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THE CONSONANT INVENTORY OF PROTO-EASTERN CUSHITIC

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Previous work on the Eastern branch of Cushitic, most notably the work of Hans-Jürgen Sasse, established a solid initial reconstruction of the proto-Eastern Cushitic (PEC) consonants. This initial system had about 20 to 23 consonants. Further work by Linda Arvanites indicated the existence of several additional consonants. The current work rounds out the PEC consonant system and shows it to consist of 30 consonants in all. These form a moderately well-balanced system of voiced stops, voiced implosives in four different positions of articulation, and voiceless stops and ejective stops in three different positions of articulation. PEC also had five non-laryngeal fricatives, the full array of laryngeals that one has come to expect from Afroasiatic languages, l, r, w, y, and most interestingly, four different nasals, including *ɲ* and *ŋ*, this latter distinction not widely recognized as a feature of Afroasiatic. A side effect of this reconstruction is a first provisional history of the reflexes in Eastern Cushitic languages of PEC geminates. Along with this history, an explanation is proposed for the derivation of the Yaaku 7-vowel system from the PEC system of 5 vowels, long and short.

1. Expanding the PEC Consonant System

Hans-Jürgen Sasse's [1979] ground-breaking work on the consonant reconstruction of proto-Eastern Cushitic (PEC) solidly established the existence of at least twenty-one PEC consonants. But it soon became apparent, once a substantial reconstruction of proto-Cushitic (PC) had been developed [Ehret 1987], that a number of additional PEC consonants had to be posited. Further, it was clear by implication from the PC reconstruction, if not always explicitly stated, what kinds of articulatory positions those consonants most probably occupied.

Sasse's subtitle of his article, "A first approximation", reflected his own awareness that there was much more to be learned about the PEC consonants. His inventory comprised three regular voiced stops, **b*, **d*, and **g*; their voiceless counterparts in two positions, **t* and **k*; two glottalic stops opposite in voicing, **d'* and **k'*, along with a third glottalic he renders as **d'*₁ and which at one point he suggests might itself conflate two separate consonants; the fricatives **s*, **ʃ*, **z*, and possible **x*; four laryngeals **ʔ*, **ʕ*, **ħ*, and **h*; the nasals **m* and **n*; the liquids **r* and **l*; and also **w* and **y*. The very unbalanced distribution of articulatory positionings in this system, graphically visible in tabular form below, is enough by itself to indicate that more PEC consonants remained to be discovered.

<i>b</i>	<i>d</i>		<i>g</i>	<i>ʕ</i>
	<i>t</i>		<i>k</i>	<i>ʔ</i>
	<i>s</i>	<i>ʃ</i>	(<i>x</i> ?)	<i>ħ, h</i>
	<i>z</i>			
	<i>d', d'</i> ₁		<i>k'</i>	
<i>m</i>	<i>n</i>			
	<i>l, r</i>			
<i>w</i>		<i>y</i>		

The process of filling in the gaps in the proto-Eastern Cushitic inventory began in the recent doctoral dissertation of Linda Arvanites [1991]. She shows that Sasse's **d'*₁, as he suspected, does indeed conflate two separate glottalic consonants, PEC **t'* and **c'*, and that an additional voiced glottalic, PEC **b'*, fits the labial slot in the system in tandem with the already well established voiced PEC **d'* in the dental-alveolar position. She also adds to the evidence for the PEC fricative **x*.

The present article rounds out the contribution of Arvanites' work with an extensive demonstration of three additional PEC consonants and a necessarily less extended presentation of evidence for two relatively rare consonants. The data adduced below show that the glottalic sets of proto-Eastern Cushitic have two further voiced members, **j'* and **g'*, not recognized in Sasse [1979] or argued for explicitly in Arvanites (although implied in Ehret [1987]). They also demonstrate the existence of a further, quite common PEC obstruent **c* (marked as **S* in Ehret [1987: 140-142]), obscured in the evidence previously investigated for the PEC sibilants. The establishment of these phonemes requires presentation of new evidence on the recognized PEC consonants **s* and **ʃ* as well as specific substantiation of **j'*, **g'*, and **c*. Two added nasals, **ŋ* and **ɲ*, that are not at all common round out the PEC inventory. In addition, new materials are presented for PEC **x*, establishing its pattern of sound correspondence in the major Eastern Cushitic languages. Finally, new findings are offered on the history of PEC

geminate consonants and on the derivation of Yaaku's seven-vowel system from the five vowels of PEC.

The analysis has been helped along greatly by publication in the 1980's of important collections of Soomaali, Afar, and Sidamo data [Ehret and Ali 1983, Ali 1985, Agostini et al. 1985, Parker and Hayward 1985, and Gasparini 1983, along with Keenadiid 1976] that were not available to Sasse in the 1970's. Unpublished Yaaku data collected by the writer [Ehret 1967] have also been used.

The findings here have, as well, important consequences for subgrouping within Eastern Cushitic. The existence of a distinct Lowland East Cushitic branch (identified in Black [1974] and separately postulated in Ehret [1976]) can now be affirmed from shared patterns of phonological innovation found in its constituent members, the Soomaali, West Omo-Tana (Arbore and Dasenech), Oromoid, and Afar subgroups (Ehret [1987] and data on PEC *g' and *j' below). The previously proposed South Lowland division of Lowland East Cushitic, excluding Afar and Saho which can be placed in a separate North Lowland division [Ali 1985], finds solid support in the sound change histories of PEC *ʃ and *x (see §§1.1.2 and 1.4 below).

In the discourse that follows, the particular attestations of a root are presented generally in morphologically analyzed form, with the stem separated from nominal suffixes or verb extensions by hyphens and the suffixation described in parenthesis after the entry. Number-gender markers in nouns and adjectives, usually of the shape -V but sometimes -VCV, are similarly marked off, but without further comment on their meanings. Syllabic nasals are represented by \bar{n} and $\bar{\eta}$, the voiced and voiceless palatal affricates by j and c respectively, and the implosive labial, palatal, and velar stops by b' , j' , and g' . The symbol d' marks a consonant that manifests itself as the equivalent alveolar implosive in PEC and in most modern-day Eastern Cushitic languages, but produces a retroflex alveolar stop in some of the more northerly tongues, such as Afar and many Soomaali dialects. The utilization of the apostrophe ['] to record the glottal stop is another widespread, although not universal, practice in the representation of Eastern Cushitic data. Two languages have unusual orthographic conventions: in Soomaali x is used for /h/, c for /ʃ/, and dh for /d'/; in Afar, x instead marks /d'/, while c denotes /h/ and q marks /ʃ/. The digraph sh expresses /ʃ/ in Soomaali and Sidamo data, while q marks actual /k'/ in both the Oromo and Sidamo materials. The q of Dullay and Yaaku properly represents a uvular, but an unusual one, an implosive voiceless stop. In Yaaku the voiced stops b , d , j , and g are all strongly implosive, though not specifically marked as such.

Throughout, the notation "Soomaali" used by itself before a word refers to the accepted standard Soomaali language, either in its northern [Keenadiid 1976] or southern [Agostini et al. 1985] versions.

1.1. PEC *s, *ʃ, and *c. Sasse [1975, 1976, 1979] identifies two voiceless sibilant correspondence series, one manifested in Oromo as /ff/ and in all the rest

of Eastern Cushitic as /s/ and deriving from PEC *s, and the second appearing in both Soomaali and Oromo as /s/, but as /ʃ/ in several other Eastern Cushitic tongues, and attributed to EC *ʃ. This accounting leaves out the many examples of Soomaali /ʃ/ that cannot satisfactorily be explained as regular palatalizations of PEC *k in front-vowel environments, and it equally neglects the common Yaaku back palatal sibilant /ʃ/. The one example so far noted [Sasse 1979:12] of the numerous Soomaali words in which /ʃ/ (orthographic “sh”) precedes a rounded back vowel, *shub* ‘to pour,’ has been attributed implausibly to an irregular palatalization of *k before /u/ (see root #78 below for a more satisfactory derivation).

But when Soomaali and Yaaku words that contain /s/ and /ʃ/ are compared across the board with cognate forms in other Eastern Cushitic languages, *three* distinct correspondence patterns in fact emerge. A third sibilant *c, already tentatively recognized at the proto-Dullay level by Hayward [1982], can be postulated as the etymon of the added series. It seems most likely to have been articulated as an affricate in PEC, as it is when geminated in Oromo and in certain positions in Saamakko of Dullay. Its occurrences have previously been confused most often with those of PEC *ʃ, and less often with those of *s, when noted at all. A fourth set of correspondences, for the well-established voiced sibilant PEC *z, need to be seen in parallel with those for the voiceless sibilants. The reason is that in some languages this consonant has devoiced to /s/, a potential source of confusion which must be factored out in reckoning cognation:

PEC	Afar	Soomaali	Arbore	Oromo	Konso	Dullay	Yaaku	Sidamo	Burji
*s	s	s	s	f	s	s	s	s	s
				(> s/z /_V[+labial])					
*s'	s	s	s	s	s	ʃ	ʃ	s	ʃ
		(y /i_)			(ʃ /i_)			(ʃ /o)	
*c	s	ʃ	s	s	ʃ	ʃ, c	s	ʃ	s
				(cc)					
*z	d	d	z	d	t	s, z	s	d	d
						(PD *z)			

PEC *c yielded proto-Soomaali *c, which Rendille apparently retained as /c/ at least non-initially, and which elsewhere in the Soomaali group shifted to /ʃ/. Geminant *cc produced /cc/ in Oromo. The notation PD identifies the proto-Dullay etymon. In the Dullay group the reflex /c/ for PEC *c occurs only in Saamakko and even there possibly only in cases of an underlying geminate; other Dullay dialects have /ʃ/ in all cases. Similarly, PD *z is retained as /z/ only in Saamakko, while in the rest of the dialect group it has fallen together with /s/

[Hayward 1982]. Hadiya outcomes for each of these consonants are identical with those of Sidamo except apparently that all PEC *ʃ, including those in environment of *o, become /s/.

1.1.1. Proto-Eastern Cushitic *s. The first of the three correspondence series fits exactly with Sasse's set for PEC *s and strongly reconfirms his discovery. Numerous examples can be cited, some of them already well known in the literature of Eastern Cushitic reconstruction (HEC = Highland East Cushitic, LEC = Lowland East Cushitic):

1. *s**ab-** 'to deny'

HEC: Hadiya *sabb-* 'to refuse; not be possible; hate';

LEC: Soomaali *sassab-* 'to deceive; to entice'; Arbore *sassab-* 'to deceive'; Oromo *sob-a* 'lie,' *soosob-* 'to deceive';

Yaaku *sap-ar-e* 'lie' (stem plus Cushitic nominal suffix in *r)

The LEC languages share in a particular innovated form by reduplication. For other cases of PEC *a > o /#s_[+labial] and /#b_s in Oromo, see roots #4 and #42 below. Burji *sob-*, *soosob-* 'to deceive' is a probable loan from Oromo because it shows the Oromo vowel-rounding shift. Sasse [1979, 1982] connects up Harso *sapsap-icce*, Gollango *saapsap-itte*, etc., 'spider' with this root; similar forms appear in Burji naming the spider, and in Arbore denoting a kind of spider.

