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Two more contexts for Ge‘ez *u > u and three for *a > ə

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Abstract:
The main Ge‘ez (Classical Ethiopic) verbal adjective is characterized by an *ə-u* vowel melody. Based on cognate evidence, the most basic form of this adjective, 0_1-stem *1ə2u3*, derives from a **1a2uː3*- pattern and thus shows assimilation of **aCuː* > *əCu*. This assimilation does not operate in a set of specialized numerals shaped like *1ä2u3*, which should be reconstructed as **1a2u3*- with short **u*. Short **u* also yields Ge‘ez u in the nonaccusative case of the masculine cardinal numerals, like **ɬalaːθtu* > *śälästu* ‘three’; this ending goes back to the Proto-Semitic diptotic nominative. The assimilation of **aCuː* > *əCu*, on the other hand, also affected the personal pronoun **huːʔa-tuː* > *wəʾətu*, the perfect of fientive verbs like **gabaruː* > *gäbru* ‘they did’, and the jussive of stative verbs like **yitrapuː* > *yətrəfu* ‘may they remain’. *ə* was leveled to other parts of these paradigms, solving several longstanding problems of Ge‘ez morphology.

Keywords: Semitic, Ethiosemitic, passive participle, historical phonology, historical morphology

Ge‘ez (*gəʿz*, Classical Ethiopic) is a Semitic language of the Ethiosemitic subfamily, spoken in present-day northern Ethiopia and Eritrea during the first half of the first millennium CE and used there as a liturgical and scholarly language up to the present day.[1] The most common Ge‘ez verbal adjective is shaped like *1ə2u3* in the basic form of the verb, known as 0_1.[2] Its semantics are mediopassive, expressing

1 The research for this article was funded by Dutch Research Council (NWO) grant number VI.Veni.191T.023. As always, I am very grateful to Marijn van Putten for his comments on an earlier draft. I also thank the editors and anonymous reviewers for their comments. On the transcriptions of Ge‘ez and other languages used here, see the final section.

2 This article follows the convention of using *1*, *2*, and *3* to abstractly represent the three radicals of triconsonantal roots. *C* stands for any consonant, regardless of root structure. The terms for verb classes like 0_1 refer to the morphological absence

DOI 10.15460/auue.2023.96.1.296

the state associated with the related verb, as in *qətul* ‘killed’, *nəbur* ‘sitting’, *nəʾus* ‘small’, or *ʾəḫuz* ‘possessing’ (examples taken from Tropper 2002: 98) corresponding to *qätälä* ‘to kill’, *näbärä* ‘to sit’, *nəʾsä* ‘to be small’, and *ʾäḫäzä* ‘to seize’. In the absence of related adjectives with the expected **1u2uː3-* pattern elsewhere in Semitic, these adjectives are commonly derived from a reconstructed **1a2uː3-* pattern based on the correspondence in meaning to certain adjectival patterns in other Semitic languages (e.g. Fox 2003: 200), such as Biblical Hebrew *1å2u3*, e.g. *šåmur* ‘preserved’, *zå̱kur* ‘mindful’, *ʿårum* ‘clever’. This implies that the Ge‘ez pattern shows a conditioned sound change of **a > ə* before **uː*. As the verbs cited above (e.g. **qatala*) show, this differs from the usual development, **a > ä*. This vowel pattern has been extended to other verb stems, e.g. *qəddus* ‘holy’ from 0_2 *qäddäsä* ‘to sanctify’. In verbs with a lengthened first stem vowel like 0_3 *baräkä* < **baːraka* ‘to bless’, the verbal adjective is shaped like *buruk* < **buːruːk-* ‘blessed’. This shows that the *ə* in the first syllable of the other verbal adjectives derives from **uː* **1a2uː3-* > **1u2uː3-* > *1ə2u3*. In other words, **a* has undergone conditioned assimilation in quality to the following **uː*. Contrary to what we might expect, no such assimilation of **a > *i* seems to have taken place before **iː*, as is clear from the numerous **1a2iː3-* > *1ä2i3* adjectives like *ʿäbiy* ‘big’, *däqiq* ‘small’, and *näkir* ‘strange’ (Tropper 2002: 56) and the absence of a *1ə2i3* pattern.[3]

