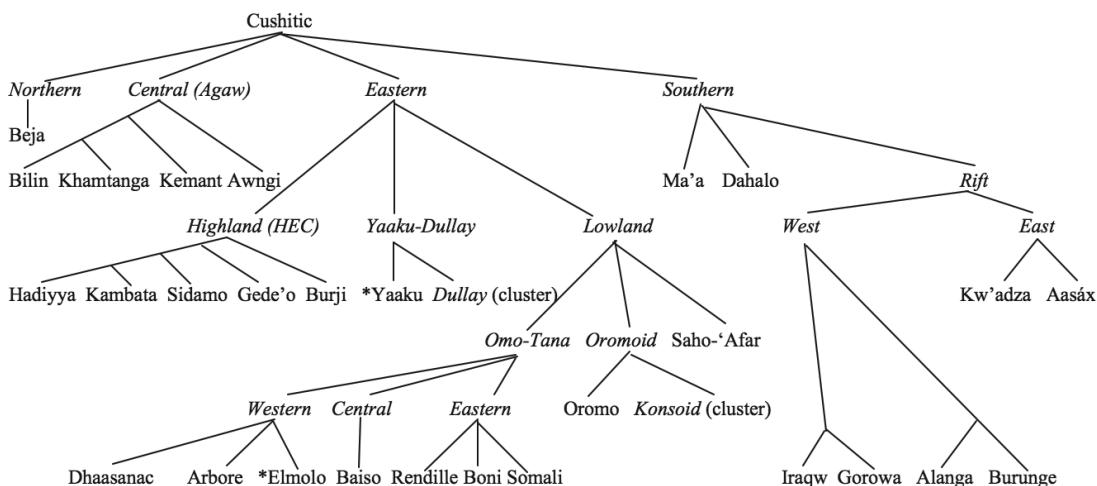# Coronal Ejectives and EthioSemitic Borrowing in Proto-Agaw

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1. Cushitic and Agaw Background

Although there is some controversy surrounding the exact composition and internal relations of the Cushitic languages, the consensus view (Hayward 2000, Tosco 2000, Mous 2012) is that they are organized into four main branches: Northern, Central, Eastern, and Southern, as indicated in the diagram below (after Tosco 2000[1]):

(1)   Cushitic Stammbaum

```
                              Cushitic
        ┌──────────┬──────────────┴─────────────────────┐
   Northern   Central (Agaw)      Eastern                        Southern
     │        ┌───┬───┬───┐       ┌──┴──────┐              ┌────┴────┐
    Beja      │   │   │   │       │         │            Ma'a  Dahalo    Rift
         Bilin Khamtanga Kemant Awngi                                  ┌──┴──┐
                      Highland (HEC) Yaaku-Dullay  Lowland        West     East
                                                                           Kw'adza Aasáx
   Hadiyya Kambata Sidamo Gede'o Burji  *Yaaku  Dullay (cluster)
                                        Omo-Tana  Oromoid  Saho-'Afar
                                                  Oromo  Konsoid (cluster)
                        Western Central  Eastern
              Dhaasanac  Arbore *Elmolo Baiso Rendille Boni Somali
                                                          Iraqw Gorowa Alanga Burunge
```

The historical reconstruction of these various branches of Cushitic is, to quote Mous, "very much 'in progress'" (2012:347). Beja, the sole representative of the Northern branch, has fragments of a topical lexicon (Blažek 2003, 2005), with some comparative work (Blažek 2007). Within the Eastern branch, Hudson (1986) has reconstructed the Highland East Cushitic (HEC) lexicon; Lowland East Cushitic (LEC) has been treated by Black (1974); Proto-Sam (the Eastern group of Omo-Tana) has been reconstructed by Heine (1979); other important reconstructions of Eastern Cushitic include Sasse (1979) and Arvanites (1991). Southern Cushitic (SC) has been reconstructed by Ehret (1980) and Takács (2011), while the West Rift branch of Southern Cushitic has been the focus of Kießling (2002) and Kießling & Mous (2003). The Agaw languages have been reconstructed in their phonology
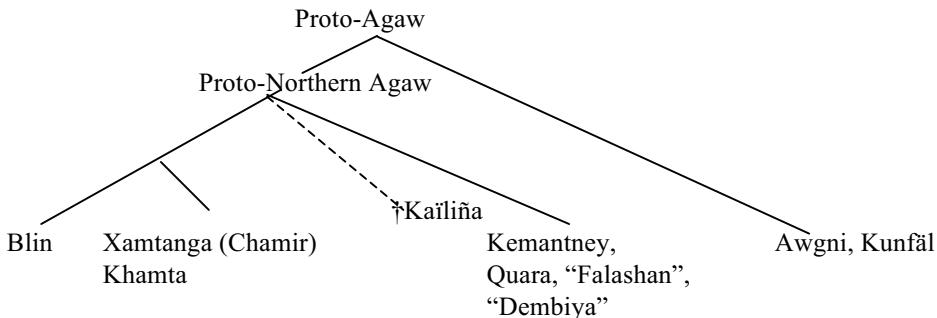
[1] The asterisks indicate extinct languages; italics indicate language groupings.

(Appleyard 1984, 1991), morphology (e.g. Appleyard 1988) and most recently, the lexicon (Appleyard 2006). Reconstruction of Proto-Cushitic (PC) as a whole is found in the pioneering work of Dolgopol'skij (1973) and in Ehret (1987). Within Proto-Afroasiatic (PAA) reconstruction, PC may be examined in Ehret (1995); Orel & Stolbova (1995) provide some "tentative and highly hypothetical" reconstructions of branches of Cushitic, but do not attempt to reconstruct the family as a whole.