2. *s**ag-/sig-** 'far'

LEC: Dasenach *seg-* 'far'; Oromo *fag-oo* 'far'; Konso, Gidole *sek-* 'far';

Yaaku *-sek-ε'* 'far' (Heine [1975] has *sεke'*)

The proto-Cushitic (PC) reconstruction of this root is *sag-/sig-. It was reconstructed as *sog-/seg- in Ehret [1987:59] because of the writer's mistaken acceptance there of the presumed cognation of the Eastern Cushitic forms in /f/. The Southern Cushitic and Yaaku vowels are determinative in this matter. Rift Southern Cushitic *sag- [Ehret 1979] requires the PC vowel *a; Yaaku /e/ derives from PEC, and therefore PC, *i (see discussion of Yaaku vowel outcomes in §2 below), whereas the vowel /a/ in the Beja reflex could be from PC *a, *e, or *o [Ehret 1987]. Soomaali *fog-*, Arbore *fek'-*, etc. for 'far' can be attributed to a distinct Cushitic root *feg-/fog- 'to separate, be put apart, be removed', e.g. Southern Cushitic *feg-, as in Iraqw *feguus-* 'to clear away (vegetation from a field)' (stem plus Cushitic causative), also seen in Semitic *pg(g), e.g. Arabic *fajj* 'to open the legs, widen a bow' [Ehret 1989:130]. They need not be explained as some kind of irregular extension to other Eastern Cushitic languages of the shift of PEC *s to /f/, which is regular only in Oromo. The Oromo word, of course, may also derive from *feg-/fog-. The probable explanation, in this case, of the unexpected /e/ in the Dasenech and Konso-group reflexes is that both *feg- and

**sag-* existed in early South Lowland East Cushitic (these languages all belong to that subgroup), and that the pronunciation of the one root influenced that of the other.

3. **sa(a)g-* ‘meat animal’

LEC: Afar *sag-a* ‘cow’;

Dullay: Gollango *saak-an-ko* ‘meat’ (stem plus Cushitic n. suff. in **n*)

The vowel-length difference is as yet unexplained.

4. **samay-* ‘(spear)shaft’

LEC: Soomaali *samay-o* ‘spearshaft; long straight stick’; Oromo *som-aa* ‘spearshaft’;

Dullay: Harso *samay-ho* ‘spearshaft’

This entry revises the reconstruction of the root in Sasse [1975, 1982]. Burji *somay* is apparently a loan from Oromo for the reason cited under root #1 above.

5. **san-/*sin-* ‘branch’

HEC: Sidamo *sin-a* ‘branch’;

Dullay: Harso, Dobase *san-ce*, Gollango *san-te* ‘branch’

This root appears also in the proto-Southern Cushitic form **san-* ‘root, tap root, lower trunk’ [Ehret 1979]. Sasse [1976:140] sees the Dullay forms cited here as reflexes of PEC **zaam-* ‘branch.’ But their consistent failure to show the expected vowel length and their maintenance of /*n*/ in the plural where following **t* is lacking [Amborn et al. 1980], in contrast to the presence of vowel length and of /*m*/ in the one undoubted Dullay reflex, Saamakko *zaamm-e*, argues against his solution.

6. **sar-* ‘to burn (intr.)’

HEC: Hadiya *sar-, ser-* ‘to cook, bake’; Burji *saar-* ‘to boil (intr.)’

Yaaku *sar-* ‘to burn (intr.)’

For lengthening of PEC **a* in Burji in some environments of /*s*/, see roots #187 and #193 below.

7. **say-* ‘to go down’

8. **says-* ‘to set down’ (adds causative to simple stem)

LEC: Afar *say-* ‘to decline, set (of sun)’; Soomaali *sees* ‘base, fondimento’;

Dullay: Harso *says-* ‘hinlegen’

9. **sikk-* ‘to pierce’

HEC: Sidamo *sikk-* ‘to penetrate (a splinter into skin)’;

LEC: Afar *siik-in-tu* ‘splinter’ (stem plus Cushitic n. suff. in **n*, plus form of EC **t* singulative suff.);

Dullay: Gollango *siik-o*, Dobase *sik-o* ‘Beilklinge (mit Absatz)’

10. **sil-* ‘to rest’

HEC: Sidamo *sil-i'-m-a* ‘nap, snooze, doze’ (middle voice stem, **sil-id'*-, plus Cushitic n. suff. in **m*);

LEC: Afar *silaal-* ‘to rest at noontime in the shade’ (partially reduplicated stem by the CVCaaC- vocalization seen also in examples in #15 and #119, the determinants and significance of which remain to be worked out);

Yaaku *-sel-* ‘to rest’

Oromo *sillimii* ‘short nap’ is an evident loan from an HEC language.

11. **siil-* ‘vagina’

HEC: Sidamo *siil-a* ‘uterus, womb’;

LEC: Soomaali *siil* ‘vagina (of woman)’;

Dullay: Harso, Gollango *siil-akko* ‘clitoris’

12. **siill-* ‘thin fluid’

LEC: Arbore *sill-a* ‘first milk’; Oromo *fill-ee* ‘light rain’

13. **sizzeḥ-/sazzeḥ-/sazzoḥ-* ‘three’

HEC: Sidamo *sase*, Hadiya *saso* ‘three’;

LEC: Afar *sadoc* ‘three’; Soomaali *siddeḥ* ‘three’; Oromo *saddee* ‘three’; Gidole *setti* ‘three’

Dullay: Harso *ezzaḥ*, Dobase *sizeḥ*, Gollango *izzeḥ* ‘three’; Saamakko *zeeḥ* ‘three’

The northern HEC languages in this instance all evidence an early assimilation shift, **z* > **s* /##sV_V#, dating before **z* > *d* in Sidamo and Hadiya, which appears even in those languages such as Kambatta (whose forms have not been cited here) where PEC **z* > *z*. Konso *sessā* ‘three’ for expected **setta* belongs, in contrast, to a wider set of words demonstrably borrowed, by reason of their showing Dullay sound correspondences, e.g. /s/ for PEC **z*), from a dialect of the Dullay, whose territories intertwine with those of the Konsoid group [Black 1974; Sasse 1976].

14. **sizzent-/sazzent-* ‘eight’

HEC: Sidamo *sett-e* ‘eight’; Hadiya *sadent-o* ‘eight’;

LEC: Soomaali *siddeed* ‘eight’; Oromo *saddeet* ‘eight’;

Yaaku *siit-e* 'eight';

Dullay: Harso, Dobase *sass-e*, Gollango *sett-e*, Gawwada *satt-e* 'eight'; Saamakko *sezzen* 'eight'

This reconstruction differs from previous postulations in trying to account for the /n/ of the Hadiya and Saamakko forms of the root. Burji *hiditta* and Kambata *hezzetto* 'eight' are not in some skewed way related to the root of #14. They can be seen to be built on the Omotic root for 'three' (Ometo languages, in particular, have *hedz-*, *hezz-*, etc., for 'three'), reckoning the numeral eight on a base-five system, and thus must be loanwords from an Omotic language. The regular Eastern Cushitic root for 'eight' depicted here is, of course, also an apparent base-five formation from the PEC root for 'three', preceding in #13.

Roots #13, #14, and also #145 below illustrate the blocking of Oromo's *s > /f/ shift in the environment of a following PEC sibilant *z (Sasse [1979] identified this effect). A variety of irregular assimilations and coalescences have affected the sequence of *s and *z in Eastern Cushitic languages, most notably in HEC, Dullay, and Yaaku.

15. **sun-* 'to pull out'

LEC: Arbore *suun-* 'to pick'; Oromo *funaan-* 'to gather, pick up in field' (CVCaaC-vocalization pattern; see also #10 above);

Yaaku *-sun-t-* 'to stretch (as hide in tanning)' (stem plus Cushitic *t continuant extension, removing boundedness of action implied in simple root, i.e. 'pull out' > 'pull, keep pulling'); *-sun-t-is-* 'to straighten' (1st entry plus *s caus.)

16. **suuʔ-* 'to call out'

HEC: Sidamo *su'-m-a* 'name'; *su'-m-* 'to call by name' (stem plus Cushitic n. suff. in *m; verb is back-formation from noun); Hadiya *summ-a* 'name';

Yaaku *-soo'* 'to cry'

PEC *ʔ instead of *ʕ is required by the Yaaku shift of PEC *uu to /oo/ (for Yaaku vowel shifts see §2 below). Despite its surface resemblance to the wide Afroasiatic root **sim-/sum-* 'name,' the general North HEC root for 'name' cited here in its Sidamo and Hadiya forms must derive, because of its medial glottal stop, from this distinct verb root, by addition of the old Cushitic and Afroasiatic *m deverbative suffix.

17. **mas-/mis-* 'cord'

LEC: Soomaali *mas* 'snake'; Dasenech *mas* 'Seil';

Yaaku *mis-a* 'thong'

This entry corrects Sasse's [1976] postulation of **maš-*. It should not be confused with the distinct root **mof-/bof-* denoting some kind of snake.

18. *ʔuss- ‘stomach contents’

HEC: Burji *us-i* ‘intestines’;LEC: Soomaali *uus* ‘stomach contents’;Dullay: Harso, Dobase, Gollango *us-ko* ‘Panseninhalt’

Further PEC roots containing *s can be found at #145, #193, #216, and #217 below among the evidence illustrating PEC *g’ and *x.

A variety of additional solid cases of PEC *s have been published by Sasse and others, among them *sabeen-/sibeen-/subeen- ‘ewe-lamb’; *saal- ‘dung’; *sag- ‘to talk’; *sanun-/sunun- ‘to have nose bleed’; *sar-/ser-/sir-/sur- ‘relative’; *saʔ-/siʔ- ‘Acacia sp.’; *saʔn- ‘sole’; *sid- ‘to carry’; *sinc- ‘urine’ (for the PEC *c’ in which, see Ehret [1987]); *soʔ- ‘meat’; *suun-/sunn- ‘strap, thong’ (Sasse [1979] has *suun-, but the Sidamo reflex *sunco*, pl. *sunna* requires the latter alternate); *surk-/sukr- ‘to push’; *surn- ‘nasal mucus’; *sus- ‘to attach, tie’; *bis- ‘color’; *gasaar- ‘buffalo’; *gaas- ‘horn’; *gaws- ‘molar teeth’ or ‘jaw’; *hinaas- ‘to be jealous’; *j’uus- ‘to fart’ (*d’uus- in Sasse [1975] and [1979]—see root #167 below); *kils-/kuls-/klis-/klus- ‘to be fat’; *kurs- ‘round, humped’; *k’osl- ‘to laugh’; *mo(o)s- ‘old’; *nafs-/nefs- ‘to breathe’ (> *nass-/ness-); *ʔis-/ʔus- ‘self’; *wisl- ‘to dream’; *ʔus- ‘he’; and *ʕusl-/ʕisl- ‘heavy.’ To this last root should be added Yaaku *esin* and Jiiddu *ʔasl-e*, which reflect a third stem shape *ʕasl-.