The sound change **aCuː > *uCuː* is phonetically plausible, but also ad hoc. Beyond these verbal adjectives, it is not generally recognized as operating in Ge‘ez. In this paper, we will consider two more contexts where **a* yields *ə* in syllables preceding *u*, namely, the third person singular independent pronouns and the 0_1 verb. In both of these paradigms, *ə* has spread beyond its original conditioning environment, while **a* has frequently been restored in the verb. Before examining these changes, we must confront a category that appears

(0) or presence of a derivational prefix (A for *ʾä-/-a-*, T for *tä-/-t-*, Ast for *ʾästä-/-astä-*) or lengthening in the stem ($_1$ for no lengthening, $_2$ for lengthening of the second root consonant, $_3$ for a lengthened stem vowel following the first root consonant). 0_1 is thus a morphologically unmarked verb class, with no derivational prefix (0) and no lengthening in the stem ($_1$).

3 **a* does shift to *ə* before gutturals, as in *ləhiq* ‘old’, but this happens before all vowels and is hence not an assimilatory change (Tropper 2002: 36–7).

DOI 10.15460/auue.2023.96.1.296

to form an exception to the assimilation of *aCuː to *uCuː, namely, that of the numerals patterned like *1ä2u3*.

Lack of assimilation in *1ä2u3* < **1a2u3-*

Ge'ez has a set of numerals used exclusively to refer to indications of time, especially days (Tropper 2002: 83–4). These are formed with the otherwise quite rare *1ä2u3* pattern:[4] *śälus* 'third, three (of days/nights etc.)', *räbuᶜ* 'four(th)', and so on up till *ᶜäśur* 'ten(th)'. *ʾəḥud* 'first, one' shows raising of **a*, but this is due to the following guttural and not directly conditioned by the following *u* (see Footnote 3). *Sänuy* 'second, two' preserves the Proto-Semitic root for 'two' (cf. Classical Arabic *θaːniy-* 'second' etc.), which has otherwise been replaced in Ethiosemitic (apart from *sanəy* 'the next day'); contrast the more common cardinal *kəlʾe(tu/ti)* 'two' and the ordinals *kaləʾ*, *dagəm*, *kaᶜəb*, and *baᶜəd*, all 'second' (Tropper 2002: 83). This preservation suggests that the *1ä2u3* numerals are archaic.

The archaism of the *1ä2u3* numerals is confirmed by cognates in other Semitic languages. In Old Babylonian, the usual form of the ordinals 'third'–'tenth' reflects **1a2u3-*, e.g. *šaluš-* 'third', *rebu-* < **rabuʕ-* 'fourth', *ḫamuš-* 'fifth' (Huehnergard 2011: 240). Old Assyrian attests vestiges of this pattern in *rabū-t-um* 'the fourth (f.)', *rabū-ni* 'our fourth witness', *ḫamuš-ni* 'our fifth witness', *ḫamuš-t-i* 'one fifth', and, significantly, a period of time known as a *ḫamuš-t-um* (Kouwenberg 2017: 281–286). The same pattern underlies Biblical Hebrew *ᶜåśor* 'tenth (day), ten (days)' (Koehler & Baumgartner 1994: 741). Various Arabic dialects like Sanaani (Qafisheh 1992: 144) and Urban Hijazi (Omar 1975: 67) attest words like *ʔaθ-θaluːθ* 'Tuesday' and *ʔar-rabuːʕ* 'Wednesday'.[5] Finally, Modern South Arabian attests a full set of separate numerals used for counting days like Omani Mehri *śīləθ* 'three', *rība* 'four', *ḫayməh* 'fifth' (Rubin 2018: 300–301). These derive from a pattern like **1a2U3-*, where **U* stands for any high vowel, long or short (Dufour 2021).

4 The only other example mentioned by Tropper (2002: 56) is *ḥäṣur* 'fenced-in place, wall'. Based on the sound correspondence identified below, it is plausible to connect this with the Biblical Hebrew place name *ḥåṣor* and derive both from **ħaθʾur-* (cf. the Arabic verb *ḥaḍara* 'to fence' from the same root for the identity of the second consonant).

5 I thank Maarten Kossmann and Fahad Alsharif for alerting me to these forms.

DOI 10.15460/auue.2023.96.1.296

At first glance, the Ge‘ez *qätul* numerals would seem to go back to **1a2uː3-*, matching the forms in dialectal Arabic. Ge‘ez u normally reflects **uː*, which would rule out a reconstruction with short **u* like that in Akkadian and Hebrew. If so, these numerals violate the sound law we are investigating, **aCuː > əCu*.