This paper is concerned with details of the reconstruction of the Agaw branch, which contains four main languages plus one extinct (Appleyard 2006, Lewis, Simons & Fennig 2013). Appleyard groups them into two main branches: Northern, which contains Blin, Xamtanga, and Kemantney; and Southern, represented by Awngi. Blin, also known in the literature as Bilin, Bɨlin, or Bilen, is the preferred native-speaker spelling, and is spoken by around 100,000 speakers centered around Keren, in the 'Anseba region, Eritrea. It has two dialects, Tä'akʷ'ər (Takʷ'ər) and Tärk'ekʷ'ər, which are very similar except for a small number of lexical items and morphological differences. The remaining Agaw languages are or were spoken in Ethiopia. Xamtanga (Khamtanga, Chamir) is spoken by 213,000 speakers in the Wag region. Kaïliña is a variety formerly spoken by Ethiopian Jews in the Səmen region. Kemantney (Kemant, Kimant, Qimant) is spoken by 1,650 people in the regions of Čəlga and Kärkär. A dialect known as Dämbiya (Dembiya) was formerly spoken along the north shore of Lake T'ana. A closely related, moribund dialect spoken by the Betä Isra'el is known as Falashan or Quara/Quarenya/Qwarenya. Awngi (Awiya, Southern Agaw) is spoken by 489,000 in the Agäwmədər and Mätäkkäl districts. A closely related variety known as Kunfäl is spoken by some 2,000 people in the lowlands west of Lake T'ana. The composition of the Agaw languages is depicted below:

(2)   The Agaw (Central Cushitic) Languages (Appleyard 2006:4)

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                            Proto-Agaw
              Proto-Northern Agaw
                                †Kaïliña
   Blin   Xamtanga (Chamir)          Kemantney,              Awgni, Kunfäl
          Khamta                     Quara, "Falashan",
                                     "Dembiya"
```

Given the paucity of materials in the historical reconstruction of Cushitic, Appleyard's (2006) comparative dictionary is a very welcome addition to the field. The dictionary has 720 English headword entries and 391 reconstructed roots, with appendices containing word lists of the reconstructions and the primary language data in Blin, Xamtanga, Kemantney, and Awngi. Furthermore, much of the language data, especially forms from Xamtanga and Kemantney (along with some corroboratory forms from Blin, Qwarenya, Awngi), are from Appleyard's own fieldwork (2006:10). Appleyard's work has been well received (Joswig 2008). Nevertheless, this paper will take issue with one aspect of Appleyard's reconstruction–his postulation that Proto-Agaw did not have ejective consonants (although they are required for the reconstruction of both PC and PAA, and despite the fact that ejectives are present in some Agaw languages).

2. Agaw History and Appleyard's Reconstruction of Proto-Agaw

The history of the Agaw, who, according to Appleyard (2006:1), were probably the original population of much of the highland region of northern and central Ethiopia, has been intertwined with their Semitic-speaking neighbors for twenty-four centuries (Taddesse 1988:6). Appleyard (1978) has traced the linguistic influence of Agaw on Ge'ez lexicon, and detected some morphosyntactic influences as well. Leslau (1988, 1991) has also examined the lexical borrowings between

EthioSemitic and Cushitic languages. Agaw is thus "the deepest-level and major linguistic substratum of Tigrinya and Amharic" (Appleyard 2006:1; see also Hetzron 1976:5). Some Agaw assimilation to their Semitic-speaking neighbors may have begun as much as a millenium before the rise of the Aksumite kingdom. It culminated with the Zagwe dynasty (1137-1270 A.D.); Zagwe, from Zä-Agwe, is said to mean 'of the Agaw' (Appleyard 2006:2). During this time, "borrowing of Agaw words by northern Ethiopian Semites would naturally have been expected" (Hudson 1994:1261). Indeed, in Gragg's (1991) count of Leslau (1991), there is a significantly higher percentage of Agaw words that are, in Leslau's view, borrowed (32%) than which share a common origin (24%), unlike every other source of borrowings in Ge'ez. In Gragg's calculations, there are 219 Agaw borrowings in Ge'ez[2].

Before summarizing Appleyard's reconstruction, it will be instructive to compare the phonemic inventories of the Agaw languages: Blin (Palmer 1960); Xamtanga (Appleyard 1987); Kemantney (Appleyard 1975, Zelealem 2003); Awngi (Hetzron 1997). Of course, determining a phonemic inventory can be difficult when there are loanwords, but these sources give the following phoneme inventories:

(3)   Obstruent Phonemic Inventories of Central Cushitic

Blin	t	k kʷ	ʔ b d	dʒ	g gʷ **t' tʃ' k' kʷ'**	f s ʃ x xʷ ħ h		ʕ
Xamtanga	t	tʃ k kʷ q qʷ b d			g gʷ **t' tʃ' k' kʷ' s'**	f s ʃ x xʷ	h z	
Kemantney	t	tʃ k kʷ b d		dʒ	g gʷ **t' tʃ' k'**	f s ʃ x xʷ		ɣ ɣʷ
Awngi	p t ts tʃ k kʷ q qʷ b d dz				g gʷ	f s ʃ	z ʒ ɣ ɣʷ	

Note that three of the four Agaw languages (all but Awngi) contain ejectives, in boldface in (3) above. Kemantney contains /t' tʃ' k'/, Blin contains /t' tʃ' k' kʷ'/, and Xamtanga contains /t' tʃ' k' kʷ' s'/. Yet Appleyard claims that "most of the occurrences of glottalized consonants in Agaw languages can be explained as contact features, most obviously because they occur in borrowings" (2006:17). Appleyard nevertheless admits that both Blin and Xamtanga have ejectives in "lexemes of indubitable Agaw origin" (2006:17). Further, ejectives are "part of the reconstructable Proto-Cushitic phoneme inventory and thus at some point in the prehistory of Agaw must have been present" (2006:18). But because he believes they are (almost all) the result of borrowings, he does not reconstruct ejectives in PA. To summarize Appleyard's view, all Agaw languages descend from a PA stage in which ejection was lost. The presence of ejection in Agaw languages can virtually always be attributed to EthioSemitic borrowing, or more recent, language-internal developments.

Appleyard dismisses velar ejectives in Blin as a "comparatively recent development" based on allophonic variation with *q* (the presumably older original articulation), and free variation with glottal stop (the result of debuccalization, analyzed in Fallon 2001). Fallon (2009) presented evidence for the reconstruction of velar ejectives in Agaw based on evidence from 25 cognates in Cushitic languages which could not been seen as loanwords. Appleyard concedes a small number of Agaw lexemes with reflexes in Blin of *č'* and *t'*. In Xamtanga, there is greater occurrence of glottalization than in Blin. Xamtanga does contain minimal pairs involving ejectives, e.g. *k'äbu* 'he cut' vs. *käbu* 'he helped'; *č'ɨŋu* 'he called' vs. *čɨŋu* 'he found', among others (Appleyard 1987:248). Appleyard observes that Xamtanga has many instances of free variation (e.g. *s'əb- ~ səb[b]-* 'live'), especially when his data is compared with older data collected by Leo Reinisch. In short, ejection in Xamtanga is both phonemically contrastive and in many pairs of words, non-contrastive.

