that they were borrowed from Egyptian.
– The time depth characterising a so-called "remote genetic relationship" between Afroasiatic and Indo-European had to be tremendous. Traditionally, the Afroasiatic proto-language is dated at about 10,000 BC.[177] Those

[176] In cases like Eg. *ṯp* /kp-/ (> /cp-/ > /tp-/) ↔ Berb. **γf-* ↔ IE **kp-* 'head' or Eg. *z3* /tr-/ ↔ Akk. *šerru*, Ugar. *ṯrr-* ↔ IE **tr-* 'son, descendant', an areal interpretation of the situation is all but improbable, particularly if we take into consideration that IE lexemes on the basis of **kp-* are more frequent in western Indo-European languages (Greek, Italic, Germanic) and that the possible Sem. correlate of **tr-* is attested only in the north-eastern area of this language family. The large-scale distribution of other examples are less easily explainable. Cf. also REDFORD (1994) on possible early contacts of Egyptian and Semitic.

[177] See, e.g., TAKÁCS (1999: 36) with references to earlier works. The subclassification of Afroasiatic suggested by EHRET (1995: 483–490) may force to presuppose an even longer span from the split-up of the proto-language. According to EHRET, Egyptian, Berber and Semitic originated from a common source ("Boreafrasian"), that had been the offspring of

scholars who believe in the existence of a common proto-language of Afroasiatic and Indo-European assume that this had been spoken at some time between 18,000 and 13,000 BC.[178] A period far off in prehistory as such is not compatible with the fact that there are some correspondences of words which obviously hint at a stage of cultural development achieved not before the neolithic period.

– The degree of similarity between Egyptian and Indo-European is such, that a "remote genetic relationship," which had to span many millennia, seems unlikely for chronological reason. Whereas close links with little differences in the lexicon as well as a resemblance in size and architecture of the consonantal systems are rather suggestive in favour of fairly late contacts, they are nevertheless not persuasive. There are, however, also significant morphological parallels hinting at relations by contact in the *centuries* (but not *millennia*) close to the beginning of written documentation: The Egyptian stative conjugation and the Indo-European perfect/mediopassive do not only employ an almost identical set of person/number markers but also passed particular diachronic processes more or less simultaneously.[179]

As a consequence, there are several imaginable sets of historical and sociolinguistic circumstances which could have led to the linguistic situation we find in Late Predynastic and Early Dynastic Egypt:

Scenario I: The population (or parts of the population) living in the northern region of the Lower Nile Valley in the late fourth millennium BC would have spoken a Non-Afroasiatic language L_x, which for some reason shared structural and lexical features with Indo-European – without necessarily being genetically related with this group. The speakers of L_x would have been in contact with those of an Afroasiatic language L_y and thus acquired a considerable number of lexical elements and certain structural features. The effect of these processes would have been the emergence of Pre-Old Egyptian, the language of the earliest hieroglyphic records. Persisting contacts with Afroasiatic L_y would have resulted in speakers of that idiom giving up their mother tongue and shifting to Egyptian (see fig. 26). It was only in the course of this development that the language which was to become Old Egyptian would have obtained a set of typical Afroasiatic ob-

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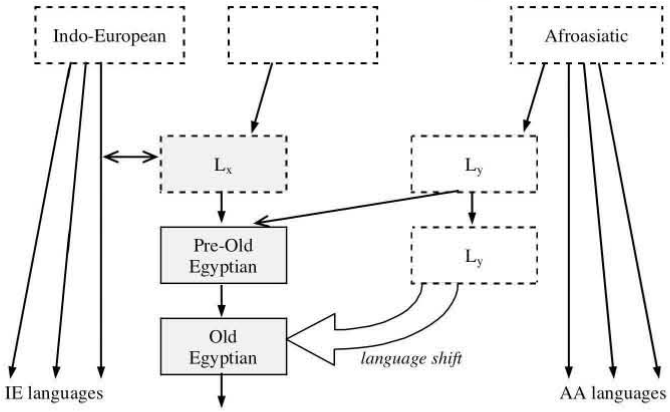
a "North Erythraean" branch (together with Chadic). The putative common proto-language of "North Erythraean" and Cushitic is called "Erythraean", and it is only after tracing back "Erythraean" and its alleged sister branch Omotic to a common source that we arrive at the level of Proto-Afroasiatic.