In some environments, however, Ge‘ez *u* goes back to short **u*. Al-Jallad (2014) convincingly argues that this is the regular development in originally word-final position. Thus, the first-person singular perfect ending **-ku* develops into *-ku*, not ***-k(ə)*. *U* is also preserved in the normal form of the cardinal numerals used with masculine nouns (excepting *kəlʾe* ‘two’, which retains an old dual ending), like *ʾäḥäd-u/ä* ‘one’, *śäläst-u/ä* ‘three’, *ʾärbaʿt-u/ä* ‘four’, etc.; in each example, *-u* is the nonaccusative ending and *-ä* is the accusative ending. Similarly, feminine ‘six’–‘ten’ show uninflecting *-u*, as in *səssu* ‘six’ (with contraction in **θamaːniy-u > sämani* ‘eight’).[6] Tropper (2002: 80–81) attributes the retention of the Proto-Semitic nominative ending **u* in the numerals to the fact that it is stressed, but this does not explain why the ending was lost in ‘three’–‘five’ when used with feminine nouns, e.g. *śälas* ‘three (nonaccusative)’. Tropper & Hasselbach-Andee (2021: 121) add the possibility that the *-u* is “a reflex of the common abstract marker *-ū* attested throughout Semitic”. As noted by Brockelmann (1908: 415–6), however, this putative suffix only occurs in combination with the following feminine suffix **-t-*; one may also wonder why a numeral would be formed with an abstract marker.[7] Finally, we may think of the use of the third person masculine singular possessive suffix *-u* as a marker of definiteness (as suggested by a reviewer of this paper), as in *däbr-u* ‘the mountain’ (Tropper 2002: 163–4). But *-u* follows the numerals in

6 The different treatment of the numerals up to five and those from six upwards is reminiscent of the traces of a base-five number system identified in Awngi (Southern Agaw) by Hetzron (1967: 170). This may well be a contact feature in Ge‘ez, which shows a fair number of other features that can be attributed to Agaw influence (Appleyard 2015).

7 Tropper & Hasselbach-Andee (2021: 234) write that “[a]n exception to the proposed analysis of *-u* in cardinal numbers as a reflex of the original nom. marker might be ከንቱ *kantu* ‘nothingness’, where the acc. in *-o* indicates that the final *u* might be the original vocalic ending of the noun”. This seems to be an additional argument against the numerals’ *-u* deriving from an abstract suffix **-uː-*, as it alternates with an accusative in *-ä* and not in *-o*, but I am not sure of the authors’ intent here.

DOI 10.15460/auue.2023.96.1.296

both definite and indefinite contexts. Moreover, the possessive suffix *-u* becomes *-o* in the accusative, while in the feminine numerals ‘one’ and ‘three’–‘five’, nonaccusative *-u* interchanges with accusative *-ä*. We might also expect feminine ‘eight’ to appear not as *sämani* but as ***sämanihu* if the final *-u* of the other numerals were the same as the possessive suffix, as *-hu* is the shape of that suffix after historically long vowels like *i* (e.g. *bəʾəsi-hu* ‘his man’).

Following Al-Jallad’s rule, we may instead reconstruct the numerals used with masculines with a Proto-Semitic diptotic inflection of nominative **-u*, oblique **-a*. This matches the shape of the numerals when used to refer to abstract numbers in Classical Arabic, as in *sittat-u ʔakθaru min ẖamsat-a* ‘six (nominative) is more than five (oblique)’ (Fischer 1972: 72).[8] The preservation of word-final **-u* in **ɬalaːθ-t-u > śäläs-t-u* then contrasts with its centralization and ultimate loss before a consonant in **ɬalaːθ-um* (cf. Arabic *θalaːθ-un*) > **śälas-əm > śälas*.

If Ge‘ez preserved **u* word-finally, it may also have done so in some other environments, as in the *1ä2u3* numerals. We can then connect them with their cognates reflecting **1a2u3*. Based on the shape of the numerals, the relevant sound law can initially be described as **CaCuC > CäCuC*. **CaCuC* does seem to have shifted to **CäCəC* in the perfect, e.g. **kabura* (cf. Classical Arabic *kabura*) > **käbərä > käbrä* ‘he was great’. Besides the preceding **a* and syllable structure, the relevant factor in **1a2u3- > 1ä2u3* may be the following short high vowels **u* and **i* in the nominative and genitive case endings, vowels which never directly follow the perfect stem: the perfect stem is either followed by a low vowel **a*, a long vowel, or a consonant. If so, *u* was preserved in the non-accusative case(s) of **1a2u3-* words: nominative **1a2u3-um* and genitive **1a2u3-im* > nonaccusative *1ä2u3*. *U* was then reintroduced to the accusative, where **1a2u3-am* should have yielded ***1ä23-ä*; this was replaced by *1ä2u3-ä*.

