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Sounds of Gəʿəz – How to Study the Phonetics and Phonology of an Ancient Language

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Für Ewald Wagner

1. Introduction

When we are talking about the phonetics and the phonology of ancient languages (extinct or classical) like Latin, Greek, Hebrew or Syriac, there is a commonplace notion that our modern pronunciation, determined by traditions or classroom usage, differs to a certain degree from the actual pronunciation in ancient times. As long as we are working with texts in ancient languages as historians or theologians the difference between classroom pronunciation and the real pronunciation in historical times is only of minor importance. But as linguists we cannot avoid the problem. We are not able to understand such important phenomena and processes in historical linguistics, as for instance morphological change, without a clear understanding of the involved phonemes.

However, there were no tape recorders in ancient Babylon, Athens or Aksum. The confidence we place in our possibilities of reconstructing the phonological system of an ancient language, the degree of probability of our constructs is hard to assess. Scholars of Indo-European linguistics usually put great confidence in their reconstructions of Latin or Greek phonology. When we turn to an ancient Semitic language like Akkadian, things are different. While some Assyriologists are quite confident that their classroom pronunciation *grosso modo* matches the usage common in ancient Uruk, Babylon or Assur,² others are very sceptical. After having studied the cunei-

¹ An early version of this paper was given at the XVIth International Conference of Ethiopian Studies at Trondheim (Norway) on July 3, 2007. For this reason it is published in English here. Revised versions were presented at the Colloquium to celebrate the 80th birthday of Prof. Dr. Ewald Wagner at Jena (Germany) on September 7, 2007, and in the Interdisciplinary Linguistic Colloquium at Marburg (Germany) on January 18, 2008. I would like to dedicate this paper to Ewald Wagner, a scholar of true learning and an esteemed and dear colleague.

² Buccellati's unambiguous statement (1996:16) may serve as an example: "To put it in practical terms, it seems a safe presumption to say that if we were to meet a living informant of Akkadian and were to converse together, we would certainly be found to have a very strong accent, but would ultimately be able to make ourselves understood."

form orthography thoroughly for a long time, a well-known Assyriologist came to the conclusion: “If we could raise an old Babylonian from the dead and tried to talk with him in Akkadian, he wouldn’t even recognize that it’s supposed to be his own language.”³ Concerning Gəʿəz, I dare say we are perhaps in the middle between these extremes.

But how can we study the phonology of an ancient language that has no native speakers who speak it as their first language for much more than a millennium. One might object that Gəʿəz is not a dead language, as it is still learned and used by church scholars in Ethiopia and Eritrea as a classical language, in contrast to extinct languages like Sabaic or Hittite.⁴ But even if there is a living tradition, it is hardly conceivable that it is unaffected by the omnipresent forces of language change and the influence of the vernaculars. Is there a general methodology for studying ancient phonologies? Of course, there isn’t. As is the case in other fields of history, circumstances yielding sources for a historical reconstruction differ from case to case, so the historical linguist has to work with the material he has at his disposal. On the other hand, this doesn’t relieve us of the burden of a sound methodology. In this paper, I would like to review different sources for a reconstruction of the historical phonology of Gəʿəz and present some observations that can contribute to more sound hypotheses.

2. Orthographic system

The first source for reconstruction is the *fidäl*, the near-syllabic writing system of Gəʿəz. This seems banal, but it isn’t. The Ethiopic writing system as we know it, is the product of a reduction of the Sabaean alphabet that underwent a thorough and deliberate reform under king ʿEzana, or shortly before his reign (Hahn 1987:218–220; Schneider 1995). So we can assume that it reflects the structure of the language of the 4th century quite well.

There is one interesting question that can be solved by taking a look at the writing system: the phoneme /h/⁵ (ሀ) is treated as a laryngeal by the phonotactic rules of Gəʿəz, cf.: *ḡadəḡən* ‘he will be spared’ instead of **ḡadäḡḡən*.⁶ The same rules apply to /^h/, /^ʰ/, /ḡ/ and /h/. In traditional pronunciation, /ḡ/ merged with /^h/ and /h/ and is pronounced [h]. However, from the perspective of comparative Semitics, a pronunciation as a voiceless

³ Prof. Dr. Walter Sommerfeld (Marburg), personal communication.