One root containing PEC *s, the pronoun *ʔis- ‘she,’ is reconstructed in Sasse [1979] as *ʔiʃ-, but its shapes in Yaaku, *isi*, and Dullay, *ise*, both require original *s. Sasse was led to his reconstruction by the South Lowland East Cushitic (SLEC) forms of this root, which do reflect earlier *ʃ. PEC *s widely became /ʃ/ in SLEC languages—by what were probably synchronic preservations of a proto-South Lowland morphophonemic shift—in the restricted stem-final environment /-i_# (see also Konso outcome in sibilant correspondence table above). The same sound change accounts for the SLEC form of the Eastern Cushitic causative allomorph, *-is-, which became *-iʃ- in proto-South Lowland (see Hayward [1984]), and therefore can be seen as one of the indicators of the validity of South Lowland as a genetic subgroup of Eastern Cushitic.

A lexical example in Soomaali evinces the effects, too, of this SLEC phonological innovation: Sasse [1976] proposes a PEC root *haʃ- ‘to hold, keep’, but its reflexes in the various Soomaali dialects and languages and in Afar-Saho require a reconstructed root pair:

19. *hay- ‘to put, set in place’; *hays- ‘to take, receive’

LEC: Afar *hay-* (*hee*) ‘to put, place’; *hays-it-* ‘to place (etc.) f.o.b.’; *haysit* ‘claimant’; Soomaali *hay*, Maay *haay*, Jiiddu *heeʃ* ‘to hold’;Dullay: Harso, Dobase, Gollango *hayy-* ‘befehlen’

Afar attests both the simple and extended shapes. The Soomaali reflexes all derive from the second form, in a proto-Soomaali (PS) shape **hayš-*, from earlier **hay-s-*, with the usual PS and LEC **[š] < PEC *s /i ~ y_*.

1.1.2. Proto-Eastern Cushitic *š. The second correspondence set, reconfirming PEC **š*, differs from Sasse's principally in having Yaaku /š/ (and never /s/) as its outcome in that language. Its reflex throughout the Soomaali group, including Jiiddu, is /s/, except apparently in limited non-initial environments (in particular, /i_# discussed just above). Its normal outcome in Sidamo and Hadiya of the Northern branch of Highland East Cushitic is /s/, although in environment of /o/ it remained /š/ (*sh*) in Sidamo (see #32, #35, #37, and #44 below). In the single South HEC language Burji, its regular reflex is /š/. PEC **š* is the least common of the three voiceless sibilants.

20. **šaak'* 'to open up'

HEC: Sidamo *saaq-* 'to open wide, throw open'; Burji *šaak'* - in *irk'a šaak'* - 'to smile' (*irk'a* 'tooth'; i.e., to open the teeth)

LEC: Soomaali *saaq* 'espandersi su qn. o qs.'; Oromo *saaq-* 'to open, uncover';

Yaaku *-šaak-d-* 'to spread (intr.)' (stem plus PEC **d'* middle voice extension)

21. **šaan-* 'moist'

LEC: Afar *saan-iyya* 'cold dampness' (stem plus Cushitic n. suff. in **y*);

Yaaku *šaan-o* 'dung of large animals'

Burji's suite of words—*saan-ee* 'soft,' *saan-?*, *saan-d'* 'to become soft, smooth, moist' (stem plus EC middle voice extension), and *saan-s-* 'to make soft, smooth, moist' (stem plus Cushitic caus.)—are best counted among the loanwords of the language because of their attestation of /s/ for expected /š/.

22. **šang-* 'ox'

HEC: Sidamo *sang-a* 'stallion, bullock'; Hadiya *sang-a'a* 'Schlactochse';

LEC: Afar *sang-a*, *sank-a* 'gelded animal'; Soomaali *seng-e* 'stallion'; Oromo *sang-a* 'ox'

Burji *sang-a* 'ox' shows /s/ for expected /š/ and is therefore, like *saa* 'cow' in the language, a borrowing, most probably from the Burjis' cattle-keeping neighbors, the Oromo.

23. **šarb-* 'shank'

HEC: Sidamo *saraw-a* 'calf of leg';

LEC: Afar *sarb-a* 'calf, lower leg'; Arbore *sarb-a* 'shin'; Oromo *sarb-aa* 'calf';

Dullay: Harso, Gollango *šarp-akko* 'vulva, vagina'

Burji *sarb-aa* ‘calf of leg’ does not show regular correspondence here and appears to be a straightforward loan from Oromo.

24. **šarrk’*/**šurrk’*- ‘to wind, twist’

HEC: Sidamo *sarraaq-* ‘to wind a thread’; Burji *šarʔum-* ‘to become wrinkled’ (stem plus Cushitic **m* intr. extension);

LEC: Soomaali: Garre, Tunni *suruq-o* ‘cow with twisted horns’

25. **šawɸ-* ‘beehive’

HEC: Burji *šawʔ-an-aa* ‘beehive’ (stem plus n. or number suff. in **n*);

Yaaku *šoošo* ‘beeswax’ (reduplicated stem);

Dullay: Harso, Dobase *šaaw-ce*, Gollango *šaaw-te* ‘beehive’

The reconstruction of the pharyngeal **ɸ* here is required by the probable Southern Cushitic cognate seen in proto-Rift (PR) **caɸ-* ‘honeycomb’ (PSC **ʒ* > PR **c*; in Ehret [1980:362], the available evidence allowed PR **c’* and **ts’* as other alternative initial consonants). Its loss in Dullay accounts for the long *aa* attested there.

26. **šaʔ-* ‘to be mistaken’

LEC: Oromo *se’-* ‘to think, be under impression (mistakenly)’;

Yaaku *-ša’-n-at-* ‘to forget’ (stem plus Cushitic n. suff. in **n* plus Cushitic **t* continuative extension as denominative)

27. **šaʔn-*/**šiʔn-* ‘skin’

LEC: Soomaali *saan* ‘pelle spessa di animale conciata’;

Yaaku *še’n-o* ‘bark of tree’

28. **šaʔm-*/**šiʔm-* ‘brain’

HEC: Sidamo *samm-o*, *samm-icco* ‘sinciput; middle of the skull where children still have cartilage’; Hadiya *samm-o* ‘Scheitel’;

LEC: Oromo *samm-uu* ‘brain’;

Yaaku *še’en*, pl. *šo’m-e* ‘marrow’

The HEC reflexes require a metathesized root shape **šamʔ-*. Consonant doubling in Oromo is the common outcome of the reconstructible sequences **ʔC* and **ɸC*; e.g. Oromo *lap’p’ee* ‘heart, chest’ corresponding to Soomaali *laab* ‘chest’ and deriving from PEC **laɸb-* [Ehret 1987:118]. If the original sequence was opposite in order, either **Cʔ* or **Cɸ*, then the resultant consonant in Oromo is single, e.g. Oromo *sap’ii* in root #32 below. This distinction is not noted in Sasse [1979]. The Yaaku plural form may reflect an underlying shape, **šiʔum-*.

29. **ʒeell-* 'to convey knowledge'LEC: Afar *seel-* 'to be acquainted with';Yaaku *-ʒeel-* 'to teach'

A geminant final consonant must be reconstructed to account for the Yaaku vowel (see below for Yaaku vowel outcomes). Burji *seer-is-* 'to learn' (stem plus causative) is conceivably a regular cognate, providing /s/ is the regular Burji reflex of PEC *ʒ /#_ee. No other cases of this environment are known as yet for Burji, so the possibility remains to be tested.

30. **ʒem-* 'to be good'LEC: Soomaali *san* 'stare buono (solo nei composti)';Yaaku *-ʒen*, pl. *-ʒeme* 'sweet' (Heine [1975] has *e* in both the sing. and pl.)31. **ʒeeʕ-* 'to be bare, clear'

LEC: Soomaali *seen* 'annientare qn. or qs.; radere qn.' (**ʒeeʕm-*, stem plus probably n. suff. in **m*, with verb derived from earlier noun); *seen-yo* 'animale privo di corno' (stem *seen* in preceding item plus Cushitic n. suff. in **y*); NW Maay *seem-en* 'hornless cow' (stem as in preceding entry plus n. suff. in **n*);

Yaaku *-ʒee'* 'to be cloudless (of sky)'; *-ʒee'-s-* 'to peel' (stem plus Cushitic **s* caus.)

The pharyngal *ʕ, rather than *ʔ, must be reconstructed to account for the Yaaku vowel (see section 2 below).

32. **ʒob'ʔ-*, **ʒob'ʔil-* 'pubes'HEC: Sidamo *ʒoobb-a* 'hair of the pubes' (< metathesized form of root, **ʒoʔb-*);

LEC: Soomaali *sabiil* 'vagina (of animal)'; Arbore *sob'-ore* 'young male goat' (stem plus Cushitic n. suff. in **r*; semantics: having genitals, i.e. becoming of an age to reproduce; reference here is to the male equivalent among goats of the heifer among cows); Oromo *sap'-ii* 'pubic hair';

Dullay: Harso *ʒob'il-ce* 'foreskin'

This root also appears in Southern Cushitic, in Ma'a *i-ʒobo* 'foreskin'. The simple shape without the suffix in **l* may have referred more specifically to 'pubic hair'.

33. **ʒoof-* 'to rub with a tool'LEC: Soomaali *soof* 'limare qs.; affilare qs.'; Oromo *soof-* 'to plane off, hew'

The evidence for this root outside of Eastern Cushitic [Ehret 1987:62] shows it to have begun with *ʒ rather than the *s that is also allowed by the available EC data. Sidamo *soof-* 'to plane, make smooth (wood), scrape, tan (hide), scrub' appears from its lack of usual *sh /o* to be a loanword from Oromo.

34. **ʃook'k'*- 'to smell'HEC: Burji *ʃook'*- 'to stink';LEC: Soomaali: Jiiddu *sok* 'nose' (PEC **k'* > *k/s* in Jiiddu)

The geminated final consonant is indicated by the Jiiddu attestation of *sok* in place of the shape **suuh* to be expected if the root were **ʃook'*-.