The reconstructed obstruent inventory Appleyard proposes is as follows[3]:

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[2] The highest absolute number of loans in Leslau (1991) is 345 from East Cushitic (but 23% "borrowed" vs. 42% "common").

[3] Appleyard [c] = IPA [ts]; [ʒ] =[dz] (both identified as a pair of alveolar affricates 2006:14); [č] = IPA [tʃ]; [ɣ] = [ɢ]; [y] = [j]. For vowels, Appleyard's [ə] = [ɨ] and [ä] = [ə].

(4)   Obstruent Inventory of Proto-Agaw (Appleyard 2006:13, 11)

	*t	*ts	*tʃ	*k	*kʷ	*q	*qʷ	*ʔ
*b	*d	*dz		*g	*gʷ	*ɢ	*ɢʷ	
*f	*s							
	*z							

In short, the obstruent consonants of Proto-Agaw had only a simple voice contrast in a fairly symmetrical stop system with six places of articulation and with dorsal consonants showing a plain and labialized contrast. There were three affricates, and three fricatives, one of which was voiced.

The changes required by such a reconstruction require several steps from Proto-Agaw to the daughter languages. I schematize the changes required from PC to PA in Appleyard's view:

(5)   Steps of Phonological Change in Agaw Ejectives According to Appleyard
        a. Proto-Cushitic ejectives > Pre-Proto-Agaw ejectives
        b. Loss of Ejectives from Pre-Proto-Agaw > Proto-Agaw
                1) complete loss in Awngi and Kemantney (and possibly all Agaw languages)
                2) perhaps partial loss in Blin and Xamtanga
        d. Reintroduction of ejectives through borrowing from EthioSemitic, and in certain cases, in
                some languages,from allophonic shifts or independent free variation

It is undeniable that since Awngi (Joswig 2010) and Kemantney (Zelealem 2003) have no ejectives in native words, a rule encompassing (5b1) must be necessary. What is disputed here is whether this rule also applied to Blin and Xamtanga, and whether Proto-Agaw therefore may have had ejectives. As one anonymous reviewer noted, 'Appleyard has perhaps intentionally left some vagueness concerning whether all Agaw ejectives can be attributed to borrowing.' To quote Appleyard, 'It is clear that *most* of the occurrences of glottalized consonants can be explained as contact features, most obviously because they occur in borrowings' (2006:17, emphasis added). He continues: 'However, the situation is not as simple as this in Bilin and Xamtanga, where glottalized consonants occure in lexemes of indubitable Agaw origin' (17).

The most explicit statement of the historical phonological rules in Agaw may be found in Ehret (2008:155-156), who essentially agrees with Appleyard's analysis and fleshes it out, but adds some details to fit with his own reconstruction of PC, which, I should note, is often regarded as 'vulnerable' on many points (Takács 2011:16). Ehret has formalized the stages of change as the following rules:

(6)   Ehret's Sound Changes from PC to Agaw
        1. PC *k$^{(w)}$' > pre-Agaw *q$^{(w)}$
        2. PC *p' > pre-Agaw *ɓ
        3. PC *t' > pre-Agaw *ts'
        4. *[+glottal/-lateral] > pre-Agaw *[-glottal/-lateral]
                a. pre-Agaw *ɓ> PA *b
                b. pre-Agaw *ts' > PA *ts
                PC *c' > PA *c.
        5. PC [+lateral/+obstruent] > pre-Agaw [-lateral][4]
                a. PC *dl > PA *d
                b. PC *tl' > pre-Agaw *t'
        6. pre-Agaw *t' > *t ~ *t'
        7. pre-Agaw *q$^{(w)}$ > PA *qʷ ~ *ɣ$^{(w)}$ ~ *x$^{(w)}$

Among the additions to Appleyard's conception (5) that are postulated by Ehret in (6) are, steps 1-3 from PC to pre-Agaw: (1) the shift from PC velar ejective place to uvular plosive in a pre-Agaw stage; (2) the shift from bilabial ejective to bilabial implosive; and (3) the affrication of PC *t'. Step 4

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[4] Ehret (2008:156) states this change as to pre-Agaw [-continuant, +obstruent], but since the laterally released affricates lose that feature, I have rewritten this rule more simply.

of (6) above is roughly what Appleyard supposes: loss of the phonological feature [+glottal] (or [+constricted glottis]). Step 5 is required by Ehret's understanding of PC, though 5b introduces in the pre-Agaw stage a new ejective which later undergoes free variation in 6 to explain Agaw variation among the labialized uvular and the voiced and voiceless (labialized) velar spirants.

In the following section, we will examine some of the evidence in Appleyard (2006) in which the Agaw languages contain coronal ejectives which he does not reconstruct in PA. We will then compare Leslau's opinions and other sources on Cushitic languages to weigh the likelihood of borrowing or whether the form might be reconstructed with a coronal. Leslau (1988:63) notes that the most obvious loanwords are those in Blin that come from Tigre, which often shows a form different from other EthioSemitic languages. For example, Ethiopic *ləssān* 'tongue' is *nəssal* in Tigre and *näsäla* in Blin[5]. Ethiopic *bṭḥ* 'make an incision' is *bälṭəḥa* and *bälṭeḥ* in Tigre and Blin, respectively. Where possible, I will report possible Cushitic cognates that have either been reported in the literature or which I suggest here.

3. Analysis of Proto-Agaw (PA) Coronal Ejectives[6]
3.1. Evidence for PA *t'[7]
3.1.1. t' in Initial Position

Here follow a list of Agaw forms which provide evidence for possible Proto-Agaw forms with word- or root-initial ejective *t'. The precise Agaw language is given after the gloss.

1. *t'af*   'teff, *poa abyssinica*' (Bl. t'af). PHEC *t'aafe*. Perhaps a Wanderwort. Leslau (1991) has Ethiopic Te.,Tna. *ṭaf*, Amh. *ṭef*, etc. Cushitic Ṭem *ṭāfa*, Or. *ṭāfī*, Bl. *ṭaba*, (coll. *ṭāf*), Khamir. *dāb*, *tāb*, Sa. Af. *dāfī*. See also Blench (2012), who notes that Ehret believes the word is Cushitic in origin.