⁴ On the basic sociolinguistic difference between “classical” and “dead” languages, cf. MIONI (2004).

⁵ Notation: /.../ = phonemes; [...] = phonetic realization of phonemes; no brackets = orthographic forms.

⁶ The so-called second rule of laryngeals that is also applied to the pharyngeals /ḡ/ and /^h/.

velar fricative is to be expected, not a laryngeal fricative. How can we resolve this contradictory evidence? There is a hint in the writing system: The letter for the labialized variant of /b/, /b^w/. The form of the letter is clearly derived from *b*: ታ. This letter is even attested in one of ʿEzana’s inscriptions (*b^wəlko* ‘its number’, RIÉ 189 / 22). In Gəʿəz, only velar obstruents can be labialized, so obviously in Aksumite times /b/ was pronounced as a velar obstruent. Most probably, it was a voiceless fricative, because this would explain the merger with /b/ and /b/. So we can state with a certain confidence that in Aksumite Gəʿəz /b/ was pronounced as a voiceless velar fricative (IPA [x]). As stated by Diem (1988:247–253), there is no case where the laryngeal rules are applied to /b/ in inscriptions from Aksumite times. The application of the so-called laryngeal rules to /b/ in Gəʿəz manuscripts, all dating from post-Aksumite times, is recorded in our grammars as standard Gəʿəz but, strictly speaking, it is an anachronism.

3. Transcriptions in contemporary languages

Transcriptions in other contemporary languages may shed light on the phonetics of the language in question. Before utilizing transcriptions for a reconstruction, several questions have to be answered. The most important is: to which degree is the orthographic system of the transcribing language able to represent phonetic distinctions of the transcribed language? And were the words perceived aurally or graphically?⁷ There are several transcriptions of Aksumite words, usually names, in Sabaic and Greek texts that potentially might help for the reconstruction of Gəʿəz phonetics and phonology.

3.1. Sabaean transcriptions

Several transcriptions of Ethiopian names or common nouns of late antiquity occur in Sabaean inscriptions (cf. Müller 1978, Beeston 1994)⁸. Most of the equations correspond to what we would expect them to be:

⁷ E.g., the Greek rendering Αθροροθαμ (Gregentius bios 9.249) for Gäbrä Maskäl is explicable only via a mis-copied Arabic intermediate source (GIANFRANCESCO FIACCADORI in BERGER 2006:66), and therefore utterly useless.

⁸ In KROPP (2004) Sabaic transcriptions of Ethiopian names are used to discuss questions of Sabaic orthography and pronunciation.

Sabaic ⁹	Gəʿəz	
^ʔ ksʹmn [^ʔ aksūmān ¹⁰]	cf. ^ʔ Aksum	‘Aksumites’
šbʹt ¹¹	šābaʹit	‘troops’
grmt ¹²	gärima ¹³	personal name
ngsʹyn ¹⁴	nägaši	‘king’ ¹⁵
^ʔ brh ¹⁶	^ʔ abrəba	personal name
sʹrəwt ¹⁷ or sʹrwʹt ¹⁸	särwe, pl. sārəwit	‘army’

Table 1: Gəʿəz words in Sabaic transcription

At least, this is evidence that the Sabaic orthography was able to represent Gəʿəz consonants quite well. Bearing in mind that Sabaic has retained more of the Proto-Semitic consonants than Gəʿəz, this is hardly surprising. There is one point worth mentioning. In a late Sabaeen inscription (RES 3904), the words *kersʹtsʹ* < (Gəʿəz) *Krastos* < Χριστός ‘Christ’ and [*mn*]sʹ *qdsʹ* < *mānfäs kəddus*¹⁹ ‘Holy Spirit’ show a twofold transcription for Gəʿəz /s/, once with sʹ (𐩦) and once with sʹ (𐩨). Sima (2004: 24–25) has argued convincingly that this is proof for a merger of /sʹ/ and /sʹ/ in late Sabaeen. As /sʹ/ originally most probably had the phonetic value of an affricate [^ʔsʹ],²⁰ this means that the product of the merger was de-affricated. Gəʿəz /s/ is also the product of a merger of the same Proto-Semitic consonants (*sʹ, *sʹ, and also *tʹ²¹). Hence, the mentioned equations indicate that /s/ (𐩦) also was a sibilant and not an affricate.