[178] Cf., e.g., HODGE (1993: 99), similar HODGE (1985: 18–19, 1984: 414).

[179] See SCHENKEL (1971), KAMMERZELL (1991) and (1999a: 257–258).

struents which were still inexistant in Pre-Old Egyptian (and therefore did not give rise to the emergence of corresponding elementary graphemes).

(26) Possible affiliation of Egyptian and Pre-Old Egyptian (scenario I)



According to this model, neither Pre-Old Egyptian nor Old Egyptian could be considered an Afroasiatic language. Both were genetically related to L_x, and Egyptian would have acquired its Afroasiatic traits only secondarily by contact with another language (or other languages). In view of the fact that Egyptian shares more basic strucural features (e.g. pronominal and nominal morphology, numerals) with Afroasiatic than with Indo-European, this scenario, which might even provoke the idea that Egyptian could be judged genetically related to Indo-European, is not very plausible.

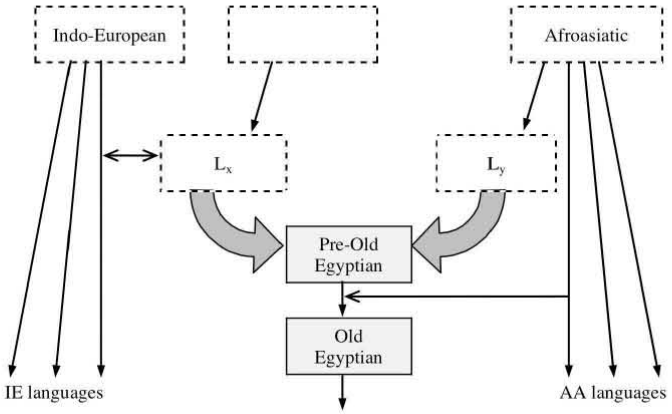
Scenario II: The point of departure is the same as in the preceding model. Two speech communities, that of L_x (someway related with Indo-European) and that of Afroasiatic L_y, would have come into contact with each other in the region of Middle and Lower Egypt. In this situation, a pidgin might have been developed, which was used for communication across language boundaries and also underlay the earliest hieroglyphic inscriptions. In the course of time, it would have become stabilized and gradually developed[180] into a creole or a creoloid[181], being no longer only a second language but having

[180] On the hypothesis that creolization is not necessarily an instantaneous process, see ARENDS and BRUYN (1994).

[181] A *creoloid* is a language that originated in the course of language contact and exhibits some characteristics of creoles but lacks other typical features (cf. MUYSKEN and SMITH

become nativized, i.e. the first language of a particular linguistic community. Due to persisting impact of Afroasiatic, the contact language would have undergone a process of decreolization and acquired more Afroasiatic features (especially those phonetic contrasts which did not leave traces in the inventory of elementary graphemes). Pre-Old Egyptian would have been the creoloid or creole, that came into being ungenetically, and Old Egyptian its decreolized successor. As a consequence, neither of them could be considered genetically related with Afroasiatic or with Indo-European.

(27) Possible affiliation of Egyptian and Pre-Old Egyptian (scenario II)



It is difficult, if not impossible, to decide whether the language *spoken* in Late Predynastic Egypt actually was a pidgin or creole, because the amount of information – apart from phonological and lexical features – is extremely limited. Some of the features often associated with creoles[182] can be found in Old Egyptian, e.g. transparent (morphologically complex) question word systems, no inversion in polar questions, morphologically complex reflexives, movement rules causing focussed constituents to occur in sentence-initial position, similar expressions of existence and possession, adjectives as a subcategory of stative verbs. On the other hand, there are several characteristics rather untypical of contact languages, e.g. existence of gender, passive forms, tense/aspect/modality marked internally or/ and by means of suffixes. As long as we can neither

1995: 4–5, SEBBA 1997: 292). A better-known language often mentioned as an example of a creoloid is Afrikaans.