35. **ʃonb-* 'lung'HEC: Sidamo *ʃomb-o* 'lung'; Burji *ʃomb-i* 'lung';LEC: Soomaali *sanb-ab* 'lung' (old pl. form by final-consonant reduplication: lungs occur in pairs); Jiiddu *samb-ab* 'lung' (derivation as in Soomaali proper); Arbore *sonb-ot* 'lung' (stem plus **t* singulative suff.); Oromo *somb-a* 'lung'

The Highland East Cushitic evidence shows that this root should reconstruct with initial **ʃ* rather than **s* as sometimes previously posited.

36. **ʃoor-* 'to feed'LEC: Soomaali *soor* 'food; to entertain with food and drink'; Oromo *soor-* 'to feed, nourish'

Sidamo *soor-* 'to feed' must be reckoned a loan, probably from Oromo, because it fails to retain /*ʃ*/ as it generally does elsewhere in environment /*o* (#32 and #35 above and #37 and #44 below).

37. **ʃoʃal-* 'four'HEC: Sidamo *ʃool-e* 'four'; Hadiya *soor-o, soo'l* 'four';Yaaku *ʃwen* 'four' (non-geminate PEC **l* > *n* /VCV_# in Yaaku; Heine [1975] records *ʃwen*);Dullay: Harso, Dobase, etc. *salaħ-* 'four'

The Dullay reflexes show metathesis along with the same process of sibilant assimilation evident among the reflexes of PEC 'nine' (#105 below), namely, word-initial **ʃ* > /*s*/ in a word normally uttered in sequence with an immediately preceding word beginning in **s*, in this case for 'three' (#13 above). PD **ħ* from PEC **ʃ* /#CIV_- is an apparently regular shift (Ehret [1987:117 and 120]). This root also appears in Southern Cushitic as Dahalo *saʃale* 'four'; PSC and PC **ʃ* > *s* and **o* > *a* /#C_CaC- in that language. Note that this evidence requires a revised PEC formulation of the root as **ʃoʃal-* rather than **ʃaʃl-*, as proposed in Ehret [1987:120].

38. **šuu*b- ‘belly’
 HEC: Sidamo *suuw-o* ‘umbilical cord’;
 Yaaku *šoo* ‘chest’
39. **šuk*’- ‘to be knocked apart, pounded up’
 HEC: Hadiya *suk’k*- schlagen, durch schlagen lockern’; Burji *šusk*’- ‘to smash’ (regular metathesis of stem plus Cushitic caus.: see Sasse [1982]);
 LEC: Soomaali *suq-ul* ‘dust mixed with pulverized dung raised by the wind and deposited in water, food, drink’ (stem plus Cushitic n. suff. in **l*)

This root is one of four partially resemblant but distinct PEC roots having variously to do with hitting or loosening by hitting: see #75, #78, and #165 below for more on this matter. Soomaali *sukul* ‘pestare qs. per togliere l’embrione (og. granaglie)’ and its derived noun *sukuliye* ‘kind of pestle’ have shapes explainable by their having originated as loanforms of this root derived from an Afar-related language. The root is not yet recorded from Afar, however.

40. **šuu*k’- ‘narrow (thing)’
 LEC: Soomaali *suuq-an* ‘to be(come) long and thin’ (stem plus Cushitic **m* intr. extension); Oromo *suuq-a* ‘corner, narrow place’; *suuq*- ‘to stick into corner, small place’
41. **šuu*ll- ‘nail, claw’
 HEC: Sidamo *suull-ico* ‘fingernail’;
 LEC: proto-Soomaali **suul* ‘nail’ (Northern Soomaali ‘thumb’);
 Dullay: Harso *šušull-e* ‘claw’ (partially reduplicated stem)
42. **baš*- ‘grassy area’
 HEC: Hadiya *bass-o’o* ‘hay’; Burji *baš-aa* ‘grass’;
 LEC: Oromo *bos-on-a* ‘fertile lowland; grassland’ (stem plus Cushitic n. suff. in **n*; /*o*/ < PEC **a* is the shift seen in #1 and #4 but in reverse environment);
43. **biš*- ‘body’
 HEC: Sidamo *bis-o* ‘body’
 LEC: Afar *bis-a* ‘turtle’ (semantics: see comments following); Soomaali: Baraawe *biyi* ‘skin’;
 Dullay: Harso, Dullay *piš-ko* ‘body’; Saamakko *biš-ko* ‘body’

The Dullay reflexes of this root have previously been adjudged loan-forms of a distinct PC root, **biz*- ‘limb of the body’ [Ehret 1987:56], but the evidence presented here corrects that attribution. The LEC reflexes share a underlying semantic innovation, a shift in meaning to ‘skin,’ from which Afar ‘turtle’ can be derived via the sequence, ‘skin’ > ‘hull, shell’ > ‘turtle shell.’

44. **booʃ-* or **b'ooʃ-* ‘to be spoiled, messed up’
 HEC: Sidamo *booshaal-* ‘to be untidy, disorderly’ (verb < underlying adj. composed of stem plus Cushitic adj. suff. in **l*);
 LEC: Soomaali *boos* ‘cosa rovinata o logora; persona sfibrata; zoppo’; Oromo *boos-ess-a* ‘not good-looking, untidy (masc.)’ (*boos-ett-ii* fem.); *boos-umm-aa* ‘untidiness’ (stem plus Cushitic n. suff. in **m*)
45. **gaʃ-* ‘abundant hair’
 LEC: Soomaali *gas* ‘peli del corpo abbondante o lunghi’; Oromo *gass-aaw-* ‘to be bushy (of hair)’ (stem plus Cushitic **w* inchoative as denominative)
46. **weʃ-* ‘to swell; swelling’
 HEC: Sidamo *wos-a* ‘abscess on animals’;
 LEC: Afar *os-* ‘to increase, be more’; *os-a* ‘wart’; Oromo *wess-ee* ‘paralytic disease (swollen belly and face)’

Several other PEC roots previously cited as containing *ʃ still appear valid: *ʃ*aʃ-* ‘cow’; *ʃ*uʃs-* ‘to smell (tr.)’; *ʃ*awʃ-*/*ʃ*ayʃ-* ‘grass’; and *ʃ*iʃ-* ‘to plant, fix to the ground, build’. The transitive verb *ʃ*uʃs-* ‘to smell’ is clearly built on an underlying intransitive root *ʃ*uʃ-* ‘to smell,’ seen also in the following root, where *-*n-* is probably the Cushitic noun suffix in **n*.

47. *ʃ*uʃn-* ‘odor, bad smell’
 HEC: Sidamo *su'n-* ‘to smell, give off an odor’ (back-formation from the original noun; compare Sidamo entry in #16 above for a parallel derivation);
 LEC: Soomaali *suun* ‘odore cattivo’

One other root containing PEC *ʃ, #218, appears among the evidence for **x* taken up below. At least one root previously reconstructed with **s*, **naʔs-* ‘breast’ [Sasse 1979], known so far only from the Soomaali group of Eastern Cushitic languages (as defined in Ehret and Ali [1983]), may alternatively be posited as **naʔʃ-*, since PEC *ʃ usually produces /s/ throughout that group.

Another root, #48, recorded as yet only from Lowland East Cushitic, has previously been argued to contain medial *ʃ [Sasse 1975]. The Soomaali reflex of this root has, however, a particular shape—with a long vowel both preceding and following the medial consonant—that normally implies a reconstructible geminancy of the consonant in question. The outcome of intervocalic PEC **ss* in Oromo is not certain (in #45 and #46 above, gemination in Oromo is a secondary morphological development). If, as seems possible, it produced single /s/, then this root could attest either **s* or *ʃ. If the Burji reflex is not a loanword, its outcome /s/ would settle the issue in favor of original PEC **s*.

48. **haassaw-* or **haaššaw-* ‘to chat, converse’HEC: Burji *haasaaw-* ‘to chat’;LEC: Afar *haasaw-* ‘to chat, converse (with one participant having to be female)’; Soomaali *haasaaw* ‘to talk, converse, speak’; Oromo *haasa(w)-* ‘to talk, converse’; Konso *haasaw-* ‘schwätzen’

Several further roots, some previously presumed to begin in PEC **s*, may on the available evidence contain either PEC **š* or **s*. In each case attestations in Dullay or Yaaku would help resolve the issue. Two of the roots seem old variants of one original root, differing only in the stem vowel:

49. **sabʔ-* or **šabʕ-* or **sabʔʔ-* or **šabʕʕ-* ‘soaked matter’HEC: Sidamo *sabb-a* ‘mud, soil that has been moistened’; *sabb-*, *sabb-aw-* ‘to be dirty with mud, turbid’; (stem plus Cushitic **w* denominative);LEC: Afar *sabb-a* ‘seaweed, algae, scum/weeds in stagnant water’; *sacab* ‘seaweed’ (metathesized shape of root); *sabb-aaw-* ‘to be washed up on the tide’ (stem plus Cushitic **w* inchoative); Oromo *sapʔapʔ-uu* ‘slippery growth in river’ (partially reduplicated stem)

Northern Soomaali dialect *sabbee* ‘to float’ (which adds Cushitic **y* denominative verb extension to the root) is a borrowed form of this root, adopted from an extinct Afar-related language, because it shows the expected Afar outcome **sabb-* rather than the regular Soomaali result **saab-* (see also §3 below).

50. **subʔ-* or **šubʕ-* or **subʔʔ-* or **šubʕʕ-* ‘slippery matter’LEC: Soomaali *suub-aan* ‘pietra levigata, liscia; pianura di sabbia rossa’ (stem plus Cushitic n. suff. in **n*); Oromo *supʔ-ee* ‘clay’

If a third root, for which Dullay reflexes can be proposed, turns out to be still another variant of this stem, with PEC **i* as the stem vowel instead of the **a* or **u* of #49 and #50, PEC **s* would be verified as the original initial consonant, and PEC **b* as the medial consonant, of this triplet of roots:

51. **siʔb-* or **siʕb-* or **siibb-* ‘to become wet’LEC: Arbore *siib-* ‘to anoint, smear’;Dullay: Harso, Dobase *siip-*, Gollango *siipp-* ‘schwitzen’

But that possibility remains to be adequately established. Harso *sip-te* ‘flacher Korb für Lehm und Fladenbrot’ cannot be made to fit phonologically in this set.