⁹ For Sabaic, the established transcription of the *Sabaic Dictionary* (BEESTON et al. 1982) is used here.

¹⁰ Ja 576 / 11; Ja 631 / 13; RES 3904 / 14; E 28 § 1. In Sabaeen the plural of the nomen relationis (*nisba*) is formed with the pattern ^ʔfn. The vowels can be reconstructed as ^ʔafʹūlān (cf. Stein 2003:81–82).

¹¹ Ja 635 / 24.

¹² Ja 577 / 3. 6; Ja 585 / 14–15.

¹³ The name Gärīma is known as the name of one of the “Nine Saints”.

¹⁴ E.g., CIH 541 / 88; Ja 577 / 10; Ja 631 / 15; Ja 631 / 21.

¹⁵ For the Sabaeen form, cf. also Arabic *an-nağāšī* ‘(Aksumite) king’.

¹⁶ Ry 506 / 1; Ja 546 / 2; CIH 541 / 4; DAI GDN 2002–20 / 6.

¹⁷ CIH 541 / 40–41. 53; Ry 506 / 1 etc.

¹⁸ CIH 541 / 33–34. 58.

¹⁹ As Φ is a voiceless ejective velar stop in modern Ethio-Semitic and probably also in Aksumite Gəʿəz, it is transcribed with *k* here. The wide-spread transcription with *q* in accordance with the pronunciation of the cognate consonant in Standard Arabic where it is a voiceless post-velar stop, is less appropriate, even more so, as the Ethiopian ejective pronunciation is the one that can be reconstructed for Proto-Semitic.

²⁰ On the affricate hypothesis cf., FABER 1984; FABER 1985; SOMMERFELD in VON SODEN 1995:35–39; TROPPEL 1996; STRECK 1996.

²¹ Cf., e.g. VOIGT 1994.

3.2. Greek transcriptions

We find Gəʕəz words, esp. names in Greek inscriptions,²² on coins,²³ in Cosmas' *Christian Topography*, and in other sources.²⁴ As the phonology of Greek is extremely different from Gəʕəz, the orthographic system of Ancient or Byzantine Greek is only partly useful in rendering Gəʕəz phonemes. For example, all the laryngeals do not appear in Greek. There are several correspondences occurring repeatedly that are quite banal, like e.g. Greek μ rendering Gəʕəz /m/ or λ rendering //l/. But not all Greek renderings of Ethiopian names are inconclusive or banal. I'd like to draw attention to the following cases:

Gene Gragg, in an article devoted especially to Gəʕəz phonology (Gragg 1997a) fails to give any information about the historic value of /ʃ/ (**θ**). He merely states that it was a glottalized consonant and that it later merged with /s/ (**Ϻ**), so it must have been a continuant, at least at the time of the merger (Gragg 1997a:174). But Gragg missed important evidence.²⁵ Bearing in mind the comparative evidence from Modern South Arabian and the fact that in Aksumite times /ʃ/ < *ʃ has not been subject to any merger, a lateral obstruent is the expected nature of /ʃ/. And there is an interesting transcription from the great bilingual ʕEzana-inscription where a certain geographic region is spelled (in unvocalized script) *mʃ* in the Gəʕəz and *Ματλια* in the Greek version (RIÉ 185 I / 15; 185 II 16; 270 / 26 and 185bis I / 16; 185bis II C 14; 270bis / 22). So, if /ʃ/ is transcribed with the sequence τλ, this clearly points to a lateral affricate (Rodinson 1981: 101-104; Weninger 1999). The affricate, which becomes abundantly clear from the rest of the evidence, must have been an ejective.