[182] Cf. SEBBA (1997: 173–176), MUYSKEN and VEENSTRA (1995: 124).

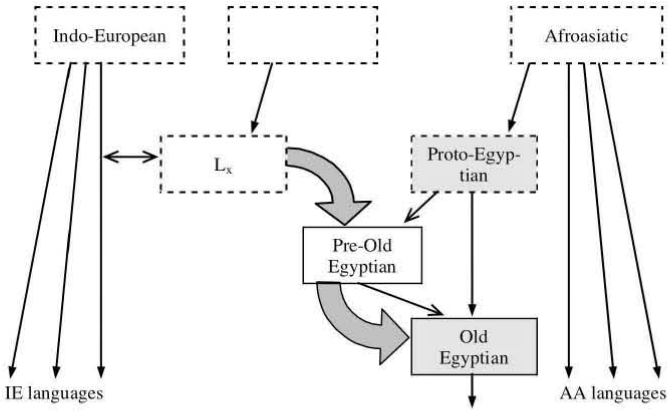
determine the probability that Old Egyptian developed from a contact language nor corroborate the likelihood of the emergence of a creole by extra-linguistic explanations, the scheme depicted in (27) is but another possible prospect.

Scenario III: An Afroasiatic language which exhibited more or less the same structural features as Old Egyptian (but, of course, lacked those part of its lexicon that corresponds with Indo-European) might have already been used by a speech community living in the Lower Nile Valley in the late fourth millennium BC. We may call this variety Proto-Egyptian. The sound inventory of Proto-Egyptian would be typical of an Afroasiatic language and similar to that of Old Egyptian (cf. figure 19). The earliest hieroglyphic documents originated in a situation of contact between speakers of Proto-Egyptian and speakers of another language L_x, that was somehow – not inevitably genetically and not even necessarily directly – related with Indo-European. The linguistic system underlying the most ancient inscriptions would not have been Proto-Egyptian but a contact language. Due to the fact that Pre-Old Egyptian has structural features untypical of Afroasiatic and a lexicon consisting of Afroasiatic as well as Non-Afroasiatic elements, it may perhaps be considered the particular variety of original speakers of L_x who shifted to Proto-Egyptian and, in doing this abruptly, displayed imperfect second language acquisition. This resulted in introducing new words and a simplified phonological system (in accordance with L_x). We can guess that the speakers of L_x were outnumbered by the Proto-Egyptian speech community but occupied important positions in the political, socio-economical and cultural life. They played a considerable role in the emergence of the hieroglyphic writing system. This is testified by the fact that there are several traits in the system of written Egyptian that do not only differ fundamentally from basic typological characteristics of spoken Egyptian but also resemble typical features of contact languages (e.g., scarcity of inflection and higher degree of analyticity, dual and plural formation by reduplication[183] or trebling of the singular stem, use of classifiers). As a consequence, one may even infer that the hieroglyphic writing system did not only develop in a situation of intense language contact but had been intentionally created as a medium serving for communication across the limits of individual languages. Later on, the speakers of Pre-Old Egyptian finally became absorbed into the majority language – not without having some

[183] Reduplication is common in creole languages and extended pidgins, but rare in pidgins (see BAKKER 1995: 39).

impact on its further development[184] – and writing was no longer confined to the contact language.