Three further roots ambiguous as to whether their first consonants were PEC **s* or **š* can be noted at this point:

52. **sikk-* or **ʃikk-* ‘dust’
 HEC: Hadiya *sikk-o* ‘dust’;
 LEC: Soomaali: Garree, Tunni *siig-o* ‘dust’
53. **sik’k-* or **ʃik’k-* ‘large stick’
 HEC: Sidamo *siqq-o* ‘stick’; Hadiya *siqq-o* ‘Stock’;
 LEC: Soomaali *siiq-e* ‘grosso bastone’
54. **siʔb-* or **ʃiʔb-* or **siʔb-* or **ʃiʔb-* ‘to extract, draw out’
 LEC: Afar *siib-* ‘to unshathe, uproot’; Soomaali *siib* ‘tirar fuori qs.; estrarre qs.; svellere qs.’; Oromo *sip’p’-ad’d-* ‘to scoop and eat with the hand’ (stem plus EC middle voice extension)

The Soomaali reflex seems quite regular here. If it nevertheless turns out to be a loanword from an Afar-related language, a third reconstruction, **ciʔb-* or **ciʔb’-*, would become possible for this item.

Another root previously suggested to attest PEC **ʃ* in fact shows a variety of non-correspondences in every consonant and vowel. Its occurrences include Oromo *soodda* ‘salt’ and *soogida* ‘(bar) salt,’ along with Konso-Gidole *sookitta*, Arbore *sugudda*, Dasenech *ʃugutti*, Gollango *soqo*, Harso *sookisso*, Hadiya *sogedo* and *soqedo*, and Burji *sogoddi*, all meaning ‘salt’. Its welter of shapes show it to have spread repeatedly by borrowing. It probably does ultimately derive from an ancient Cushitic root, PC **dzax^w-*, seen also in Southern Cushitic Kw’adza *dzox-ondo* ‘natron’. In that case its PEC form would have been **cox-* or **cax-* (see root #604 in Ehret [1987:140]). But the *Wanderwort* characteristics of its modern Eastern Cushitic forms would seem to rule out its transmission as an inherited member of PEC vocabulary and instead point to its having reached Eastern Cushitic languages from some other Cushitic source by more recent diffusion.

1.1.3. Proto-Eastern Cushitic **c*. The third sibilant correspondence set is surely attributable to an originally palatal PEC consonant. We are left with PEC **c* as its representation not only because PEC **s* is already accounted for, but because Hayward, using Saamakko data, shows it to have been originally **c* in certain environments in Dullay. In most Dullay dialects its reflexes have fallen together wholly with those of PEC **ʃ*, hence its appearance usually as /*ʃ*/ in the Dullay citations that follow. In proto-Soomaali it remained at first apparently **c*, still its outcome in the Rendille language of the Soomaali subgroup. The number of /*c*/ in the vocabulary was considerably enlarged at the second stage of Soomaali differentiation, proto-Soomaali-II (see Ehret and Ali [1983] for this history and the evidence for it), by the palatalization of PEC **k* in following front-vowel environments. At the next stage of Soomaali differentiation, proto-Soomaali-III, all /*c*/, both from PEC **c* and from palatalized **k*, became **ʃ*, filling the slot in the system earlier left vacant by the falling together in proto-Soomaali-I of most

PEC *ʃ and *s as PS *s. A separate, but in many respects parallel, course of development also produced /ʃ/ from PEC *c in the Jiiddu branch of Soomaali (Ehret and Ali [1983] chart these courses of change with respect to palatalization of *k).

PEC *c appears to have been a very common consonant indeed.

55. *cag- 'tip, top part'

HEC: Burji *sag-a* 'roof';

LEC: Oromo *sagg-oo* 'back of head'

The wider Cushitic evidence [Ehret 1987:141] confirms the reconstruction of PC and thus PEC *g (rather than PEC *g') in this root.

56. *cal- 'to disapprove of'

HEC: Sidamo *shal-* 'to despise, scorn, dislike, loath';

LEC: Afar *sal-i* 'chastisement, correction, reproof'; *sal-it-* 'to chastise, reprimand, improve' (stem plus Cushitic *t continuative as denominative); Soomaali *shall-aa* 'to feel regret'; *shall-ay* 'regret'

57. *caal- 'to be narrow'

HEC: Sidamo *shaal-* 'to be narrow, slim, thin';

LEC: Soomaali *shal-aw* 'narrow place'

The vowel correspondence apparently reflects a regular sound correspondence of limited occurrence, seen also in #79 below: PEC *aa > Soomaali a /#c_l-. The preceding root, #56, evinces the correspondences for short PEC *a in this environment.

58. *cam- 'to rot, get wet'

HEC: Sidamo *sham-* 'to rot, go rotten; be wet, damp, humid'; Hadiya *ʃam-a* 'faulig, modrig'; Burji *sam-* 'to be drenched, become rotten with wet [sic]';

LEC: Soomaali: Bayso *ʃem-* 'to become rotten'; Oromo *sam-* 'to become mouldy, spoiled, become dirty'; Konso *ʃam-* 'to cool down, become numb'

59. *car- 'to grasp'

HEC: Sidamo *sharr-am-* 'to endeavor, to strive, to fight with one another, to make hand-to-hand struggle' (stem plus Cushitic *m intr. extension, here with reciprocal connotation);

LEC: Soomaali: Jiiddu *ʃar-aw* 'to milk' (stem plus Cushitic *w inchoative); Arbore *sar-* 'to snatch'

60. *carb-/*cirb-/*curb- ‘thin stick’

LEC: Afar *sarab* ‘long thin saplings used for building purposes’ Jiiddu *shuruw* ‘penis’ (PEC *b > w /V_ in Jiiddu);

Yaaku *sirp-i* ‘stick’

Northern Soomaali *sarab* ‘ramaglia per costruzioni’, lacking regular sound correspondence in having /s/ for required /ʃ/ and exactly reproducing the meaning of the Afar reflex (which does show regular correspondence throughout), must be considered a loan from an Afar-related language.

61. *carrf-/*cirrf-/*currf- ‘clump of hair’

LEC: Soomaali *shaaruf* ‘peli di animale’; Jiiddu *sharuuf* ‘lion's mane’; Tunni *shuruf* ‘lion's mane’; NW Maay *shuruf* ‘end of cow's tail’;

Yaaku *siririp* ‘white hair’

62. *caww- ‘to go away, withdraw’

HEC: Sidamo *shaww-u yaa* ‘to withdraw, draw aside’;

LEC: Soomaali *shab-i* ‘to drive away, expel’ (stem plus regular Soomaali -i reflex of EC caus.)

63. *caʃʃ- ‘to burn (intr.)’

HEC: Hadiya *ʃa'-iss-* ‘Licht anzünden’ (stem plus caus.);

LEC: Soomaali *shaac* ‘luce irradiata’

Gollango (Dullay) *ʃaʔa* ‘warm; Wärme’ is a loanword, probably from the Konso group, by reason of its containing /ʔ/ rather than required *ʃ.

64. *cerr-/*corr- ‘to send away, take away’

HEC: Sidamo *shorr-* ‘to drive away, chase away’;

Yaaku *-ser-en-* ‘to carry on back’ (stem plus old Cushitic *n extension of non-finitive action)

65. *cet- ‘to be small’

HEC: Sidamo *shet-* ‘to be in a miserable condition, be humbled, suffer’; *shet-a* ‘little, small, despicable’;

Dullay: Dobase, Gollango *ʃett-e* ‘girl; daughter (not one's own)’

66. *cib- ‘to become motionless’

HEC: Sidamo *shibb-i yaa* ‘to become stiff, stiffen (as the face for [sic] anger)’;

LEC: Soomaali *shib* ‘silence, quiet’; *shibb-i* ‘to make silent’ (stem plus caus. -i); *shibb-an* ‘to be silent’ (stem plus EC *-m- intr. extension > regular stem-final /n/)

67. **cig-* or **cig'*- 'to take loose'
 HEC: Sidamo *shigg-a* 'removed foreskin';
 Dullay: Gollango *šik-* 'loslassen'; Gawwada *šik-* 'to release'
68. **ciigg-* 'to move by dragging'
 LEC: Oromo *sigig-oo* 'sliding';
 Yaaku *-siik-* 'to drag'
69. **cik'*- 'to move a short distance'
 HEC: Sidamo *shiq-* 'to approach, come near'; Hadiya *šiq-* 'vorbeigehen; zur Seite treten'; *šiq-a* 'near';
 LEC: Oromo *siq-* 'to move a little; drag on; push on something'

Soomaali *siko* 'to move a little' shows the deglottalization of the velar and the presence of /s/ (instead of regular /š/), both typical of Afar and thus, like a large number of words in the "standard" Northern Soomaali, it must be considered a loanform of this root, borrowed from an extinct Afar-related language. The root has not yet been noted in Afar itself.

70. **cin-* 'to attach'
 HEC: Sidamo *shinshin-* 'to sew a piece of cloth; plait; gather in (the skirt)' (reduplicated stem); Hadiya *šin-e'e* 'surroundings, neighborhood';
 LEC: Soomaali *shin-so* 'to be attached to something'
71. **ciink'*- 'to become thin, weak, slight'
 HEC: Sidamo *shiiŋq-a* 'dwarf, small thing, little thing';
 LEC: Soomaali *shiiq* 'to exhaust slowly (e.g. foam of liquid); to become weakened'; Oromo *siiq-ee* 'reed; thin person'
72. **ciʔ-* or **ciʃ-* 'hurry'
 HEC: Sidamo *shi'-am-* 'to hasten to do something' (stem plus EC **m* intr.);
 LEC: Oromo *si'-a* 'alertness, quickness'
73. **cok-* 'to wind, twist (intr.)'
 HEC: Sidamo *shokk-* 'to be crooked'; Hadiya *šok-* 'spulen';
 LEC: Afar *sok-* 'to curl hair into ringlets' (men)
74. **cokk-* 'to go away'
 LEC: Oromo *sokk-* 'to go away';
 Yaaku *-sok-s-* 'to remove, take away' (stem plus EC caus.)
75. **cok'*- 'to loosen, break up'
 HEC: Sidamo *šooq-al-aam-o* 'broken, not compact' (said of a kind of cake) (stem plus Cushitic **l* adj. suff. plus Cushitic n. suff. in **m*; vowel length is not yet

explained); Hadiya *šo'*- 'locker sein'; *šo'-all-a* 'locker' (stem plus Cushitic **l* adj. suff.);

LEC: Soomaali, Garre, Tunni, Jiiddu *šaqašaqa* 'to sieve; sieve' (reduplicated stem); Oromo *soq-* 'to chip, weed, cut off, dig up'

Sidamo *soq-* 'to cut grass on threshing floor' fails to show expected /*ʒ*/ for PEC **c* and thus must be considered a loan in a technically narrowed sense from Oromo. The additional Sidamo meaning for *soq-*, 'to crush, smash', surely reflects a distinct course of lexical history, the confusing in Sidamo of two separate PEC roots **ʃuk'*- (#39 above) 'to be knocked apart, pounded up', the expected outcome of which would have been **sug-*, and **j'ok'*- (#165 below) the reflex of which should have been **šoq-*. A fourth root resemblant to these three in shape and meaning, but not confused with them in Sidamo, is #78 below.