From a Greek transcription there is also evidence that /s/ (**Ϻ**) was an affricate in Aksumite Gəʕəz and not a sibilant. The toponym *Şayamo* (RIÉ 188 / 3; RIÉ 189 / 3; spelled *şym* in RIÉ 185 I / 2, II / 2; RIÉ 185bis I / 2; RIÉ 186 / 3; RIÉ 191 / 10; RIÉ 192 / 6) is spelled *Τιαμω* in Greek (RIÉ 270 / 4; RIÉ 270bis / 3; RIÉ 271 / 9). There can be hardly any doubt that τ represents the occlu-

²² RIÉ 269–286A.

²³ MUNRO-HAY (1999) is used as a sample for Aksumite coins here.

²⁴ For an overview, cf. PPATHANASIOU (2005:884–886).

²⁵ Basically, the same applies to GRAGG (1997b), although he gives more information here. Even more irritating is his treatment of /ʃ/ (**θ**) in his sketch of Gəʕəz in *The Ancient Languages of Mesopotamia, Egypt, and Aksum* (GRAGG 2008): In the text the above-mentioned statement is simply repeated, but in table 6.4 it is stated that ʃ (**θ**) is the cognate of *d and z* in Sabaic and Arabic, which is against all established evidence. In table 6.5, it is described as a velar (sic!) glottalized fricative, but this is probably only a printer's mistake.

sive element of the affricate. So the probability that /s/ was a glottalized alveolar affricate [tʰsʰ] is very high. This is corroborated by the Greek rendering of Kaləb's cognomen Ἰλλᾶ ὁ Ἀσβῆθα (*klb/lʰʰsbh*, RIÉ 191 / 7f.) as Ἐλλατῆβᾶας by Cosmas (II 56, 4 / p. 369)²⁶.

The correspondence of Gəʕəz /z/ with ζ is fairly well attested, cf. the following cases:

- a) Αἰζαναῖς (RIÉ 270/1), Αεἰζαναῖς (RIÉ 270bis/1) or Αζαναῖς (RIÉ 271/6) respectively, i.e. ^czn (RIÉ 185 I/1; RIÉ 185 II/1; RIÉ 185bis/1) or ^cγdn (RIÉ 185bis I/1).
- b) Σαιαζανα(ν) (accusative; RIÉ 270/9; RIÉ 270bis/7), i.e. *s*^{2c}dn (RIÉ 185 I/3) or *s*^czn (RIÉ 185 II / 5; RIÉ 185 II / 5) or *s*²zn (RIÉ 185bis I / 5) respectively.²⁷
- c) Γαβαζα (Cosmas II 55 [drawing]/367), to be identified with Gəbāz(a).²⁸
- d) Γαζη (Cosmas II 60/p. 375 = RIÉ 277/3) or Αγαζη (variant reading), i.e. the ὁ Ἀγ^cazi.²⁹

The pronunciation of Greek ζ seems to be somewhat problematic. Etymologically, ζ goes back to several Indo-European sources. In the ancient Greek dialects, variant spellings attest to different pronunciations, like [zd], [dz], [z], [ts], [d] and [ð] (Karvounis 2008:93–95). On the other hand, for the Egyptian Koine in Roman times, the pronunciation [z] seems to be fairly secure (Horrocks 1997:113). All in all, this points to a pronunciation [z] for Gəʕəz /z/.

Another interesting aspect concerns the sixth-order vowel that is usually transcribed by a schwa (ə). At least in the IPA-transcription this symbolizes an open mid-central vowel (IPA-Handbook 1999:202). But when we look at transcriptions such as the following, we hesitate. The word *bəʕasiyā* or *bəʕase* ‘man of (this-and-this lineage)’ (construct state) is written on Greek coins and inscriptions βῆσι.³⁰ Now the sixth-order vowel in Gəʕəz is the product of the merger of Proto-Semitic *i and *u, a close front vowel and a close back vowel. The natural product of merger would be a close central

²⁶ On various distorted Greek renderings of Kaləb's throne-name, cf. FIACCADORI in BERGER (2006:59f.).

²⁷ For more occurrences of the names of these two rulers in literary and numismatic sources, cf. HAHN (2005).

²⁸ On this outpost of Adulis, cf. STUART MUNRO-HAY (2005).