Based on this reconstruction as **1a2u3*, then, we can understand why the *1ä2u3* numerals did not participate in the assimilation to **uː* seen in the **1a2uː3- > 1ə2u3* verbal adjectives: they did not contain an **uː* for **a* to assimilate to in the first place.

8 This is probably a retention which has been restricted to this specific context in Arabic. On the possibility of all nouns in **-at-* originally having been diptotic, see Van Putten (2017).

DOI 10.15460/auue.2023.96.1.296

The third person singular independent pronouns

The Ge‘ez independent personal pronouns of the third person singular are masculine *wəʾətu* and feminine *yəʾəti*. In the accusative, they become *wəʾətä* and *yəʾətä*, respectively. They show a clear resemblance to the related pronouns in other Semitic languages, in particular the forms reflecting Proto-Semitic **suːʔa*, **siːʔa* and the dedicated oblique forms like Akkadian *šuāti*, *šiāti* (as well as the West Semitic cognates listed by Leslau 2006: 602). Their exact form in Ge‘ez remains unexplained, however, especially as far as the second *ə* is concerned (Suchard 2019: 210); compare the same vowel in the Tigre and Gafat pronouns *hətu* (m.), *həta* (f.) and *wət* (m.), *yət* (f.), respectively, and the Tigrinya demonstrative *ətu* ‘this’ (Leslau 2006: 602, 625). Brockelmann (1908: 303) explains this as assimilation to the preceding *ə* due to the intervening guttural, but as Rundgren (1955: 188) and Voigt (1987: 50) point out, this assimilation operates the wrong way around: normally, **wəʾätu* etc. should assimilate to ***wäʾätu*. Rundgren (1955: 195) relies on dubious reconstructions like **hu(ː)-hu(ː)-tuː*, while Voigt connects the change of **a* to *ə* to **miʔat- > məʾət* ‘hundred’. As Ugaritic *mỉt* shows, however, the Ge‘ez word goes back to a form with the short feminine suffix, **miʔt-*: the second *ə* is merely epenthetic. No parallel sound change has therefore been identified so far.

Like the scholars mentioned in the last paragraph, I propose to derive the Ge‘ez pronouns from the Proto-West-Semitic forms **huːʔa* and **hiːʔa* (for these reconstructions, see Suchard 2019: 211). In these grammatical words, initial **h-* was lost, followed by breaking of **uːʔa* and **iːʔa* to **wuʔa* and **yiʔa*.[9] These pronouns were suffixed with the pronominal elements *-tu* (masculine) and *-ti* (feminine) also seen elsewhere in Ge‘ez (cf. Leslau 2006: 569), e.g. in the singular proximal demonstratives *zə-n-tu* (masculine), *zat-ti* (feminine). These

9 Given the preservation of *h* in Tigre *hətu*, *həta*, and plural *hətom*, *hətan* (Elias 2014: 35), this loss of **h-* may have postdated the addition of *-tu* and related developments described below. Additionally, an anonymous reviewer of this paper notes that reconstructing the pronouns as **huʔa* and **hiʔa* (cf. Huehnergard 2019: 53), as may be supported by Classical Arabic *huwa* and *hiya*, allows for the arguably simpler changes **huʔa > *wuʔa* and **hiʔa > *yiʔa*, with **h* changing to an approximant matching the following vowel.

DOI 10.15460/auue.2023.96.1.296

developments closely resemble those proposed by Voigt (1987), but we will now depart from his suggestion.