76. **colool-* 'to remove, loosen (skin, bark, etc.)'

HEC: Sidamo *sholool-* 'to take the bark off a tree';

LEC: Afar *saloo-t-*, *soloo-t-* 'to circumcise' (stem plus Cushitic **t* continuant extension with presumed elision of second **l*: **solool-t-* > *soloo-t-*); Oromo *solool-oo* 'tall tree without lower branches'

Burji *sool-* 'to peel, strip' is a loanword from an Omoto language (Sasse [1982] citing Hayward, personal communication; and independently by the writer). The Omoto form itself can be considered a reflex of the same root seen in Eastern Cushitic, deriving through proto-Omotc from a common Afroasiatic base.

77. **cub-* or **cub'*- 'to spill'

HEC: Sidamo *shup'-p'-i ass-* 'to piss' (middle voice stem: **cub-* plus **-d'*- middle voice marker; *ass-* 'do');

LEC: Soomaali *shub* 'to pour'

78. **cuk'*- 'to strike with a tool'

HEC: Sidamo *shuq-un-* 'to weed a field, hoe around a tree' (stem plus old Cushitic **n* non-finitive extension);

LEC: Soomaali *shuq-ee* 'to prod, poke; to pound lightly to separate the chaff'

Hadiya *ʃukun-* and *sukkun-*, 'to weed,' both of which lack the required glottalic reflex **k'* and one of which shows *s* for expected *ʃ*, are probable confusions of the HEC form of this root with Oromo *sukkum-* 'to weed,' the source of which remains to be satisfactorily established.

79. **cuul-* 'to cut in pieces'

HEC: Sidamo *shuul-* 'to cut in little pieces';

LEC: Soomaali *shulshul* 'frange; mettere frange a qs.' (reduplicated stem)

See #57 above for the vowel sound correspondence present here.

80. **cur-* ‘to inhale’

HEC: Burji *sur-aa* ‘salt-licking place for cattle’;

LEC: Afar *sur-uy* ‘odor, smell’ (stem plus Cushitic *y n. suff.);

Dullay: Gawwada *šurr-* ‘to suck’; Saamakko *šur-* ‘to suck’

The word *sur* ‘neck’ (semantics: locus of breathing), found in northern Soomaali dialects, probably comes from this root, but because of its attestation of /s/ instead of the expected /š/ it should be numbered among the numerous loanwords in standard Soomaali from an extinct Afar-related tongue.

81. **bac-* or **b’ac-* ‘front’

HEC: Sidamo *bassh-o* ‘before, in the past’

LEC: Afar *bas-o* ‘forehead’

82. **baaccal-* or **b’aaccal-* ‘to pass time enjoyably’

HEC: Hadiya *baššal-* ‘den Tag verbringen’;

LEC: Soomaali *baashaal* ‘to divert oneself, amuse oneself; diversion, amusement’;
NW Maay *baashal* ‘story’

The Dullay form of this root (Harso, Dobase *paasar-ko* ‘story’) is a loan-word because it shows /s/ rather than the required correspondent /š/ (proto-Dullay *c). The significance of its attestation of root-final /r/ in place of expected /l/ is not clear. Possibly this feature reflects borrowing from an HEC language, in some of which a stem-final *l > r shift appears. Within HEC, /s/ for PEC *c is seen in Burji but not elsewhere.

83. **buc-* or **b’uc-* ‘groin, crotch’

HEC: Sidamo *buss-h-e* ‘proper name of a woman in Sidamo tales’;

LEC: Afar *bus* ‘vagina, female organs’; NW Maay *bush-uj* ‘corner of eye’ (stem plus Cushitic n. suff. in *n or *m, > η /_# in Maay masc. n.)

84. **daacc-/duucc-* ‘to put over, put above’

HEC: Sidamo *daassh-* ‘to spread (cement, metal on)’;

LEC: Afar *daas* ‘hut, Koranic school’; Soomaali *daash* ‘verandah’; Jiiddu *daash* ‘shelter in fields’; Oromo *duucc-* ‘to cover, stop up’;

Dullay: Dobase *taš-* ‘bedecken’

85. **ficc-* ‘thick fluid’

LEC: Soomaali *fīsh* ‘pus produced from conjunctivitis’;

Dullay: Saamakko *picc-e* ‘whey’; Gollango *fīš-a* ‘whey’

86. **gacc-* or **g'acc-* ‘blemish, mark in the skin’

LEC: Soomaali *gaash-i* ‘grosso neo; chiazza sul pelo di un animale; alone’; Oromo *gacc-ii* ‘farm animal whose ear is split’

87. **gaaccan-* ‘shield’

LEC: Soomaali *gaashaan* ‘shield’; Oromo *gaaccan* ‘shield’;

Dullay: Gollango *kaašan-ko* ‘shield’

Burji *gaazee* ‘shield’ is probably not the same root, since no known Eastern Cushitic languages gives /z/ as its reflex of PEC **cc*. But it could well be a borrowed form of another PEC root, **gaazz-* ‘shade’, i.e. something that covers.

88. **goc-* or **g'oc-* ‘to pull toward one’

HEC: Sidamo *gosh-* ‘to pull, uproot, draw out’; Hadiya *goš-* ‘to milk’;

LEC: Soomaali *gash-o* ‘to put on (clothes)’

89. **kacc-* ‘shoulder’

LEC: Soomaali: Rendille *kac* ‘chest’;

Dullay: Gollango *haš-itto*, Gawwada *xaš-ito* ‘shoulder’; Saamakko *kacc-a* ‘shoulder’

Burji *kacc-o* and Arbore *kacc* ‘shoulder’ are loanwords, most likely from an earlier Dullay source. The form *kac* ‘chest’ in the Elmolo dialect of Arbore would appear, from its semantic identity with the Rendille reflex, to be a separate loanword from earlier Rendille. This root is not to be confused (contra Sasse [1982:112]) with PEC **kesf-* ‘chest’—well attested by Soomaali *shaf* (< earlier **šef-* < **šesef* < PS **kesef-* by regular Soomaali-II palatalization of PEC **k*), Konso *kess-a*, and Yaaku *kehp-en*, all meaning ‘chest’—which differs in its stem vowel as well as its consonants. PEC **kacc-* derives from a PC root for ‘shoulder’ also found in the Agaw branch of Cushitic [Ehret 1987:142], while **kesf-* can with lesser confidence be connected up to another PC root [Ehret 1987:47, 98]. The skewed vowel correspondence in Harso *hešš-e* ‘shoulder’ may have been caused by the influence of the resemblant Konsoid *kess-a* (< **kesf-*).

90. **kicɿ-* ‘to laugh’

LEC: Afar *kixixiq-t-* ‘to giggle’ (stem partially reduplicated by *CVCVVC pattern as in #24, #137, #166, and #201, plus Cushitic **t* continuative);

Dullay: Gollango *kišaɿ-*, Gawwada *kiššaɿ-* ‘to laugh’; Saamakko *kicaɿ-* ‘to laugh’

The Afar reflex shows a voicing of PEC **c* in the particular environment #CV_VC, by a rule that, to produce modern Afar *x*, should have operated before PEC **j*’ (for which see §1.3 below) fell together with **d*’. If the postulation [Ehret 1987] that the collapsing of PEC **d*’ and **j*’ took place in the common proto-Lowland East Cushitic ancestor language of Afar, Soomaali, Oromo, etc.,

is correct, then evidence of the limited voicing shift of PEC *c noted here for Afar should be found eventually in other LEC languages.

91. *kiyyacc- ‘to watch, gaze’

HEC: Sidamo *keessh-* ‘to be late, await, linger’ (semantics: ‘to watch’ > ‘to wait (for)’); *kecci yaa* ‘to look at with wide open eyes; to stare at fixedly’;

LEC: Afar *kyaas-* ‘to measure’; Soomaali *shiish* ‘sight; to look, fix the gaze on’ (regular palatalization here: *k > sh/_i)

The evidence in this entry provides a basis for deciding the reconstruction of the medial segmental sequences in roots #147, #161, and #162 below, where parallel sets of vowel correspondences obtain. Sidamo /cc/ in its second entry is taken to be the outcome of geminated *cc (or Sidamo /šš/) in the environment /#CV_VC- (see also #181 below for the possible operation of the same rule, but where Sidamo /šš/ has a different PEC source).

92. *k'ooc- ‘to scrape (off)’

HEC: Burji *k'ooš-* ‘to peel’

LEC: Soomaali: Bayso *oš-* ‘to dig’; Gidole *k'ošš-* ‘to weed’;

Dullay: Gollango *qooš-* ‘kratzen’

The Burji form here, because of its distinct meaning, is not easily derived as a loan from any of the languages in which PEC *c regularly yields /š/. On the basis of the parallel Burji outcome in root #100 below, where again there is no obvious loan-source—and lacking any counter-examples as yet—PEC *c is provisionally proposed to give Burji /š/ in the limited environment of /o(C)_. The Lowland East Cushitic cognates show a shared innovation, an underlying shift of application of the verb to the scraping off of the ground by human activity.

93. *lac- ‘day’

HEC: Burji *las-a* ‘day’;

LEC: Gidole *lašš* ‘sun, day’

94. *macc- ‘drunkenness’; *macc-aaw- ‘to get drunk’

HEC: Burji *mass-aaw-* ‘to get drunk’;

LEC: Oromo *macc-ii* ‘drunkenness’; *macc-aaw-* ‘to get drunk’; Konso *mašš-oo-d-* ‘to get drunk’ (2nd stem plus EC middle voice extension)

The verb root comprises the stem *macc- plus the Cushitic inchoative in *w. Arbore *macce* ‘intoxication’ and *maccow-* ‘to get drunk’ must be reckoned as loans, probably from Oromo, because the regular Arbore shape would be *mass- (see #188 below). Dobase (Dullay) *mass-ad'* ‘to get drunk’, which fails to show

the regular Dobase outcome /šš/ for PEC **cc* and is thus also a loanword, may have been borrowed from Arbore before that language adopted its modern form of the root, or from early Burji.

95. **mic*-/**muc*-/**mac*- ‘to stick out, emerge out of’
 (**micc*-/**mucc*-/**macc*- ‘projection, pointed object’)
 HEC: Hadiya *miš*- ‘Frucht bringen’; *miš-a* ‘Frucht’; Burji *miss-a*, *mus-aa* ‘penis’;
 LEC: Afar *muss-a* ‘small knife’; Bayso *maš-a* ‘knife’ (from non-geminated verb shape **mac*-); *maas-a* ‘horn’ (from geminated noun shape **macc*- by the usual Soomaali-group rule **VCC* > **VVC* /#*C*_(*V*)#); Oromo *mucc-a* ‘teat (animal)’
96. **muc*-/**mic*- ‘to chew slowly’
 LEC: Afar *mus-ay* ‘chewing the soft part of the bone’ (stem plus Cushitic n. suff. in **y*); Soomaali *miishmiish-o* ‘to sip slowly’ (reduplicated stem with geminant **c*: < **micc*-);
 Dullay: Dobase, Gollango *muš-o* ‘Frühstück’

The Soomaali version of this root requires reconstruction of an alternate shape with geminated final consonant, **micc*-.