²⁹ An ethnonym already attested in pre-Aksumite times (SIMA 2003). Although this term is not attested in the Aksumite inscriptions, it seems safe to state that it was a name used for a people of the Aksumite empire. For literary attestations of the term (not referred to by SIMA), cf. DILLMANN (1865:1189).

³⁰ RIÉ 271 / 7; examples on coins in MUNRO-HAY 1999; 27ff.

vowel (IPA ɨ). But the transcription with ɨ is not the only evidence. It coincides with the traditional pronunciation, that also has a close central vowel for the sixth order, and not what schwa usually is used for.

4. Transcriptions and loanwords from contemporary languages

The opposite direction of borrowing can also shed light on phonological problems. When loan words from contemporary languages are included in the language in question, the pronunciation of the source-word can give hints for the pronunciation of the word in the receiver language. Of the many languages that became sources of loan words in Aksumite Gəʕəz (cf. Weninger 2005), only two are relevant for the reconstruction of Gəʕəz phonetics and phonology, i.e. Greek and, to a much lesser degree, Sabaic. For Cushitic words, the individual sources are not attested, the precise sources of the numerous Aramaic loans are unknown, and Latin loans mostly, if not always, had intermediate sources like Greek and Arabic.

4.1. Loans from Greek

The Ethiopian Bible originally was translated from Greek. But the representation of biblical names in Gəʕəz is enigmatic. Some do look like straightforward transcriptions (or transliterations) of a Greek Vorlage (LXX or NT), like e.g. *ʾIyāsus* < Ἰησοῦς ‚Jesus’ which differs greatly from the original Hebrew *Yēšūʿ*³¹ (or a corresponding Aramaic form). Other names seem to have a Semitic (probably Aramaic) source, like *Yaʕqob* < Hebrew *Yaʕqob* (or a similar Aramaic form, but certainly not Ἰακωβ[ος]). Still others look as if they are from mixed sources, e.g. *Yohannās*, showing both a ‘Semitic’ *h* (cf. Hebrew *Yōhānān*) and a Greek ending (cf. Ἰωάννης). Whether the transmission of the names has been accompanied by oral tradition through Jewish speakers of Aramaic, as suggested by Zuurmond (1989:126ff.), or whether the attested forms are due to later revisions using Arabic models, is an open question, but it is evident that without further in-depth research, correspondences in Biblical names cannot be used as sources for Gəʕəz phonological reconstruction.

Many of the correspondences yielded by Greek loans in Gəʕəz texts are also quite banal. The correspondence *k* = *χ* in pairs like *mānākos* < μοναχός ‘monk’ is just what we would expect knowing that Greek *χ* originally was an aspirated voiceless stop (Kavounis 2008: 90–92).³¹ Similar cases are *kərtas* ‘leaf of a book, scroll, roll, letter, slate, parchment, paper’ < χάρτης which was (contrary to Grohmann 1919:445 and Leslau 1987:294) not borrowed

³¹ The correspondence is corroborated by the spelling Χαληβ for Kaleb (MUNRO-HAY 1999:39).

via Arabic, but obviously was borrowed already in Aksumite times and hence most probably directly from Greek,³² or *Krastos* ‘Christ’ < Χριστός. But I would like to point out one word that illustrates an interesting development. The word *səfnəg* ‘sponge’ is doubtlessly a loan from Greek σπόγγος. It is attested already in the Gəʿəz gospels (Mt 27, 48; Mk 15, 36, Jn 19, 29).³³ Contrary to what is the case in many other Greek loans, π is rendered not by *p* (ፕ) or *p* (ፑ), but by *f* (ፈ). Probably, it is part of an older layer of loans that came into Gəʿəz before the translation of the Bible and before the introduction of *p* and *p* into the phonology and writing system of Gəʿəz. There is a similar phenomenon in Classical Arabic. Older loanwords and names from Greek are rendered by the grapheme *f*, younger loanwords by the grapheme *b*, cf. e.g. *ʾaflātūn* < Πλάτων ‘Plato’ vs. *balġam* < φλέγμα ‘phlegm’. Therefore, this may mean that the shift of Proto-Semitic **p* to /*f*/ in South Central and South Semitic belongs to a younger stage of Semitic language history. But this needs further research.³⁴

The affricate nature of /*s*/ (see above) is further corroborated by *läns* ‘bandage, linen’ (Dillmann 1865:47) < λέντιον, where the plosive element of the affricate reflects the stop τ.

