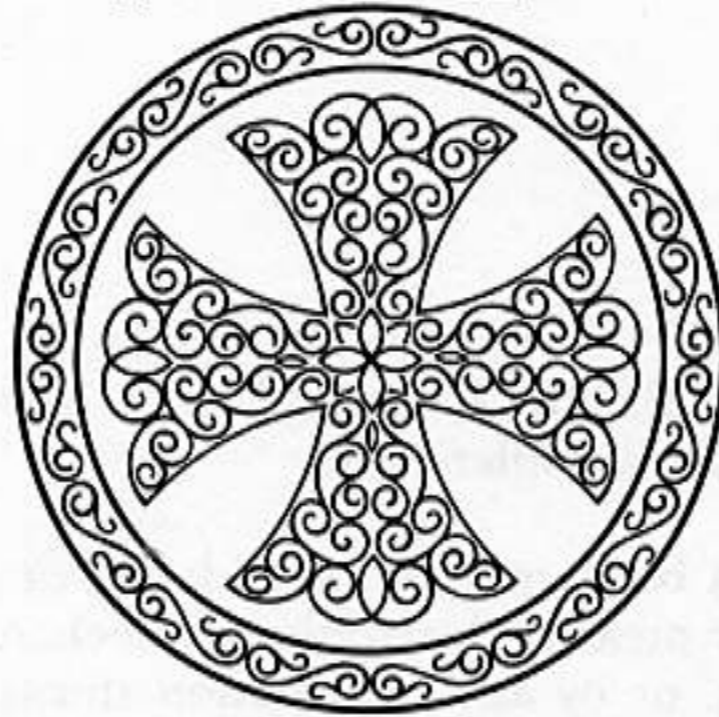


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PHONOLOGY. In Coptic, as in any other language, it is vital to distinguish carefully between phonology and phonetics. According to Dubois (1973, p. 373), "Phonetics studies the sounds of language in their concrete realization, independently of their linguistic function." Phonetics is thus a science concerned with a phenomenon purely material and physical, and therefore measurable by means of instruments of physics, sensitive and especially adapted for this delicate task. Consequently, phonetics does not treat the semantic use of these sounds or of their combinations; it is concerned neither with their signification nor with the message they take part in expressing.

On the other hand, "phonology is the science that studies the sounds of language from the point of view of their function in the system of linguistic communication. It studies the phonic elements that distinguish, within one and the same language, two messages of different meaning" (ibid., p. 375). Thus, in English, for instance, it is only the difference between the phonemes /d/ and /t/ that distinguishes the two words, entirely different in meaning, "doodle" (scrawl) and "tootle" (toot repeatedly). Of course, both of these words could be pronounced in a great many different ways and with nuances that may be studied, measured, or defined, according to the speaker's linguistic habits or to the conditions in which he pronounces them at any given time (local, dialectal, personal habits, or possibly the pronunciation arising from a physical malformation, an occasional cold, a broken tooth, a mouth full of food, a state of fatigue making for negligent elocution, and so on). Yet, on the phonological level, these nuances are in no way taken into account: each of these two words is subject to but a single interpretation, /'du:dl/ and /'tu:tl/, respectively. Practically speaking, whatever the speaker's accent (provincial, negligent, or obstructed, within certain limits), the listener will usually decode the message in the same way.

In ALPHABETS, COPTIC, the synoptic table gives (on the extreme left) the phonological value of the various Coptic graphemes, a value well known or at least sufficiently well known or probable. This value occasionally varies from one dialect or subdialect to another; one even observes certain idioms wanting one or several phonemes present in others. However, the present article will not treat these dialectal

differences but present a complete inventory of Coptic phonemes (Table 1), "Coptic" considered comprehensively, as a total phenomenon comprising all particular idiomatic, dialectal, and subdialectal diasystems (cf. Stern, 1880, p. 7; Mallon, 1907, p. 7; Chaîne, 1933, pp. 2-3; Worrell, 1934, pp. 83-98; Vergote, 1945, p. 10; Steindorff, 1951, p. 11; Till, 1955, p. 40, and 1961, p. 3, and especially Vergote, 1973, pp. 7, 13, 18, and Kasser, 1981).

The synoptic table gives only the graphemes of four Coptic idioms—vehicular languages *S* and *B*, dialect *A*, and protodialect *P*—considered here as the most typical phonologically and alphabetically. (More details can be found in the synoptic table in ALPHABETS, COPTIC; gem. = graphic vocalic gemination; the phoneme /v/ is found only in the subdialects *B7*, *J*, *G*, *F9*, and *H* [grapheme ⲃ]; [wa] = phoneme wanting in this dialect).

From the following list of Coptic phonemes must be removed, of course, the phoneme combinations rendered in the script by a single grapheme—/ks/ (14), /ps/ (23), /ti/ (30), /cə/ (33), and, in all Coptic idioms except *B* and its subdialects, /th/ (8), /ph/ (21), and /kh/ (22). In *B* etc. they are, respectively, aspirated allophones of /t/ (19), /p/ (16), /k/ (k), as /čh/ is the aspirated allophone of /č/ (28) (see BOHAIRIC).