97. **tac*- ‘pleasant happening’
 HEC: Sidamo *tassh-i yaa* ‘to be pleasant’; *tassh-i ass-* ‘to please’ (*ass-* ‘do’);
 LEC: Afar *tass-a* ‘joy, gladness, happiness, pleasure’; Soomaali *tash-o* ‘to free oneself from dependence on something; to decide on something to one’s advantage’
98. **t’acc*- ‘to seep’
 HEC: Sidamo *t’assh-o* ‘river’;
 LEC: Soomaali *dhash-uun* ‘secreted or oozed substance, sweat, secretion; to secrete, sweat’ (stem plus Cushitic n. suff. in **m* > Soomaali *n* word-final)
99. **t’ucc*-/**t’uuc*- ‘string’
 HEC: Sidamo *t’ussh-o* ‘string, rope’;
 Yaaku *t’oos-o* ‘bow string’

The Yaaku reflex requires the second of the two reconstructed stem shapes. For other examples of an apparent old EC alternance of **CVCC*- and **CVVC*- in roots, see #135, #137, #183, #200, and #207 below.

100. **warcas*- ‘rhinoceros’
 HEC: Burji *worša* ‘rhinoceros’;
 LEC: Oromo *wors-eesa* ‘rhinoceros’; Konso *orš-ayta* ‘rhinoceros’ (both Oromo and Konso add **-ayta* n. suff. to stem, > Oromo *-eesa*);

Yaaku *ɔrse'*, pl. *ɔrse'-en* 'rhinoceros';

Dullay: Gollango *oršaf-te* 'rhinoceros'

This reconstruction revises previous postulations of the root in both its consonants and its vowels. See #92 above for justification of the inclusion of Burji as a regular cognate here, despite its attestation of /ʒ/ for PEC *c.

101. *ʔac- 'here'; *ʔacc- 'there'

LEC: Oromo *as-i* 'here,' *acc-i* 'there';

Yaaku *as-e* 'there (very far)'

102. *ʔac- 'to lack'

LEC: Afar *as-* 'to be absent from'; Soomaali *ash* 'to not feel well' (i.e. lacking health); *ashash* 'to feel nausea, feel aversion' (reduplicated stem);

Yaaku *as-* 'to lack'

103. *ʔaac- or *ʕaac- 'to be wet'

HEC: Hadiya *aaš-* 'to be wet'; *aašal* 'wet' (stem plus Cushitic adj. suff. in /ʔ/);

LEC: Soomaali: Jiiddu *aash-uun*, Garre, Tunni, NW Maay *ash-uuy* 'large water pot' (stem plus noun suffix in *n; pharyngal feature is lost in these languages)

Standard southern Soomaali also has the root in the shape *aashuun*, but since that dialect has probably borrowed the word from one of the southern Soomaali languages in which the pharyngal feature has been deleted, it remains unclear whether this root begins in PEC *ʔ or *ʕ.

104. *ʕac-/*ʕic- 'to shine, glow'

LEC: Afar *qas-* 'to be red'; Soomaali *cashe* 'giorno, arca delle ventriquattro ora a partire dal tramonto'; Oromo *icc-im-* 'to produce fire by rubbing sticks' (stem plus Cushitic *m intr. extension);

Yaaku *is-e* 'smoke'

The word *cas(aan)* 'red,' replacing the proto-Soomaali root for 'red', **guddeet*, only in the Northern Soomaali dialects of the Horn of Africa, is a loanword, adopted from an extinct language closely related to Afar [Ali 1985].

Seven further examples of PEC roots attesting *c appear among the data for the consonants *g, *x, and *ŋ discussed below (see #118, #134-136, #187, #188, and #236). An eighth root containing root-initial *c, PEC **cank-/cink-* 'back,' can be found in previously published materials [Sasse 1976]. There it was proposed to begin in PEC *s, based on a semantically uncomfortable fit between it and an Oromo word beginning in /f/, the usual Oromo correspondent of PEC *s. Leaving aside the questionable Oromo connection, the solid EC evidence is ambiguous as to whether *s or *c should be reconstructed. But the wider comparative Cushitic materials show the etymon to be PEC *c, the shape **cank-*

/**cink-* being the usual and expected Eastern Cushitic outcome of the PC root **dzank^w-*/**dzink^w-* ‘back’ attested also in Beja and Southern Cushitic [Ehret 1987:140].

For several PEC roots the evidence available allows either **c* or **s*, **c* or **ʃ*, or, in two cases, **c*, **s*, or **ʃ* to be reconstructed:

105. **cagaal-* or **sagaal-* or **ʃagaal-* ‘nine’

LEC: Afar *sagaal* ‘nine’; Soomaali *sagaal* ‘nine’; Arbore *saagal-* ‘nine’; Oromo *sagal* ‘nine’;

Yaaku *saakal* ‘nine’

The failure of regular sound correspondence in the word-initial phoneme here is surely attributable to an assimilation shift effected by the usually sequential utterance of ‘nine’ after ‘eight’. The root for ‘eight’ had PEC **s* as its initial segment, which in this particular case was regularly maintained as /*s*/ in each of its Eastern Cushitic reflexes (see #14 above). Depending on whether the sequential assimilation of the initial sibilant in PEC ‘nine’ to the first sibilant of PEC ‘eight’ took place in Oromo (with the usual shift of PEC **s* > Oromo /*f*/ blocked by the occurrence of initial /*s*/ in ‘eight’), or in Yaaku (with expected /*ʃ*/ < PEC **ʃ* assimilated to the initial **s* of ‘eight’), or in Soomaali (with expected /*ʃ*/ < PEC **c* similarly assimilated to the /*s*/ of ‘eight’)—any one of the three sibilants might have been the original initial consonant in PEC. The vowel reconstruction chosen here presumes a metathesis of the long and short vowels in Yaaku and in Arbore, in the latter language probably through the influence of the extinct Yaaku-related tongue which, in a number of other cases, can be shown as the source of loanwords in Arbore.

106. **cak-*/**cik-* or **ʃak-*/**ʃik-* ‘to be lightweight’

HEC: Burji *ʃak-an-ee* ‘light (of weight)’ (stem plus Cushitic adj. suff. in **n*);

LEC: Afar *-isissik-* ‘to be fast, light, easy, lightweight’ [Hayward, p.c., to Sasse 1982]; ‘to hurry’ [Parker and Hayward 1985] (partially reduplicated stem); Konso *ʃakk-* ‘small’

This correspondence set was noted by Sasse [1982], following up on a personal communication from R. J. Hayward. Konso /*ʃ*/ seems to be its regular reflex of PEC **c* (see #58, #92-94, and #100 above). Burji /*ʃ*/, however, regularly derives from PEC **ʃ*, whereas PEC **c* is usually represented by Burji /*s*/. Either Burji or Konso (or possibly both), it must be argued, has borrowed its form from some as yet unidentified EC source language.

107. **cak’r-* or **sak’r-* ‘hips’

LEC: Arbore *sak’ar* ‘hips, waist region’;

Yaaku *saqar* ‘vagina’

108. **caal-* or **šaal-* ‘oryx’LEC: Oromo *saal-a* ‘oryx’;Dullay: Gollango *šaal-to* ‘oryx’

If the Burji reflex *saal-a* is not a loanword, then the reconstruction is clearly **caal-*. But Burji has adopted so many words from Oromo in recent times that the identity of its form with that of Oromo makes it suspect here.

109. **camb'-* or **šamb'-* ‘young man’LEC: Afar *samb-o* ‘genitals of male’;Dullay: Saamakko *šamb'-o* ‘son (of)’; Gollango *šamp-o* ‘Junge’

Some forms of this root in Dullay may have to be explained as loans from Omotic (as proposed by Hayward [1989]), but the items cited here all show unexceptionable EC correspondences.

110. **cer-* or **ser-* or **šer-* ‘kudu’LEC: Afar *sar-a* ‘large kudu’; Arbore *ser-em* ‘kudu’ (stem plus Cushitic n. suff. in **m*)111. **coonc-* or **šoonc-* ‘to make a whirring sound’HEC: Sidamo *shoossh-* ‘to roar’ (of waves on the lake);LEC: Oromo *sons-a* ‘wasp’

Burji *sunsi* ‘wasp’ is a probable loan from Oromo.

One further root in which either **c* or **š* might be reconstructed appears below in the evidence for PEC **g*' (#146). And at least one root previously postulated with initial **š* [Sasse 1975, 1976, and 1979], **šeeb-* or **ceeb-* ‘leather strap’, is ambiguous on present evidence as to whether PEC **š* or **c* is the correct representation of its sibilant.

1.2. Proto-Eastern Cushitic **g*'. The necessity of reconstructing PEC **g*', distinct from the well accepted PEC **g*, is amply supported by the evidence from the Dullay and Yaaku subgroups of Eastern Cushitic. In Lowland Eastern Cushitic and Highland Eastern Cushitic languages **g* and **g*' have fallen together as /*g*/. But in the other two subgroups—except for several instances in which **g*' has been confused with Dullay's and Yaaku's unusual implosive uvular reflex of PEC **k*'—the two consonants have retained distinct outcomes. In Yaaku and most Dullay dialects, PEC **g* has devoiced to /*k*/ as part of a general rule devoicing the simple PEC obstruents, inter alia shifting **b* to /*p*/, **d* to /*t*/, and **z* to /*s*/. PEC **g*', on the other hand, follows the pattern of the established PEC voiced glottalic **d*' in remaining voiced in both Dullay and Yaaku. In Yaaku and some Dullay dialects it is overtly articulated as an implosive—hence the need to reconstruct it

as glottalic also in PEC. In one Dullay dialect, Saamakko, the devoicing rule did not operate, and as a result PEC *g persists there as /g/, while the posited PEC *g' indeed yields /g'/.

One sound shift affecting medial non-geminant *g', devoicing it to *k when the preceding consonant is a sibilant, appears to be diagnostic of the Lowland East Cushitic branch (examples in roots #136, #146, #148, and apparently #145). Because the voicing distinction has been lost in post-vocalic position in Soomaali, the Soomaali data is non-determinative for this shift, e.g. #144 for which only a Soomaali example from Lowland East Cushitic is known. Afar also shows devoicing of *g' in its single case here of the environment #bV_# (#133); whether this might be a general Afar rule affecting pre-Afar *g from both PEC *g and *g' remains to be studied.