4.1. A loan from Sabaic

I firmly believe that there are many Sabaic words in Gəʿəz. However, they are hard to detect (cf. Weninger, forthcoming) and the phonological system of Sabaic is even lesser known than the phonology of Gəʿəz, but there is one interesting correspondence: Historical and linguistic evidence leave hardly any doubt that the Gəʿəz word for ‘mule’ *bäkl* (በቅል ፣) is a loanword from South Arabian *bġl* [**baġl*]³⁵ (Sima 2000:40–42). The correspondence Arabic / Sabaic /ġ/ ~ Ethiopic /*k*/ is common also in other (mainly later) loans from the Arabian Peninsula (Leslau 1990:232; Weninger 2002:291). The reason is probably that postvocalic /*k*/ in Northern Ethiopic, viz. Tigrinya, has a fricative allophone [χʻ] (Kogan 1997:425), so that the Sabaic or Arabic

³² There are many attested occurrences in the Bible and Apocrypha, cf. DILLMANN (1865:837f.).

³³ On *səfnəg* cf. WENINGER (2005:471).

³⁴ ጸሐፊ ፣ ፍልስጣ ፣ *ṣəḥafi fələsta* (Qerällos IV.2, p. 72, l. 15) < πλαστογράφος ‘lying author’ looks like a similar case, although in view of the nature of the source, it should be classified as a mere transcription (WEISCHER 1979:75). The following remarks concerning the rendering of Greek labials in Gəʿəz, mainly referring to onomastic material, are worth mentioning: CONTI ROSSINI (1938:194, n. 3), BAUSI (2002:26, nn. 91 & 92), BAUSI (2005:164), BAUSI – GORI (2006:97, n. 11).

³⁵ Cf. Arabic *baġl* ‘mule’.

uvular fricative ǵ [ɣ] was perceived as the fricative allophone of /k/ and hence written with /k/. As *bäkl* (በቅል) is amply attested already in Aksumite translation texts (cf. Dillmann 1865:511) this could be an indication that /k/ had a fricative allophone already in Aksumite times. However, if this had been the case, this allophone has not been preserved in the traditional pronunciation.

5. Traditional pronunciation

Scholars like Enno Littmann (1917–1918), Marcel Cohen (1921), Eugen Mittwoch (1926) and Makonnen Argaw (1984) have collected ample data on the traditional pronunciation as practiced by Ethiopian church scholars. There are controversial opinions about the value of the traditional pronunciation of Gəʿəz for a historical reconstruction of Gəʿəz (cf. e.g. Brockelmann 1929, Ullendorff 1955). At least concerning the realization of the consonants, traditional pronunciation is heavily influenced by Amharic. All consonants that merged in Amharic also merged in traditional pronunciation. But if we look at issues like stress or syllable structure, the traditional pronunciation might help, because here we have significant differences to Amharic. These differences may be possible indications from old traditions. For example, the middle radical of 0₁-verbs in the perfect is not geminated in traditional pronunciation (*nägärä*), but it is in Amharic (*näggärä*). As the non-geminated form is the one to be expected in the light of the related languages, this might be a case of an archaism in traditional pronunciation and vice versa for general gemination of the imperfect in 0₁ verbs in Gəʿəz, which is absent in Amharic A-type verbs.

6. The phonology of the daughter languages

A potential source for the reconstruction of an ancient phonology is the phonological system of daughter languages. One might object that this bears the risk of projecting the modern phonology back into ancient times. On the other hand, comparative linguistics reconstructs morphology on the basis of younger morphologies. Why shouldn't it work with phonology, at least in principle? So, we can use the modern languages to exclude assumptions that are impossible or highly unlikely.