(28) Possible affiliation of Egyptian and Pre-Old Egyptian (scenario III)



Currently, the scenario outlined in diagram (28) seems to be the most promising: The traditional classification of Egyptian as Afroasiatic, which is substantiated by a large number of regular corresondences in the lexicon as well as in different parts of the grammar, may be maintained, even though Pre-Old Egyptian did not come into being genetically by means of "normal" vertical transmission but emerged as the result of massive language shift and, accordingly, also Old Egyptian acquired several of its structural characteristics from an external source by means of language contact.

The assumption that more than one linguistic communitiy had contributed to the creation of the Egyptian language is not new.[185] It is remarkable, however, that the formation of Egyptian (as we know it from our textbooks) apparently had taken place not too long before the beginning of the historical period, that a Non-Afroasiatic language having some links with Indo-European was involved in that process, and that a particular linguistic system,

[184] Influence of original speakers of L_x and their offspring manifests not only in the lexicon of Old Egyptian but also might have caused the split of Afroasiatic velar obstruents into velar and palatal phonemes.

[185] Cf., e.g., ERMAN (1900: 350–353), CALICE (1931: 25–29) and see TAKÁCS (1999: 1–8 and 35–48) for a comprehensive bibliographical sketch.

which should be rather classified as a distinct language than merely as a yet undescribed chronolect of Egyptian, manifests in the earliest hieroglyphic records.

At present, there is no evidence for discerning two different linguistic communities that had access to the hieroglyphic script and left traces in form of written communications during the Old Egyptian period. Lexical items of both strata co-occur in texts of the Old Kingdom and show no specific distribution according to their origin – at least not an obvious one. Thus, the formative period of Egyptian apparently had been brought to a close many generations before the Old Kingdom.

Acknowledgments

This paper had not been accomplished in its present shape, were I not able to fall back upon the amiable support of various persons. I appreciate all sorts of discussions, comments, suggestions, corrections, and technical assistance received not only from those who took part in the conference at Schloß Blankensee, but also from Dörte Borchers, Katja Demuß, Rainer Hannig, Matthias Müller, Henrike Simon, Isabel Maria Toro Rueda, Franziska Vahle, Daniel Werning, Gordon Whittaker (all Göttingen), Tamaz Gamkrelidze (Tbilisi), Orin Gensler (Leipzig), Orly Goldwasser (Jerusalem), Maarten Kossmann (Leiden), and Carsten Peust (Konstanz).

Appendix I: Elementary hieroglyphic graphemes and corresponding consonants in different chronolects

Elementary grapheme	Conventional transcription	Corresponding sounds			
		PreOEg.	OEg.	MEg.	LEg.
	*ꜣ*	r	r	ʀ , ʔ	ʔ , ∅
	*j*	j , ɟ < *gʲ , j̰ < *Gʲ	j , ɟ , j̰	j	j , ʔ , ∅
	*ꜥ*	d	d , d͡z / z	d , ʕ	ʕ , d
	*w*	w	w	w	w , ∅
	*b*	b	b	b	b
	*p*	p	p	p	p
	*f*	ɸ < *ʃ , pʾ	ɸ , f , pʾ	f	f
	*m*	m	m	m	m , n
	n	n	n , ŋ , ŋʷ	n	n , ∅
	*r*	l	l , ʎ	l , ʎ , j	r, l , j , ʔ , ∅
	*h*	h < *ʃ	h	h	h
	*ḥ*	qʾ	ħ	ħ	ħ
	*ḫ*	ɢ > ɣ , Gʲ > ɣʲ	ɣ , j̰	ɣ , j̰	ɣ , j̰
	*ḫ*	q	x	x	x
	*z*	t > t͡s (or θ) > s	t͡s /s, t͡sʾ /sʾ, d͡z /z	s	s
	*s*	ʂ	ʂ , s , sʾ , z	s	s
	š	q > x , qʲ > xʲ	x , ç , çʾ	ç	ç
	*q*	kʾ	kʾ , kʾʷ	kʾ	kʾ , cʾ
	*k*	k	k	k	k , c
	*g*	g , gʲ	g , gʲ , gʷ	g	gʲ , g
	*g*	gʷ	gʷ	g	g
	*t*	t	t	t , ∅	t , ∅
	*ṯ*	k , kʲ	c	c , t	c , t
	*d*	tʾ	tʾ , t͡sʾ / sʾ	tʾ , sʾ	tʾ , d
	*ḏ*	kʾ , kʲʾ	cʾ , çʾ	cʾ , çʾ	cʾ , tʾ