Coptic has eight (or perhaps nine) *vowels* proper, namely /a/ (1), /e/ (5a), /ə/ (5b), /ē/ (7), /i/ (9a), /o/ (15), /u/ (20b), /ō/ (24), and perhaps /y/ (20a). /ə/ is a medial vowel, /a/ is the most open (or most voiced) vowel, and /i/ and /u/ (and, as the case may be, /y/; see below), the most close (or least voiced); the gradation from most open to most close being /a/, /e/, /ē/, /i/ for the palatal and anterior series, and /a/, /o/, /ō/, /u/ for the velar or posterior one.

Coptic has five (perhaps even six) *sonants* (of truly vocalic value, although expressed in the script by an apparently consonantal grapheme), namely /ḥ/ (2b), /l/ (11b), /ṁ/ (12b), /ṅ/ (13b), /r/ (17b), and possibly /v/.

All the above Coptic phonemes are thus, on the phonological level, vowels. On the other hand, all other phonemes of Coptic presented below are, phonologically considered, consonants.

Coptic has probably only two *glides*, or semivowels (or voiced fricatives; see below), which are voiced consonants (their consonantal value is certain, although they are rendered by apparently vocalic graphemes): /j/ (9b) and /w/ (20c). It is possible to conceive that Coptic might have a third glide, /ɥ/, in some very rare Copto-Greek words, such as *S*, *B* ζΥΔΚΙΝΘΙΝΟΝ (*ἰακίνθινος*), hyacinth-coloured, written

TABLE 1. *Synoptic Table of Coptic Phonemes*

		P	S	B	A
1	/a/	Ⲁ	Ⲁ	Ⲁ	Ⲁ
2a	/b/	Ⲃ	Ⲃ	Ⲃ	Ⲃ
2b	/b̥/	Ⲃ	Ⲃ	[wa]	Ⲃ
3	/g/	Ⲅ	Ⲅ	Ⲅ	Ⲅ
4	/d/	Ⲇ	Ⲇ	Ⲇ	Ⲇ
5a	/e/	Ⲉ	Ⲉ	Ⲉ	Ⲉ
5b	/ə/	Ⲉ	Ⲉ	Ⲉ	Ⲉ
6	/z/	Ⲩ	Ⲩ	Ⲩ	Ⲩ
7	/ē/	Ⲭ	Ⲭ	Ⲭ	Ⲭ
8	/th/	Ⲯ	Ⲯ	Ⲯ	Ⲯ
9a	/i/	(Ⲋ)Ⲑ	(Ⲋ)Ⲑ	Ⲋ	(Ⲋ)Ⲑ
9b	/j/	(Ⲋ)Ⲑ	(Ⲋ)Ⲑ	Ⲋ	(Ⲋ)Ⲑ
10	/k/	Ⲭ	Ⲭ	Ⲭ	Ⲭ
11a	/l/	Ⲭ	Ⲭ	Ⲭ	Ⲭ
11b	/l̥/	Ⲭ	Ⲭ	(Ⲭ)	Ⲭ
12a	/m/	Ⲭ	Ⲭ	Ⲭ	Ⲭ
12b	/m̥/	Ⲭ	Ⲭ	(Ⲭ)	Ⲭ
13a	/n/	Ⲭ	Ⲭ	Ⲭ	Ⲭ
13b-c	/n̥/	- Ⲭ } Ⲭ }	Ⲭ	(Ⲭ)	Ⲭ
14	/ks/	Ⲭ	Ⲭ	Ⲭ	Ⲭ
15	/o/	Ⲭ	Ⲭ	Ⲭ	Ⲭ
16	/p/	Ⲭ	Ⲭ	Ⲭ	Ⲭ
17a	/r/	Ⲭ	Ⲭ	Ⲭ	Ⲭ
17b	/r̥/	Ⲭ	Ⲭ	(Ⲭ)	Ⲭ
18	/s/	Ⲭ	Ⲭ	Ⲭ	Ⲭ
19	/t/	Ⲭ	Ⲭ	Ⲭ	Ⲭ
20a	/y/?	Ⲭ	Ⲭ	Ⲭ	Ⲭ
20b	/u/	ⲬⲮ	ⲬⲮ	ⲬⲮ	ⲬⲮ
20c	/w/	(Ⲭ)Ⲯ	(Ⲭ)Ⲯ	(Ⲭ)Ⲯ	(Ⲭ)Ⲯ
21	/ph/	Ⲭ	Ⲭ	Ⲭ	Ⲭ
22	/kh/	Ⲭ	Ⲭ	Ⲭ	Ⲭ
23	/ps/	Ⲭ	Ⲭ	Ⲭ	Ⲭ
24	/ō/	Ⲭ	Ⲭ	Ⲭ	Ⲭ
25	/š/	Ⲭ	Ⲭ	Ⲭ	Ⲭ
26	/f/	Ⲭ	Ⲭ	Ⲭ	Ⲭ
27	/h/	Ⲭ	Ⲭ	Ⲭ	Ⲭ
28	/č/	Ⲭ	Ⲭ	Ⲭ	Ⲭ
29	/c/	Ⲭ	Ⲭ	[wa]	Ⲭ
30	/ti/	Ⲭ	Ⲭ	Ⲭ	Ⲭ
31	/ʔ/	Ⲭ	gem.	[wa]	gem.
32	/v/	[wa]	[wa]	[wa]	[wa]
33	/cə/	Ⲭ	Ⲭ etc.	[wa]	Ⲭ etc.
34	/ç/	Ⲭ	[wa]	[wa]	[wa]
35	/x/	Ⲭ	[wa]	Ⲭ	Ⲭ
36	/čh/	[wa]	[wa]	Ⲭ	[wa]