A very simple example: Both Tigre and Tigrinya, languages that have vernaculars of Gəʿəz as ancestors, preserve the distinction between /ʔ/ and /c/ that is lost in the traditional pronunciation. So this can be adduced as additional evidence for this distinction in Aksumite Gəʿəz, even more so as this reconstruction is corroborated by comparative evidence from Arabic and Aramaic.

7. The phonology of related languages

The phonological system of the related Semitic languages can give at least indirect hints for the historical pronunciation of certain phonemes. Gene Gragg in his article mentioned above (1997a: 174) fails to give information on the pronunciation of /s/ (**ሠ**). He merely classifies it as voiceless and states that in the traditional pronunciation it merged with /s/ (**ሰ**). Gəʕəz /s/ appears as σ in Greek transcription. This is rather inconclusive, as σ is also used for /s/. But: The Gəʕəz consonant *s* is the cognate of Arabic *ṣ* (ص),³⁶ Sabaic *s*² (ጸ), Mehri *s* etc. There is ample evidence, e.g. from Modern South Arabian, or the writings of Arab grammarians that Proto-Semitic **s* was a voiceless lateral fricative (Steiner 1977, Voigt 1979). There is no reason to assume that Aksumite Gəʕəz differed in this regard, because there was no merger of **s* with any other consonant. So the most probable assumption is that Gəʕəz /s/ has retained the pronunciation as a lateral fricative [ɬ] (and the non-emphatic counterpart of /s/). There are no arguments against this assumption. It cannot be proven, but it's most likely.

8. Results

Although not all Gəʕəz phonemes could be discussed here in depth and the straightforward presentation of IPA symbols might seem daring, I would nevertheless like to present the results in the following tables:

	labial	labiodental	alveolar	palatal	velar	pharyngeal	glottal
voiceless stop	<i>p</i> [p]		<i>t</i> [t]		<i>k</i> [k]		^ʔ [ʔ]
voiced stop	<i>b</i> [b]		<i>d</i> [d]		<i>g</i> [g]		
ejective stop	<i>p</i> [pʰ]		<i>t</i> [tʰ]		<i>k</i> [kʰ]		
voiceless fricative		<i>f</i> [f]	<i>s</i> [s]		<i>ħ</i> [x]	<i>ħ</i> [ħ]	<i>h</i> [h]
voiced fricative			<i>z</i> [z]			^ʕ [ʕ]	
ejective affricate			<i>ʃ</i> [tsʰ]				
nasal	<i>m</i> [m]		<i>n</i> [n]				
trill			<i>r</i> [r]				
lateral fricative			<i>ɬ</i> [ɬ]				
lateral ejective			<i>ɬ</i> [ɬʰ]				
approximant	<i>w</i> [w]			<i>y</i> [j]			
lateral approximant			<i>l</i> [l]				

Table 2: Historical pronunciation of Gəʕəz consonants

³⁶ Arabic *ṣ* is the reason why Gəʕəz *s* was transcribed with *ṣ* in older European grammars, and also pronounced [ʃ] in German classroom usage. This was the pronunciation the present writer learned in the 1980s.

Sigla of Inscriptions and Classical Sources

- CIH = Corpus *Inscriptionum Semiticarum. Pars quarta, inscriptiones himyariticas et sabæas continens* (Paris 1889–1929).
Cosmas = WOLSKA-CONUS (1968).
DAI GDN 2002–20, cf. NEBES (2004).
E = Inscriptions published by MUTAHHAR AL-IRYĀNĪ, cf. “Verzeichnis der Inschriftensiglen” in STEIN (2003:274ff.).
Gregentius, cf. Berger (2006).
Ja = Inscriptions published by ALBERT JAMME, cf. “Verzeichnis der Inschriftensiglen” in STEIN (2003:274ff.).
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Summary

The phonology belongs to the basic structures of a language. Knowing the sounds of the phonemes of a language is essential for the grammar, etymology or classification of a given language. For ancient languages (extinct or classical), phonology is always problematic, for obvious reasons. In this paper, various approaches are evaluated and combined that can shed light on how *Gəʿəz* might have sounded in Aksumite times: transcriptions in contemporary language, transcriptions and loanwords from contemporary languages, traditional pronunciation, the phonology of the daughter languages, and comparative evidence.