Despite their shared accusative form *-tä* with short **a*, *-tu* and *-ti* probably go back to forms with long vowels, **-tuː* and **-tiː*. The feminine form can be connected with the Classical Arabic feminine proximal demonstrative *tiː*, which also occurs as a suffix on the relative pronoun *alla-tiː* (cf. the masculine *alla-ðiː*) and with additional elements following in the distal demonstratives *tiː-ka* (masculine *ðaː-ka*) and, with vowel shortening in a closed syllable, *ti-lka* (masculine *ðaː-lika*). Masculine **-tuː* in Ge‘ez then results from contamination between **tiː* and the nominative of the masculine demonstrative, **ðuː*. The generalization of **-tuː* for the masculine and **-tiː* for the feminine may well have been motivated by the same contrast in vowel quality seen in the personal pronouns **(h)uːʔa* and **(h)iːʔa*, which also functioned as distal demonstratives.

These considerations give us a reconstructed form **wuʔa-tuː* for the masculine nonaccusative. According to the assimilatory sound change seen in the *1ə2u3* verbal adjectives, this regularly yields **wuʔu-tuː* > *wəʾətu*. The *ə* vowel was then analogically introduced to the feminine at a time when the pronouns with and without suffixed *-tu*, *-ti* coexisted: **wəʾä* : *wəʾə-tu* = **yəʾä* : *yəʾə-ti*. The accusative *-tä* was analogically modeled after the numerals once **-u* and **-uː* had merged into *-u*: *śälästu* : *śälästä* = *wəʾətu* : *wəʾətä*.[10] Through one last analogy, this also allowed speakers to derive the feminine accusative form: **wəʾä* : *wəʾə-tä* = **yəʾä* : *yəʾə-tä*. After the more archaic forms **wəʾä* and **yəʾä* had been lost, this leaves us with the full attested paradigm: masculine *wəʾətu* (nonacc.), *wəʾətä* (acc.), feminine *yəʾəti* (nonacc.), *yəʾətä* (acc.).

The 0_1 verb

West Semitic distinguishes between three patterns in the G-stem verb, the basic verb class corresponding to the 0_1 stem in Ge‘ez (for a detailed overview, see Aro 1964). The original system may be best preserved in Classical Arabic, where we can distinguish between fientive, stative, and adjectival verbs. Each class of verbs has a distinctive

10 Brugnatelli (1982: 63), on the other hand, believes that this analogy operated in the opposite direction, maintaining case inflection in the numerals with *-tu* while it was lost in the feminine numerals ending in *-u*.

DOI 10.15460/auue.2023.96.1.296

pattern of vowels in the perfect and jussive (also in the imperfect in Central Semitic). This is illustrated in Table 1, where all forms are cited in the third person masculine singular. Note that there are two subclasses of fientive verbs and that phonologically conditioned variant forms are not indicated.

Table 1. Different G-stem verb classes in Classical Arabic

tense	**fientive *(u)*** *qtl* ‘to kill’	**fientive *(i)*** *srq* ‘to steal’	**stative** *lbs* ‘to wear’	**adjectival** *kbr* ‘to be great’
Perfect	*qat**a**la*	*sar**a**qa*	*lab**i**sa*	*kab**u**ra*
Jussive	*yaqt**u**l*	*yasr**i**q*	*yalb**a**s*	*yakb**u**r*

Together with the generalization of *ə* < **i* in the jussive prefix,[11] the normal Ge‘ez sound changes of **a* > *ä*, **i* and **u* > *ə* have yielded two main patterns. The two fientive paradigms have merged, as in *qätälä/yəqtəl*, *säräqä/yəsrəq*. In the perfect of the stative and adjectival verbs, **i/*u* > **ə* has been deleted; these classes have also merged, with the stative form of the jussive mostly winning out, as in *läbsä/yəlbäs*, *käbrä/yəkbär*. A relatively large number of verbs, however, show unexpected vowels. Some verbs are fientive in meaning but stative in form, like *gäbrä/yəgbär* ‘to do’. Others are stative in meaning but can be inflected either as statives or as fientives, like *tärfä/yəträf* besides *täräfä/yətrəf* ‘to remain’. Moreover, stative verbs show *ä* in the stem instead of expected *ə* when the ending starts with a consonant, which is in the first and second person: *läb**ä**s-ku* ‘I wear’, *läb**ä**s-kä* ‘you (m.sg.) wear’, etc. This resembles Philippi’s Law in Hebrew (cf. Suchard 2019: 141–67), but no such sound change can be seen elsewhere in Ge‘ez.[12] The mix-ups in verb class can be explained in part by the ambiguity in the imperfect, which is inflected the same for all classes: *yəqättəl* ‘he kills’, *yəläbbəs* ‘he wears’, *yəgäbbər* ‘he does’, *yətärrəf* ‘he remains’. But it is hard to see how this ambiguity in the entire imperfect paradigm would have resulted in the transfer of

11 This vowel occurred in the prefix of stative verbs, a distribution known as the Barth-Ginsberg Law (see recently Kossmann & Suchard 2018; Schachmon & Bar-Asher Siegal 2023). *A* has been generalized in Modern Standard Arabic and Classical Arabic as commonly taught at Western universities, but some varieties of Classical Arabic preserved *i* in the stative prefixes other than *ya-* (cf. Van Putten 2022: 36–38).