2. *ṭām*   'taste good' (Bl., Leslau) (though Ap. cites another Bl. form with *tam*; Reinisch's data shows both as alternates). Gz. *ṭəʕma* 'be tasty'. In this instance, Leslau (1988:81) classifies this as a loan which 'passed into Cushitic', via Tna. *ṭä'amä.* Leslau cites Ar. *ṭa'ima* 'taste'. However, he also cites Or. *čāmī* 'flavor'. In Leslau (1991:583) we see added a Ge. form which appears to be *ṭeᵖme* 'taste good' (cf. what must be the same root *t'e'm-* 'taste good, be sweet' in Hudson (1989:263)) and Sa. *ṭaʕam*. Dolgopolsky (1983:131) considers it common with Cush. Appleyard (2006:132-133) considers the PNA root **tam-* probably from EthSem, (especially, as a reviewer notes, given the proximity of Agaw to the EthSem semantics), but Appleyard notes similar forms, with broader semantics which mean 'taste, drink, eat' in Cushitic. He cites Or. *d'and'am-* 'taste', Som. *d'am-* 'drink milk or blood', Bayso *t'am-* 'drink', Af. *taam-* 'taste', Dahalo *tem-*, Beja *tam-* 'eat', as well as a number of Omotic forms, many with initial alveolar ejective or glottalic sound. The preponderance of the evidence therefore suggests this root to be not only of Agaw, but Cushitic and possibly Afroasiatic origin.

3. *t'arī*   'loin' (Bl.). Compare Gz. *ṣərʕe* 'large intestine', *s'arā't* 'loins'. Leslau (1988:86) classifies this as 'borrowed from Cushitic', citing Or. *dira*, Sa. *ḍirō, ḍilō*, Som. *ḍina*; also see Leslau 1991:563). Perhaps cf. Ap.'s PA **ʒər* (= **d͡zɨr*) 'intestines' (2006:87-88), though the initial consonant does not show ejection.

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[5] A sharp-eyed anonymous reviewer caught a contradiction in Leslau's (1988) data in which 'tongue' is given as *näsäla* in Tigre and in *nəssal* in Blin on p. 68, but as *nəssal* in Tigre and *näsälä* in Blin on p. 69.

[6] A =Agaw, Ap. = Appleyard, Af. = Afar, Amh. = Amharic, Ar. = Arabic, Awn. = Awngi, Bl. = Blin, Bu. = Burji, CRo. = Conti Rossini's data, Dem. = Dembiya, EthSem = EthioSemitic, Ge. = Gedeo, Gz. = Ge'ez, Ǧan = Janjero, Ka. = Kambata, Kem. = Kemantney, Kham. = Khamta, L = Leslau 1991, L88 = Leslau 1988, Or. = Oromo, PA = Proto-Agaw, PEC = Proto-East Cushitic, PNA = Proto-Northern Agaw, PS = Proto-Semitic, Re. = Leo Reinisch's data, Qab. = Qabenna, Qu. = Quara, Sa. = Saho, Si. = Sidamo, Som. = Somali, Te. = Tigre, Tna. = Tigrinya, Ṭem = Ṭembaro (Kembaata), Xam. = Xamir, Xamt. = Xamtanga.

[7] Transcription follows the source whenever possible. Note that ejective t' is also transcribed as ṭ.

4. *tä\ʕamb-*   'hit' Bl., with cognates in Re. Chamir *t'ab-/tab*, Qu. *tamb-*. Elsewhere in Agaw, we see semantically similar forms with similar but different roots: Kaïliña *t'az-*, Kham. *t'āz-*, Xam. *taz-/t'az-*. Kem. *tay-* and Awn. *tas-* give Ap.'s PA **tax-[s-/z-]*, with extended stems in Xamt. and Awn. If correct, Ap. says to compare PEC **-tak'/-tuk'* (2006:84), with final velar ejective consonant, but initial voiceless alveolar, along with forms in EC for 'strike', 'touch', 'push', break' (all without initial ejection). Ap. offers no EthSem cognate to account for the ejection in Bl., Chamir, Kaïliña, Kham. and Xam. Leslau (1988:102) believes such verbs in Cushitic are "common with Ethiopian-Semitic"–in other words, of common Afroasiatic descent. He cites Kham. *t'ab* 'hit', and compares Be. *ṭib* 'hit' (Beja has no ejection, but *ṭ* is a retroflex which often corresponds to EC), Som. *tib* 'stick' (Som. has no ejection) and compares the following Semitic forms: Gz. *ṭabṭaba* 'whip, lash'; Amh. *ṭäbäṭṭäbä* 'whip'; Ar. *ṭabṭāba* 'stick'. Cf. Or. *d'a?a* 'hit' (*d'* = implosive or retroflex) (Hudson 1989: 80). Blažek (2007:129) compares EC **ḍaʕ-* > Arbore *ḍe?-* 'to throw', where the implosive (Hayward 1984:53) is traced to a PEC glottalic **d* (Arvanites 1991).

5. *t'aʕ y-*   'drive (animals)' (Bl.), which also has the form *tät y-*. Other Agaw forms are apparently unrelated. But no EthSem etymon is offered. Gz. *nad?a* 'drive, drive away, lead, lead off' etc. seems unrelated (L385) and I can find no plausible candidates in Leslau (1988). Hudson (2013:217), however, offers Arabic *ṭay* 'goat', s. 'sheep' and other EthSem forms referring to animals.

6. *t'əf y-*   'spit' Bl., Xam. *təf y-*, PNA **təf-*. Ap. notes similar forms: *tuf-* in Or., Som., HEC, Saho, etc. He compares EthSem., Amh. *täffa*, etc. Perhaps these forms are onomatopoetic, but there is no evidence that the Bl. form has borrrowed the ejection from EthSem. Regarding Gz. *taf'a* and Tna. *täf'e* in Leslau (1988:90), it is conceivable that ejection transferred from the glottal stop to the initial stop. Leslau also notes the Bl. form *täffo*. Ehret (1995 #162) reconstructs PC **tuf-*.

7. *t'ibb y-*   'trickle' (Bl.) Gz. *t'bt'b, ?ant'abt'aba* 'drip, fall drop by drop'. Also in Cush. Sa. *ṭobb ya* (L587); Tna. *ṭubb bälä* 'drip', Amh. *(tän)ṭäbaṭṭäbä*; related to Heb. *ṭippā* 'drop of liquid'. Cf. Ehret Bl. *t'əbb-* 'to fall in drops, drip out', Dullay **d'ib-* 'to rain'. Blažek compares Beja *ṭakw-* 'to drip, let fall drops' with EC Bu. *ṭokk-* 'to leak', Hadiyya *tok* (2007:129).