(Shading indicates that the respective corresponding elementary grapheme is not attested in the function of a "uniconsonantal" in Pre-Old Egyptian)

Appendix II: Most common sound correspondences between Pre-Old Egyptian, Egyptian, and Indo-European

Elementary grapheme	Conventional transcription	Corresponding sounds			
		PreOEg.	OEg.	IE (trad.)	IE (G&I)
	*ỉ*	r	r	*r	*r
	j	j , ɟ < *g^j, ʝ < *G^j	j , ɟ , ʝ	*j , *g^h	*j , *g
	ꜥ	d	d , $\widehat{dz}$ / z	*d^h , *d	*d , *t’
	*w*	w	w	*w	*w
	*b*	b	b	*b^h	*b
	p	p	p	*p	*p
	*f*	ɸ < *ʃ , p’	ɸ , f , p’		
	*m*	m	m	*m	*m
	*n*	n	n , ŋ , ŋ^w	*n	*n
	*r*	l	l , ʎ	*l	*l
	*h*	h < *ʃ	h	*s	*s
	*ḥ*	q’	ħ	*H_3 = *$ə_3$	*H_3 = *$ə_3$
	*ḫ*	G > ɣ , G^j > $ɣ^j$	ɣ , ɣ̣	*H_2 = *$ə_2$	*H_2 = *$ə_2$
	*ḫ*	q	x	*H_1 = *$ə_1$	*H_1 = *$ə_1$
	*z*	t > $\widehat{ts}$ (or θ) > s	$\widehat{ts}$ /s, $\widehat{ts}$’ /s’, $\widehat{dz}$ /z	*t	*t
	*s*	ʂ	ʂ , s , s’ , z	*s	*s
	*š*	q > x , q^j > x^j	x , ç , ç’	*H_1 = *$ə_1$	*H_1 = *$ə_1$
	*q*	k’	k’ , k’^{w}	*g	*k’
	*k*	k	k	*k	*k
	*g*	g , g^j	g , g^j , g^w		
	*g*	g^w	g^w		
	*t*	t	t	*t	*t
	*ṯ*	k , k^j	c	*k	*k
	*d*	t’	t’ , $\widehat{ts}$’ / s’	*d	*t’
	*ḏ*	k’ , k^j	c’ , ç’	*g	*k’