12 As Philippi’s Law only fully shifted **i* to a during a late, historically attested phase of Hebrew, the *ä* in *läbäskä* etc. and the *a* in *låḇåštå* etc. cannot simply be used to reconstruct Proto-West-Semitic **a* in these forms.

DOI 10.15460/auue.2023.96.1.296

just the first and second person forms from the fientive to the stative in the perfect.

In the third person masculine plural, both the fientive perfect **1a2a3u:* and the stative jussive **yi12a3u:* (also second person masculine plural **ti12a3u:*) present us with candidates for **aCu: > əCu* to operate. In the fientive perfect, this would have led to stem allomorphy, with the stem **1a2a3-* in most persons alternating with **1a2u3-u:* in the third person masculine plural. Many verbs will have reintroduced **a* to the third person masculine plural, restoring the inherited fientive paradigm. In verbs like *gbr*, however, **gabar-u: > *gabur-u:* seems to have extended **u* to other parts of the paradigm, specifically the rest of the third person: feminine plural **gabar-ā > > *gabur-ā*, masculine singular **gabar-a > > *gabur-a*, and feminine singular **gabar-at > > *gabur-at*. This would have resulted in the mixed paradigm attested in historical Ge‘ez; see Table 2. Based on the shared pattern in the third person forms like **gabur-a* ‘he did’ and *kabur-a* ‘he was great’, this mixed paradigm was extended first to the adjectival verbs, and after the merger of **u* and **i*, to the stative verbs.

Table 2. Developments leading to the stem alternation in some fientive and all stative verbs in Ge‘ez

meaning	1. Proto-West-Semitic	2. *aCu: > *uCu:	3. third person stem leveled	4. extension to adjectival verbs	5. extension to stative verbs
‘he killed’	*qatal-a	*qatal-a	*qatal-a	*qatal-a	qätäl-ä
‘I killed’	*qatal-ku	*qatal-ku	*qatal-ku	*qatal-ku	qätäl-ku
‘they killed’	*qatal-u:	*qatul-u:	*qatal-u:	*qatal-u:	qätäl-u
‘he did’	*gabar-a	*gabar-a	*gabur-a	*gabur-a	gäbr-ä
‘I did’	*gabar-ku	*gabar-ku	*gabar-ku	*gabar-ku	gäbär-ku
‘they did’	*gabar-u:	*gabur-u:	*gabur-u:	*gabur-u:	gäbr-u
‘he was great’	*kabur-a	*kabur-a	*kabur-a	*kabur-a	käbr-ä
‘I was great’	*kabur-ku	*kabur-ku	*kabur-ku	*kabar-ku	käbär-ku

DOI 10.15460/auue.2023.96.1.296

‘they were great’	*kabur-u:	*kabur-u:	*kabur-u:	*kabur-u:	käbr-u
‘he wore’	*labis-a	*labis-a	*labis-a	*labis-a	läbs-ä
‘I wore’	*labis-ku	*labis-ku	*labis-ku	*labis-ku	läbäs-ku
‘they wore’	*labis-u:	*labis-u:	*labis-u:	*labis-u:	läbs-u

Similarly, originally stative or adjectival forms like *yitrap-u:, *titrap-u: > *yitrup-u:, *titrup-u: could either have been brought back in line with the rest of the paradigm, resulting in an ordinary stative verb like *tärfä/yəträf*, or have triggered the morphological shift of the entire verb to the fientive paradigm, yielding forms like *täräfä/yətrəf*. Certain derived stem forms would also have undergone the change of *aCu: to *uCu:, such as the derived stem perfect forms like 0_2 *qaddasu: ‘they sanctified’ or 0_3 *ba:raku: ‘they blessed’, or jussive and imperfect forms with the passive-reflexive *t(a)-* prefix like T_1 *yitqatalu: ‘may they be killed’, *yitqattalu: ‘they are killed’. But here, this would not have caused any confusion with other paradigms where the *u was morphologically significant (as with 0_1 verbs), enabling the transfer to another inflectional class (like fientive *gabara* becoming formally stative *gäbrä*). Hence, paradigm pressure could easily have restored *a in such forms based on its retention in the other person, numbers, and gender forms. Thus, the *aCu: > *uCu: change explains some peculiarities of the Ge‘ez 0_1 verb, while its lack of traces in the derived stems makes good morphological sense.