8. *t'iyā*   'smoke' (Chamir). According to Appleyard (2006:126) this form is from PA **təz-* (Bl. *təda*, Xam. *təya*, Kem. *təxza,* Awngi *tišĩ*). Ap. believes the word is borrowed *into* EthSem., Gz. Tna *t'is*, Amh. *čəs* etc. Khamta *t'īs* is said to be a reborrowing from Tna. *t'is*. Leslau (1988:88) classifies Gz. *ṭys, ṭesa* 'smoke' as coming from Cushitic, specifically citing Aw. *tisā*, Bl. *tida*, Qem. *toḥsā*, forms which curiously *lack* the ejective. Ehret (1987: 157 number 348) gives PA **t'iz-* 'smoke', PC **tlaz-/tliz-* 'cloud'. Perhaps compare Ehret (1995 #242) Dahalo *t'òggʷa* 'smoke'.

3.1.2. t' in Medial Position

9. *?anbät'a*   'locust' (Bl.), Xam. *abta*, Kham. *abt'a*, Kem. *ambəya*, Aw. *anbití*. Ap. believes this to be from EthSem.: Gz. *?anbat'ā*, Tna. *?anbät'a*, Amh. *anbät'a*. Ap notes that the sound changes *t' > t > y* in Kem. (Qu. *idem*) suggest an ancient borrowing. Leslau (1991:27) suggests this may be a loan *from* Cushitic; Leslau (1988:84) states that the direction of the loan could be 'the other way around'.

10. *?ənt'är-*   'hate' (Bl.), Qu. *əntar-*. Ap states Bl. *t'* is normally indicative of a loan, but provides no EthSem. forms. Perhaps cf. Gz. *ṣal?a*, Amh., Argobba *t'älla*. The Te. form for 'hate' listed in Nakano & Tsuge (1982 #692) is the unrelated *karha*. No form for 'hate' or 'dislike' is listed in Beaton & Paul. This form may be a very good candidate for a native Agaw root.

11. *bit'a*   'yellow' (Bl.) Xam. *bəs'a*, Kem. *bəč'a* (L adds Kham *beč̌ä* 'be yellow'). Ap. says the form is from. EthSem., Gz. *bes'a* 'become white, yellow';, Tna. *bäyyäs'ä*, *bič'a* 'yellow', Amh. *bəč'a.* Leslau (1991:116) notes this form is 'also in Cushitic', citing the Kham. form above, and comparing Ar. *bāḍ (byḍ)* 'grow yellow'; Te. *bäyyäṣa* 'be bright'.

12. *fənt'ira*   'goat' (Bl.), Xam. *fəč'əra*, Kem. *fəntära*, CRo Khamta has *fik'rä*. Ap. says Awn. *fiyéĺi* is probably a borrowing from Amh. *fəyäl* (A). Ap. reconstructs PNA **fənt∇r-a*[8]. The word is probably not borrowed–cf. Ge'ez *t'ali* 'goat'; Ap. acknowledges this is a probable native Agaw root. I am unable to determine whether it is monomorphemic. Cf. in Leslau (1988:85) Gz. *wayt'al* 'kind of wild she-goat', Amh. *wäyt'al* < Af. *wayḷaḷe*. He believes Gz. *t'ali* 'goat', Gur. *t'ay* > Awn. *tay*. Cf. Te. Tna. *t'el* and Heb. *t'āḷẹ*.

13. *hint'an*   'be thin, weak, delicate' (Bl.), Kham. *iet'in, et'in*. Gz. *ḥt't', ḥat'ta, ḥat'ata* 'be small' *ḥət't'ənat* 'subtlety, acuteness'; Te.Tna. *ḥant'ät* 'little child' from *ḥt'(t')* with augmented *n*. (L1991: 269). Leslau (1988:98) classifies this as 'also in'. Since forms are in both Bl. and Kham., and the semantics are broad, I find the loan to be less likely, especially with Bl. *h* whereas EthSem has *ḥ*.

14. *kʷət'a*   'wet' (adj.) (Bl.), Xam. *qʷət'ən*, Kem. *xʷätäni*, PNA **qʷət-*. X, K forms are derived from a verbal noun. Compare adj. Bu. *k'oc'e* (e-g m), *k'oč'ee* (Hudson 1989:166). Ehret (1987:637) cites Bl. *qʷət'-*, Xamir *qʷət'-*.

15. *kʷət'ana*   Bl. 'green, unripe' derived from root for 'wet' (see 3.1.2 #14 immediately above).

3.1.3. t' in Final Position

16. *bät' y-*   'be spread out' (Bl.). Occurs in Te. *bät' bela*, Tna. *bät't' bälä* 'lie down, stretch out'. Ehret 1987 compares *bat'-* 'to be stretched out, stretch, gape, have a split or crack' with Beja (Reinisch) *beday* 'to yawn', PEC Hadiya *bačč-* 'einen Wald ausholzen' ('to cut down a forest'). L notes Gz. *bat'a't'a* I 'lie on the stomach' and compares it as 'also in' Cushitic: Sa. *bat' ḍah* (L114); Tna *bät't' bälä* 'lie down'; Ar. *bat't'ata* 'flatten'.

17. *gət'*   'vagina' (Bl.) (Lamberti & Tonelli 1997:91). Re records Bl. *git', k'it'* 'vulva'. (Ap. notes perhaps Amh. *k'it'* 'vulva' is a loan from Agaw). Xam. *jət'* , Kem. *gət'* 'backside, anus'. Ehret (1987 #635) proposes PA **gət'* 'backside, anus' (Bl.). PSom.-II **gid* 'body', Rendille *jid* 'flesh', though Ap calls the semantics weak. Nakano & Tsuge (1982 #92) record the Te. form *gant'ira:y* 'clitoris'. This Te. form is unusual, with a possibly epenthetic nasal. The form still may have originally been Agaw, and Te. derived it from Bl. or some other EthSem. language.

3.1.4. Probable Borrowings Containing Agaw t'

1. *ʔənt'at'iʕ*   'flax, linseed' (Bl.) Ap. states the form is from Te. or Tna. *ʔənt'at'iʕ* (also given as *ant'at'i'* in Kane (2000:1497).