Signs and abbreviations

*	reconstructed form
∘	non-existent form (wrongly transcribed or ungrammatical)
/ /	enclose phonemic elements
⟨ ⟩	enclose graphemic elements
‘ ’	enclose translations
<	developed from
>	developed into
→	borrowed into
←	borrowed from
↔	loan relationship of indeterminate direction
≡	genetic relationship
⇒	phonologically interpreted as
⇨	path of semantic change
!	alveolar click
ǁ	alveolar lateral click
1	first person
2	second person
3	third person
4	so-called fourth person (in Algonquian languages)
^{A}	Akhmimic dialect of Coptic
AA	Afro-Asiatic
acc.	accusative
Akk.	Akkadian (Sem.)
Alb.	Albanian (IE)
Arab.	Arabic (Sem.)
Aram.	(Old/Imperial) Aramaic (Sem.)
Arm.	(Classical) Armenian (IE)
Av.	Avestan (Indo-Iranian, IE)
^{B}	Bohairic dialect of Coptic
Berb.	Berber (AA)
cent.	century
Chad.	Chadic (AA)
Copt.	Coptic
CT	de Buck (1935–61)
Cush.	Cushitic (AA)
Cymr.	Cymric (Welsh) (Celtic, IE)
Dem.	Demotic
du.	dual
DZA	*Das digitalisierte Zettelarchiv*
Ebl.	Eblaitic (Sem.)
ecclLat.	ecclesiastical Latin (Italic, IE)
ECush.	East Cushitic (AA)
Eg.	Egyptian
ESem.	East Semitic (AA)
Eth.	(Classical) Ethiopic (Sem.)
^{F}	Fayumic dialect of Coptic
Fr.	French (Romance, IE)
G&I	Gamkrelidze and Ivanov (1995)
gen.	genitive
Gmc.	Germanic (IE)
Goth.	Gothic (Gmc.)
Gr.	(Ancient) Greek (IE)
Hebr.	(Ancient) Hebrew (Sem.)
HECush.	Highland East Cushitic (AA)
Hitt.	Hittite (Anatolian, IE)
IE	Indo-European
Ir.	Irish (Celtic, IE)
^{L}	Lycopolitan dialect of Coptic
Lat.	Latin (Italic, IE)
Latv.	Latvian (Baltic, IE)
LD	Lepsius (1849–59)
LEg.	Late Egyptian
Lith.	Lithuanian (Baltic, IE)
^{M}	Middle Egyptian dialect of Coptic
m.	masculine
Mal.	Malay (Austronesian)
MBab.	Middle Babylonian (Sem.)
medGr.	medieval Greek (IE)
MEg.	Middle Egyptian
MHG.	Middle High German (Gmc.)
MIr.	Middle Irish (Celtic, IE)
MLG.	Middle Low German (Gmc.)
ModE.	Modern English (Gmc.)

ModG.	Modern (High) German (Gmc.)
ModIr.	Modern Irish (Celtic, IE)
NapEg.	Napatanian Egyptian
NeoMEg.	Neo-Middle Egyptian
nom.	nominative
NOm.	North Omotic (AA)
NWSem.	North-West Semitic (AA)
OBV.	obviative suffix
OChin.	Old Chinese (Sinitic)
OCS.	Old Church Slavic (Slavic, IE)
OE.	Old English (Gmc.)
OEg.	Old Egyptian
OHG.	Old High German (Gmc.)
OFr.	Old French (Romance, IE)
OI.	Old Indic (Sanskrit) (Indo-Iranian, IE)
OIr.	Old Irish (Celtic, IE)
OIcel.	Old Icelandic (Gmc.)
Om.	Omotic (AA)
ON.	Old Norse (Gmc.)
OSAr.	Old South Arabic (Sem.)
Osset.	Ossetic (Indo-Iranian, IE)
Osm.	Osmanic Turkish
p.c.	personal communication
Phoen.	Phoenician (Sem.)
pl.	plural
PopLat.	Popular Latin (Italic, IE)
PreOEg.	Pre-Old Egyptian
prep.	preposition
Prov.	Provencale (Romance, IE)
Pyr.	Sethe (1908–22)
Rum.	Rumanian (Romance, IE)
S	Sahidic dialect of Coptic
Sa	Sahidic dialect exhibiting some Akhmimic features
SArab.	South Arabic (Sem.)
Scand.	Scandinavian (Gmc.)
Sem.	Semitic (AA)
Slov.	Slovene (Slavic, IE)
Sum.	Sumerian (isolate)
Swed.	Swedish (Gmc.)
Syr.	Syriac (Sem.)
Taqb.	Taqbaylit (Qabyle) (Berb.)
Tib.	(Classic) Tibetan (Tibeto-Burmese)
Toch.	Tocharian (IE)
Ugar.	Ugaritic (Sem.)
Urk. II	Sethe (1904)
Urk. IV	Sethe (1905–09)
W	Watkins (2000)
W^1	Watkins (1986)
Wb.	Erman and Grapow (1926–50)
WGmc.	West Germanic (IE)

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