Summary

Based on the change of *1a2u:3- > 1ə2u3* in the Ge‘ez verbal adjective, we have identified the same sound law *aCu: > əCu* in the personal pronoun *hu:ʔa-tu: > wəʾətu*, the originally fientive third person plural masculine perfect forms like *gabar-u: > gäbru*, and the originally stative jussive forms like *yitrap-u:, *titrap-u: > yətrəfu, tətrəfu*. The fact that this sound law did not operate on the *1ä2u3* numerals, together with cognate evidence, suggests that they should be reconstructed as *1a2u3-*, providing another context where *u was preserved as *u* besides the word-final context identified by Al-Jallad (2014). We have also identified this preservation of *u in word-final

DOI 10.15460/auue.2023.96.1.296

position in the nominative of the regular numerals used with masculine nouns like *ʾäḥäd-u* ‘one’, *śäläst-u* ‘three’, which should be reconstructed as diptotes.

Transcription and abbreviations

Ge‘ez is transcribed here according to the following conventions, based on those of Tropper (2002) with the exception of *ä* and *a* for the first and fourth order vowels, respectively (Tropper: *a*, *ā*). Phonetic realizations are given in the International Phonetic Alphabet (IPA) and should be taken as broad indications. On the transcriptions *wəʾətu*, *yəʾəti* as opposed to *wəʾtu*, *yəʾti*, cf. Bulakh (2016: 124–26).

Ge‘ez script (fidäl)	transcription	reconstructed pronunciation (early 1st millennium CE)	contemporary received pronunciation
ሀ	*h*	[h]	[h]
ለ	*l*	[l]	[l]
ሐ	*ḥ*	[ħ]	[h]
መ	*m*	[m]	[m]
ሠ	*ś*	[ɬ]	[s]
ረ	*r*	[r]	[r]
ሰ	*s*	[s]	[s]
ቀ	*q*	[k’]	[k’]
በ	*b*	[b]	[b], [β]
ተ	*t*	[t^h]	[t^h]
ኀ	*ḫ*	[χ]	[h]
ነ	*n*	[n]	[n]
አ	ʾ	[ʔ]	zero, [j]
ከ	*k*	[k^h]	[k^h]
ወ	*w*	[w]	[w]
ዐ	ʿ	[ʕ]	zero, [j]
ዘ	*z*	[z]	[z]
የ	*y*	[j]	[j]
ደ	*d*	[d]	[d]
ገ	*g*	[g]	[g]

DOI 10.15460/auue.2023.96.1.296

ጠ	*ṭ*	[tʼ]	[tʼ]
ጰ	*ṗ*	[pʼ]	[pʼ]
ጸ	*ṣ*	[sʼ]	[sʼ]
ፀ	*ś́*	[ɬʼ]	[sʼ]
ፈ	*f*	[f]	[f]
ፐ	*p*	[pʰ]	[pʰ]
1st order vowel	*ä*	[ɐ]	[ɛ], [a], [ɔ]
2nd order vowel	*u*	[uː]	[u]
3rd order vowel	*i*	[iː]	[i]
4th order vowel	*a*	[aː]	[a]
5th order vowel	*e*	[je]	[e]
6th order vowel	*ə*	[ɨ]	[ɨ], [i], [u]
7th order vowel	*o*	[wo]	[o]

Transcriptions of other Semitic languages follow established systems (e.g. Lettinga 2012 for Biblical Hebrew), sometimes modified to more closely approximate the IPA. Reconstructed proto-forms and proto-phonemes are marked with an *asterisk while hypothetical forms that contradict actually attested forms are marked with **two asterisks.

Abbreviations

acc.	accusative
f.	feminine
m.	masculine
nonacc.	nonaccusative
nom.	nominative
pl.	plural
sg.	singular

DOI 10.15460/auue.2023.96.1.296

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