2. *ʔənfit'*   'snot, nasal mucus' (Bl.), cited also in Kiflemariam & Paulos (1992:46). (Ap. compares Amh. *nift'*). Leslau (1988:89) lists this as 'common in Semitic, Ethiopic, and Cushitic': Gz. *'anf* 'nose, nostril': Ar. *'anf*, Tna. *'anfi*; Kham. *imfu ye* 'blow the nose'. Such forms do not have the alveolar ejective in question, which is cited only in Amharic. Kane gives Tna. *ənfit' bälä* 'to blow one's nose' (2000: 1499).

3. *gʷət'ən*   'cotton' (Bl.) < Arabic *qut'un*. Whether Bl. ejectives regularly correspond to Arabic emphatics in loanwords requires further investigation.

4. *ħat'ši y-*   'sneeze' (Bl.), Xam. *ənt'əš y-*, Kem. *nät'äš-*. EthSem., Te. *ħat'äšä*, Tna. *ħant'äšä*, Amh. *anät't'äšä* etc. Note possible onomatopoeia.

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[8] Appleyard uses the symbol ∇ to indicate an indeterminate vowel.

5. *ħəbət'* — 'armpit' (Bl., Ap. 2006:171), presumed native. Te. of Beaton & Paul (1954:45) lists similar forms without the final ejective: *hibet/habetaa, haabaat.* However, Nakano & Tsuge (1982:8, #51) do list the form *ḥibit'* for 'armpit', making this a probable loan from EthSem. The presence of a Bl. voiceless pharyngeal fricative frequently indicates a loan from EthSem as well.

6. *k'älät'-* — 'peel' (Bl.) from EthSem., Ti. *k'ält'a.* Perhaps cf. Amh. *lat'ä.*

7. *k'ät'ʔ-* — 'punish' (Bl.), Xam. *k'äs'a-,* Kem. *k'ät'-,* Aw. *kicʸ-* (cf. Amh *qätt'a,* Tigrinya *qäṣ'ē* Kane 2000:1064).

8. *šäwät'-* — 'thresh' (Bl.) is from Ti. *šäwwät'ä* according to Ap. (2006:137).

9. *səmət'* — 'rib(s), side of body' (Bl.). Leslau (1991:503) cites Gz. *səmat'* 'loins, flank, waist' and notes this is also in Bl. *šimiṭ, simiṭ.* Leslau (1988:94) lists Gz. *səmaṭ* 'loin, flank' and gives Tna. *šämṭi* 'waist', Amh. *šənṭ.* The Bl. plural *ʔäsmat'* suggests borrowing from Te. *ʔäsmat* (Littman & Höfner 1962:175).

10. *t'it'* — 'cotton' (Xam.). EthSem. Tna *t'ut',* Amh. *t'ət'* 'cotton' borrowed into PA **tət-,* yielding Bl. *tət,* Kem. *təya,* Aw. *tə́tí* with later reborrowing in Xam. *t'it'* (though Ap. also believes ejection in Xam. to be a recent phenomenon, given older forms in Reinisch which lack ejection. (Cf. also Arabic *ṭuṭ* 'cotton' in Leslau 1988:68).

11. *wät'än-* — 'try' (Bl.) is from Ti. *wät'nä* according to Ap. Other Agaw words are not cognate.

This list is not exhaustive, but gives the reader an idea of the range and types of forms in Appleyard (2006) which I agree are highly likely to be loanwords from EthioSemitic.

3.2. Evidence for PA *č'

3.2.1. *č'* in Initial Position

1. *č'agā* — 'flower' (Bl., L551; L88:86). Kham. *s'iyā̆,* Chamir (Re). *siyā̆,* Qu. *çegā/šegā* from EthSem., Gz. *s'əgge* (Ap. 2006:70). L notes Gz. *ṣagaya* 'bloom, blossom, flower, burst open' is from Cush. Dem. *s'egē,* (so also Cohen 1947, Brockleman 1950). But Ap. believes this is from EthSem.

2. *č'ak'uta* — 'chick, fledgling' (Bl.), Khamta *č'āč'utā́n,* Kem., Qu. *šašuna.* Ap. says these are cognate with EthSem., Ti. *č'aač'ut,* Tna. *č'axʷət,* Amh. *č'ač'ut.* Yet he notes 'similar forms occur elsewhere in Cushitic: Saho *č'aač'utta,* Or. *č'uč'oo, č'uč'ii,* Bu. *c'iwʔe,* Hadiyya *č'iič'oola,* Sidamo *č'aač'č'urre,* Gidole *č'aač'uuet.*' Agreeing with Sasse (1982:50), Ap. believes the word is probably of an onomatopoetic nature. While this is perhaps the case, the broad distribution in Cushitic undermines the case that this is an EthSem. loan.

3. *č'aʕəd-axʷ* — 'white' (Bl.), Xam. *s'ar-äw,* Khamta *ṣar-òw,* Kaïliña *s'äy-aq̄,* Kem. *šay-aɣ.* PNA **caR-* related to Bl. Ap. notes "the intial *č'* and certainly the medial *ʕ* are normally indicative of a borrowing from EthSem., and indeed there are clearly cognate forms in Gz. *s'āʕdawa* 'be white', *s'āʕdā̆* 'white', Tna. *s'aʔdäwä.* The EthSem. root is however probably itself of Cush. origin [Dolgopolsky 1973:118; Leslau 1991:542-3], though the apparent EC. cognate does not have the sibilant initial." Perhaps we can compare Bu. *t'uda.*

4. *č'äbbär-* — 'wait for, expect' (Bl.). Compare this with *s'əb* in X. 'stay, wait' (Ap. 2006:129). This is possibly connected to Ehret (1987:40 #135) PC **c'eb-* or **c'ep-* 'to watch', for which he cites Re. Beja *šebib* 'to see, view' and Yaaku *-c'ɛpa-* 'to wait'.

5. *č'äffär-* — 'sing' (Bl.) Ap. says this is from Tna. *čäffärä* (see Kane 2000:2533). Perhaps related are Bu. *shibir,* Ge *sirb-,* Si *sirb-,* PHEC **sibir* (Hudson 1989:135).

6. *č'əmbəʕrora* — 'thumb' (Bl.) Si. *lowo k'ubb-icco* ('big finger'). PHEC **k'uba* 'finger' (Bu. *k'uba,* Ge. *k'ub-icco,* Si. *k'ubbe* (pl.), Or. *quba.* Hudson (2013:243) reconstructs Proto-Semitic **ṣVbaʕ- ~ ʔVṣbaʕ-* 'finger', a form which bears several segments of similarity and which may well be Afroasiatic in origin.