frequently ⲉⲮⲀⲬⲬⲬⲬⲬⲬⲬⲬ or even B ⲉⲬⲬⲬⲬⲬⲬⲬⲬ, probably pronounced /hy a kin thi non/ or even more likely /hi a kin thi non/; however, h̥ya kin thi non/ seems not inconceivable.

Coptic has six *sonorants*, or voiced consonants: /b/ (2a), /l/ (11a), /m/ (12a), /n/ (13a), /r/ (17a), and /v/

(32), of which /l/ is a lateral, /r/ is a vibrant trill, /m/ and /n/ are nasals, /b̥/ and /v/ are, like the glides, voiced fricatives.

All the other consonants below are unvoiced. Note that the Greek voiced fricative /z/ (6) and the Greek voiced stops /g/ (3) and /d/ (4) occur practically

only in Copto-Greek words (cf. VOCABULARY, COPTO-GREEK), in which, however, they have probably lost their original (Greek) voicing; thus, as elements of Coptic, /z/ = /s/ (18), /g/ = /k/ (10), and /d/ = /t/ (19).

Coptic has 6 *fricatives*: /s/ (18), /š/ (25), /f/ (26), /h/ (27), /ç/ (34), and /x/ (35).

According to the traditional Coptic grammar, Coptic has only a single *affricate*, /č/ (28). However, DIALECT H (and perhaps even F and the subdialects of the Fayyumic dialectal group, except F7) may also have /č/ (/č/ being pronounced nearly like [tš], and /č/ nearly like [tç]).

Coptic has five *stops*: /k/ (10) (and /c/ (29), which is a palatalized /k/ corresponding approximately to [kj]); /p/ (16); /t/ (19); and /ʔ/ (31) (see ALEPH; CRYPTOPHONEME; and GEMINATION, VOCALIC). For the aspirated affricate and stops in B etc. (/čh/, /kh/, /ph/, /th/), see above.

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PHONOLOGY OF THE GREEK OF EGYPT, INFLUENCE OF COPTIC ON THE. The main source for the Greek language in Egypt is the mass of nonliterary papyri, ostraca, and

inscriptions from the Ptolemaic, Roman, and Byzantine periods, a total of almost fifty thousand documents. An analysis of the orthographic variations in these documents indicates that the pronunciation of the Greek koine spoken and written within the confines of Greco-Roman Egypt reflects to a large extent a transitional stage between that of the classical Greek dialects and that of modern Greek. But there is also extensive evidence of bilingual interference in its phonology by Coptic.

As regards consonants, there is some evidence from as far back as the early Roman period for the shift of the classical voiced stops /b/, /g/, and /d/, represented by β, γ, and δ, to fricatives, as in modern Greek. But there is abundant evidence from documents of the same period and place that these sounds were still stops, for γ and δ interchange very frequently, and β occasionally, with the symbols for the corresponding voiceless stops κ, τ, and π, respectively. Similarly, χ, θ, and φ, the symbols for the aspirated stops /kh/, /th/, and /ph/, also interchange frequently in the same documents with κ, τ, and π. This confusion, found extensively only in Egypt and paralleled in the spelling of Greek loanwords in Coptic, has no satisfactory explanation in terms of Greek phonology, for although both the voiced and aspirated stops have shifted to fricatives in modern Greek, they have never merged with those of another order but have remained distinct to the present day.

In Coptic, however, there was no phonemic distinction between voiced and voiceless stops in any dialect. But the sound represented by β occurs as a distinct phoneme, pronounced during the Greco-Roman period as a voiced bilabial fricative [β]; hence, the symbols for the labial stops are not so frequently confused. Similarly, the unconditional interchange of aspirated and voiceless stops is caused by bilingual interference. In Coptic, aspirated stops were phonemic only in the BOHAIRIC dialect, where the opposition occurred only in accented syllables and the aspirates were lost in late Byzantine times.

In addition, the voiced bilabial fricative quality postulated for Greek β especially when it interchanges with ου /w/ or υ /y/ coincides with that of Coptic β, and the fricative quality of intervocalic Greek γ in connection with rounded back vowels may represent the labiovelar fricative quality of the Coptic ογ /w/.

There is also widespread confusion of λ and ρ. Although in Greek the phonetic quality of these liquids varied considerably, nowhere outside Egypt was there an identification of the two sounds. In the FAYYUMIC dialect of Coptic, however, from which