7. č'ibā   'family' (Bl.). Cf. Gz. ḍewā I 'army unit'. Brockelman (1950:8) derives it from Bl. 'a good family' > 'freeborn') (also cited in L153).
8. č'inč'-   'fart' (Bl.) (onomatopoetic) but Semitic form not given. In Te. the form is t'art'a (or fi:s'at for a noiseless one) (Nakano & Tsuge 1982: 14 #87).
9. č'inč'   'fly' (Qu.), Ap. Qu. č'ənč'a, Bl. šinša, Xam. s'əs'a, Khamta s'as'rā̃, Kaïliña s'əs'a, Kem. šinša, Aw. cə́ncá. Cf. Gz. ṣənṣənyā, ṣənṣəyā, ṣəṣənyā 'fly, moth, buzzing swarm'. Leslau believes it is common with Cush., citing Or. č'inī, Dem. s'es'ā (L562, L88:90), cf. Heb. ṣəlāṣal 'cricket'. Perhaps Or. titiisa, tisiisa, Ge. tiiticca, etc.

3.2.2. č' in Medial Position

10. ʔənč'a   'that' (Bl.), Xam. əččän 'that (f.)'. Ap. offers no EthSem. cognate.
11. əč'əwa   'mouse, rat' (Xam.), Kaïliña əč'əwa, Khamta ač'uwā̃; Bl. ʔənšəw, Kem. ənšəwa. Ap. reconstructs PNA *ʔəncəw-a, but suggests Af.Sa. ʕandawa may be a borrowing from Agaw. Hudson (2013:238) reconstructs *ʔanṣaw- 'mouse' as a Proto-Semitic root. There are also interesting Omotic parallels: Shinasha iints'a, Kafa ič'č'o, Shekko ič'c'o, Mocha iič'č'e, Yemsa uč'. Gz. ʔanṣawā 'mouse, weasel' is from Cushitic (Leslau 1991:32); Te ʔans'ay, Tna. ʔanč'əwa < Bl. ənšəwa (L88:84). See also Ap. 2006b: 702, where Awngi yíncí is cited as an unrelated form with Omotic cognates, cited above.
12. bəč'ək'   'saliva' (Bl.), Xam. bəs'qən, Kem. bəzəxʷ, Aw. bə́s. Ap. says no single proto-form can be reconstructed, but perhaps NAgaw *bəcq-.
13. bərč'ək'y-   'spit' (Bl.), Xam. s'əč'y-. Ap. notes Xam. is 'reminiscent of' Ometo *č'ud- (Wolaytta č'učča 'saliva', č'uc'c'- 'spit' etc.) and also notes an element of onomatopoeia.
14. lič-   'shave' (Kham.). Gz. lāṣaya; Tna. laṣäya; Qem. Bil. liš- (Leslau 1988:98, Ap. 2006:121).

3.2.3. Probable Borrowings with č' from EthioSemitic

1. č'äläm-   'become dark' (Bl.) is from EthSem., Gz. s'alma, Tna. s'ällämä. č'ələm 'darkness' (Bl.). Ap. adds 'interestingly the shift s' > č' occurs only in SEthSem., e.g. Amh. č'ällämä. Cf. Hudson (2013:243) PS *ṣlm 'be dark (v)'.
2. č'ämam   'deaf' (Bl.), from Tna. s'änam.
3. č'äräb-   'chop, cut' (Bl.) Ap. gives no etymology. Perhaps Gz. qʷārafa 'chop into little pieces' (L440), but the consonants correspondences would be irregular.
4. č'äräg-   'sweep, wipe' (Bl.), Awn. cereg- from EthSem., s'rg Gz. s'araga, etc. Ap. notes 'the Agaw forms are perhaps indicative of an old borrowing' (2006:131).
5. č'əbəʕ   'finger, toe', č'əbʕət (Bl.) from EthSem., Ti. čəbʕit.
6. č'äʕan-   'load' (Bl.)., from Gz. s'aʕana, Ti. s'aʕnä, Tna. s'äʔanä. Other Agaw forms reflect Amh. č'anä (Xam. s'an-, Kem. šan-).
7. č'əffər   'claw, fingernail' (Bl.) is from Ti. s'əfər; Khamta ṣĕfr (Cf. Tna. s'əfri), Re. Qu. ṭeffer (> Amh. t'əfər). Hudson (2013:243) reconstructs PS *ṣVbaʕ- ~ ʔVṣbaʕ- 'finger' (see §3.2.1 #6 above).
8. ħargäč'   'crocodile' (Bl.) Ap. says from Ti. ħärgäs' but also Tna ħargas'.

3.3. Geʿez and Agaw Similarities According to Leslau

In these forms, the evidence of these forms is difficult to discern, since the details and exact correspondence sets are tricky. For example, in the first two cases, Geʿez ṣ corresponds both to Bl. č

and *č'*. The different reflexes may reflect different periods of loanwords. The data below, directly taken from Leslau (1987 [1991]) and (1988), are presented here for further study and analysis. They include a variety of forms which Leslau believes are "from Cushitic", "possibly common with Cushitic", "also in Cushitic" and so on. Certainly several of these candidates offer further possibilities that ejectives in Agaw could be due to native Agaw words and are not always due to borrowing from EthioSemitic.

1. Gz. *ṣənbəlāl*, 'butterfly' "from Cush." Sa. *s'imbilāliʕ*, Bl. *čimbirʕā* (sic, without ejection) (L559). Perhaps also PHEC **bill-anca*.
2. Gz. *ṣadanā* 'bee that lives underground' "also in Cush." Bl. *č'idänā* (L547).
3. Gz. *ṣəḥm* 'beard' "also in Cush." Bl. *č'ehum* (L552). Ap. (2006:29) gives Bl. *šäkʷäm* 'beard, chin' and notes that Reinisch considers it a borrowing from EthSem. Leslau believes Som. *tin* 'going back to *ṭin, ṭim* is borrowed from Amharic *ṭim*; Te. *ṣəḥəm, č'əḥəm*.
4. Gz. *ṣawwəʕa* 'call, call upon' etc. "also represented in Cush." Qab. *č'awč'aw iyo*, Bl. *č'aw y-* (L566); cf. Heb. *ṣāwaḥ* 'cry aloud', Te. *ṣäw'a* (L88:90). Perhaps Bu. *c'eeh-*.
5. Gz. *ʕaṣawa* I 'close, shut, shut up, lock, bolt, block, confine, stop' is "also in Cush." Kham. *ies'uw* 'tie, bind', Aw. *ans'iaw*, Kem. *anšäw* (L75); Tna. *ʕaṣäwä* 'close'; related to Ar. *ǵdy* 'close the eyes'. Ap. 2006:46 states that Kham. has *χaṣ[u]w-* from Tna. *ʕaṣ'äwä*. Perhaps Or. *c'ufa* 'close', HEC **tuf-* (e.g. Ge. *c'uf-*, Ha. *t'uf-*).
6. Gz. *ḍagama* 'be on the left hand' is "poss. common with Cush." Kham. *s'agib* 'left' (with alternance b:m), Bl. Qua. *šangab*, with inserted *n*, hence Te.Tna. *šängab* 'left', Aw. *č'angaba* (L149); Ar. *ḍaǵima* 'be crooked' (L88:91).
7. Gz. *ḍamr* 'wool, fleece, woolen garment' "also in Cush.": Kham. *s'amir* 'tail, hairy tail', Aw. *s'imar,* Bl. *šemar* (L150-151).
8. Gz. *gaṣṣ* 'face. countenance, aspect, appearance, etc.' "perhaps from Cush." Kham. *gas'* 'face', Bed. *gedi*, Bl. Kem. *gaž* (L205-6); Te. Tna. *gas's'* (L88:87).
9. Gz. *ḥṣṣ, ḥas'as'a, ḥas's'a* 'be deficient, subside, wane' etc. "also in Cush." Bl. *has'as'* 'cut in small pieces' (L247; L88:96 notes that it was "perhaps rather borrowed by Cushitic" but cites Ar. *ḥaṣṣa* (*ḥṣṣ*) 'cut'; Tna. *ḥaṣäṣä* 'be little').
10. Gz. *qʷənṣəl* 'fox, jackal' Brockelmann considers it a Cushitic loanword Bl. *kʷanšalā*, Kham. *kʷas'elā* (L435).
11. Gz. *ṣabā, ṣabo, ḍabā* 'milk' Cohen (1947: no. 343) considers it a root common with Cushitic Bl. Qua. *šab*, Kham. *s'ab, ẓab*, Ğan. *šabō*. (L544). Tna. *ṣäba*
12. Gz. *ṣabal* 'dust, powder' "also in Cush." Bl. *šebar* 'ashes', Kham. *s'abir* (with alternance of liquids r:l). (L546); Tna. Gaf. *ṣäbäl*. Perhaps Ka. *t'abaro* 'ashes'.
13. Gz. *ṣagʷr* 'hair, fur, feathers, fleece, fiber (of palm)' "from Cush." (so also Cerulli 1936:242-3) Bl. *šagar*, Qua. *t'agur*, Som. *dogor, ḍagur*. (Possible connection with Semitic and Cushitic root that suggests the Semitic-Ethiopic root is taken from Cushitic (L550)). Yields Tna. *s'ägʷri*, Amh. *t'ägur*. Perhaps PSC **t'îḥ-* 'body hair, fur' (Ehret 1995 #247).
14. Gz. *ṣew, ḍew* 'salt, salty land, sterile land' "from Cush." Bl. *šəwa*, Kham. *čəwā,* Qua. *š'ēwā* (L565), yielding Tna. Amh. *č'äw* (L88:88).
15. Gz *t'aqā* 'proximity'; Tna. *t'əqa* < Bl. *taǵā-t* 'come close', Kham. *t'aqe-t*, Af. *tak* (L595, L88:88). But perhaps a Cushitic cognate in PSC **t'ěeh-* 'near' (Ehret 1995 #245).
16. Gz. *qʷənṣ* 'mosquito'; Tna. *qʷənṣi* 'flea'; Kham. *qemsa*, Qab. *qūnči-ta*; probably Ar. *qamaṣ* 'small insect'. Ap. (2006) believes Conti Rossini's Khamta has *qunč* from Amh. *k'unəčč'a* or Tna. *kʷənsʼi*; cf. also Ap. Qu. *k'unəč'a* and CRo. Awiya *queniči̥*.
17. Gz. *ṣəwwāʕ* 'cup, goblet'. Bl. *suwāʕ*, Sa. *duwāʕ*; Tna. *ṣəwaʕ*; Ar. *ṣāʕ* 'a cubic measure'
18. Gz. *fanṣāṣā* 'smallpox'. Bl. *fint'āt'a*; Sa. *fint'āt'a*, Tna. *fənt'at'a*; Or. *fänt'āt'a*.

4. Conclusion

This paper has brought forth evidence that Proto-Agaw should be reconstructed with ejectives, and thus with the distinctive feature [+constricted glottis]. Unlike Orel & Stolbova (1995), who simply assume assume Proto-Agaw reconstructions with ejectives, this paper has provided actual linguistic forms to support this hypothesis. Fallon (2009) presented evidence from other Cushitic languages that, in the velar place of articulation, there are 25 Proto-Agaw roots which may be reconstructed with a velar ejective. Appleyard could not argue that all these forms were the result of EthioSemitic borrowings. In this paper, I have presented additional evidence for ejectives in Proto-Agaw, focusing on coronal stops and affricates. In addition to providing Cushitic (and occasionally Afroasiatic) cognates wherever possible, I have tried to weigh the opinions of the scholars Wolf Leslau and David Appleyard regarding the complex and entangled web of loanwords and similarities in the Agaw and EthioSemitic lexicons. I have suggested here that there are 17 roots with PA *t' (while conceding that there are at least 11 EthioSemitic loanwords with t' in Agaw). In addition, I provided data for 14 roots with PA *č'. Finally, I provided a number of other forms involving ejective sibilants which will require greater scrutiny in teasing apart the reason for the similarities between Agaw and EthioSemitic. Further work will shed light on different cognate sets to help determine periods of loanwords, strata of borrowings, and the exact nature of the required phonological rules. Already, I have shown that Appleyard's assumption in (5b) that Agaw lost all its ejectives needs to be revised. In addition, the careful seriation of changes posited by Ehret (2008) which are formalized in (6) above will need to be modified in their details and probably sequencing. This will thus allow a more accurate reconstruction of Proto-Agaw, which will in turn put on a firmer basis the reconstruction of Proto-Cushitic.

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