112. *g'ab-/*g'ib- 'to lie still'

LEC: Afar *gabb-ooow-* 'to wait a long time' (stem plus Cushitic *w inchoative); Soomaali *gaggab* 'to be unconscious'; Oromo *gab* 'still, calm, stopped'; *gaggab-* 'to faint, become unconscious';

Dullay: Saamakko *g'ipp-* 'to sleep' (gemination as durative?)

The South Lowland East Cushitic languages Soomaali and Oromo share an innovated form by reduplication, **gaggab-* 'to be(come) unconscious'; it may be an assimilated version of a once fully reduplicated shape **gabgab-*.

113. *g'aad'- 'to observe'

LEC: Afar *gaax-* 'to guard, protect';

Dullay: Dobase *gaad'-*, Gollango *g'aad'-* 'denken (an)'

114. *g'aħr- 'hard covering'

LEC: Afar *gacar* 'outcrops of crumbly rock, rocky terrain';

Yaaku *geher-oni* 'cowry shell'

115. *g'al- 'to bend, curve'

HEC: Sidamo *gangal-at-* 'to roll up (intr.)' (partially reduplicated stem plus Cushitic *t continuative extension);

LEC: Afar *gal-e* 'corner'; Soomaali *gal* 'halo of light which forms around the full moon some days of the month';

Dullay: Dobase *gal-*, Gollango *g'al-* 'biegen'

116. *g'an-/*g'un- 'to hit, strike'

HEC: Sidamo *gan-* 'to beat, hit, strike';

LEC: Soomaali *gan* 'to strike (with arrow or the like); to fling';

Dullay: Dobase *gun-d'-*, *gon-d'-* 'brechen, zerbrechen'; Gollango *g'on-d'-*, *gun-d'-* 'zerbrechen'

Dullay reflexes add the Eastern Cushitic *d' middle voice extension to the verb root, shifting the focus of action from the hitting to its effects.

117. *g'ant- 'to give milk'

LEC: Soomaali *gand-al* 'skin of muzzle of dead calf used to get cow to let down her milk' (stem plus Cushitic n. suff. in *1);

Dullay: Harso *gan-ce*, Gollango *g'ant-e* 'udder'

Stem-final *t has been assimilated to the Dullay *t feminine gender suffix in Harso (PEC *t > Harso /c/)

118. *g'eecc- 'big, large, great'

HEC: Sidamo *geessh-a* 'stature, breadth, height, dimension';

Dullay: Dobase *gees-akko*, Gollango *g'ees-akko* 'Greis'

119. *g'er- 'to call out'

LEC: Soomaali *jar* 'gioco simile alla dama' (*ger- > *jer- > jar);

Dullay: Dobase *ger-is-* 'zujubeln' (stem plus EC caus.)

Oromo *geerar-* 'to sing a kind of song,' Soomaali *geeraar*, for a kind of war song, and Sidamo *geeraar-* 'to chant war songs; to utter war boasts' clearly reflect the diffusion of a form of this root by borrowing. The source is unknown, but the lengthening of the stem vowel suggests an underlying shape *gerraar-, with the CV*CaaC*- vocalization pattern of reduplication, e.g. instances in #10 and #15 above) and a *VCC > *VVC shift such as occurs regularly in Afar and Soomaali, among others (see §3 below). Soomaali cannot be the source, however, since its form lacks the regular Soomaali palatalization of *g before a front-vowel.

120. *g'erɣ- 'to wear out'

HEC: Sidamo *geer-co* 'old person';

LEC: Oromo *jaar-sa* 'old person'; Konso *kerɣ-* 'to be old';

Yaaku *-gere'* 'to be tired'

The Yaaku form requires this revision of the root shape *g'erɣ- given in Sasse [1979].

121. *g'id'd'- 'flesh'

LEC: Soomaali *jiidh* 'polpa di carne';

Dullay: Harso, Dobase *gid'-a*, Gollango *g'id'd'-e* 'mageres Fleisch'

122. **g'im-* 'to slice, cut into'
 Yaaku *-gem-* 'to notch';
 Dullay: Saamakko *g'im-* 'to reap'
123. **g'in-* 'to twist (string, rope, etc.)'
 LEC: Afar *gin* 'to braid, twist, wind';
 Dullay: Gollango *g'in-t-o* 'Perlenband' (stem plus Cushitic n. suff. in **t*)
124. **g'iin-* 'to stay in place'
125. **g'iind-/ *g'aand-* 'residence' (#124 plus **t* n. suff. with voicing assimilation?)
 HEC: Hadiya *giin-* 'to become steady, firm; come to rest'; Burji *gand-i* 'enclosure for cattle and settlement outside the village';
 LEC: Afar *gaant-a* 'village'; Oromo *gand-a* 'village';
 Dullay: Harso, Dobase *gint-e*, Gollango *g'int-e* 'Hof (des Gehöfts)'

For Afar voicing/devoicing alternations in nasal clusters, see also #22 above and #130 below.

126. **g'obl-* 'to cut off'
 LEC: Soomaali *gobol, gabal* 'piece, part; portion';
 Dullay: Dobase *gopol-* 'to castrate'; Gollango *g'opol-ko* 'billy-goat' (goat wether?)
127. **g'oh-/ *g'eh-* 'to become big, grow'
 LEC: Arbore *geh-* 'to become fat';
 Dullay: Saamakko *g'oh-* 'to become big, grow'
128. **g'ub-* 'to make, build'
 HEC: Sidamo *guw-, gubb-* 'to produce, put out' (of plants, animals)
 LEC: Afar *gub* 'permanent residence'
 Dullay: Harso *gup-*, Gollango *g'up-ad'-* 'to build'
129. **g'uḥ-/ *g'aḥ-* 'to flow'
 LEC: Afar *guc-um* 'water from a geyser' (stem plus Cushitic deverbative in **m*);
 Soomaali **guḥ* 'long rains'; Arbore *guh* 'year, rainy season'
 Dullay: Saamakko *g'ah-am-* 'to flow'; *g'ah-is-* 'to pour'

This entry corrects and revises an earlier postulation (in Sasse [1979]).

130. **g'unt-* 'thing that sticks out'
 HEC: Sidamo *gunt-ut-* 'to bud (new leaves)'; *gunt-ut-a* 'bud' (stem plus Cushitic **t* continuative extension apparently as denominative);

LEC: Afar *gund-us-* 'to suck a lot of milk from the breast' (stem plus Cushitic causative as denominative);

Dullay: Gollango *g'unt-e* 'Männliche Geschlechtstrophäe'

The Afar reflex can be understood as deriving from the noun in a narrowed application to a particular kind of protruding thing, the breast. Oromo *gunt-ut-a* 'breast (young),' because of its identical morphology to that of the self-derived Sidamo noun reflex for 'bud,' may be a loan from an HEC language, but its figurative use may reflect the semantic influence of a lost Oromo form of the root that bore an earlier LEC meaning seen also in the Afar reflex.

131. **g'urr-/g'irr-* 'to put together, connect'

HEC: Sidamo *gur-* 'to collect, assemble';

LEC: Soomaali *guur* 'marriage'; Oromo *guur-* 'to bring together';

Yaaku *-girgir-* 'to sew' (reduplicated stem)

The lack of expected gemination in Sidamo needs explaining.

132. **g'uuɸ-* 'to cry loudly'

LEC: Afar *guq-to* 'complaining' (stem plus Cushitic **t* n. suff.);

Dullay: Saamakko *g'uuɸ-* 'to roar, bellow'

133. *bog'-* 'to finish, bring to an end'

HEC: Sidamo *bogg-iy-aa* 'completely' (stem plus **y* adj. suff.)

LEC: Afar *bak-* 'to be finished'; Soomaali *bog* 'to finish, complete';

Dullay: Harso, Dobase *pog-*, Gollango *pok-* 'to kill'; Saamakko *bog'-* 'to kill'

134. **caag'g'-* 'to stick into, penetrate'

LEC: Afar *saag-it-* 'to copulate (of sheep)' (stem plus Cushitic **t* continuative extension); Oromo *saag-* 'to thicken, fill in (esp. wall), reinforce';

Yaaku *-saag-* 'to hunt (with spear or bow and arrow)'

Geminate **g'* is reconstructed to account for LEC retention of voicing in the velar stop after a sibilant.

135. **cig'g'-/*cag'g'-* 'to be strong (of taste, ability, condition)'

HEC: Sidamo *shagagg-i yaa* 'to set the teeth on edge (sour, acid food or drink)' (partially reduplicated stem);

LEC: Afar *sigg-a* 'strength';

Yaaku *seeg-u* 'bitter, sharp, fierce'

The Yaaku reflex presumes an alternate root shape **ciig'*-; for other cases of old Eastern Cushitic **CVCC-/CVVC-* alternances, see #99, #137, #183, #200, and #207.

136. **cuug'*- 'to rub, scrub'

LEC: Afar *suksuuk*- 'to scrub hard to remove dirt or tarnish' (reduplicated stem); Arbore *suk-ad'*- 'to knead' (stem plus EC middle voice extension); Oromo *sukk-uum*- 'to rub, massage, knead' (stem plus Cushitic **m* intr. extension);

Yaaku *-suug-s-* 'to rub' (stem plus EC caus.)

Burji *sukum-* or *sukkum-*, 'to squeeze' or 'to rub, stroke' (according to different recorders), seems visibly a loanword from Oromo. The reason for the loss of vowel length in the Arbore reflex is unclear.

137. **dig'g'-/*dug'g'*- 'to pull off'

HEC: Sidamo *diig-* 'to demolish, pull down'; *duug-* 'to scrape, tan, scratch'; Hadiya *duug-* 'to peel *enset*';

LEC: Oromo *duguug-* 'to strip off';

Yaaku *-tig-in-s-* 'to remove' (< **tig-im-s-* or **tig-in-s-*, stem plus either Cushitic **m* intr. or **n* non-finitive extension plus EC caus.)

The HEC reflexes imply an alternative stem shape, **diig-/duug-*, with long vowel instead of long consonant. See roots #99, #135, #200, and #207 for other indications of such alternances in early Eastern Cushitic. For the CVCVVC-vocalization pattern, noted here in the Oromo reflex, see also #90 above and #166 and #201 below.

138. **d'ag'*- 'to engage in slander'

LEC: Afar *xag-* 'to revile, slander';

Dullay: Saamakko *d'ag'-is-* 'to insult' (stem plus EC caus.)

139. **fug'*- 'to inhale/exhale'

HEC: Sidamo *fug-am-* 'to be choked, stifled, deprived of air' (stem plus Cushitic **m* intr. extension = passive);

LEC: Afar *fug-ut-* 'to kiss' (stem plus Cushitic **t* continuative extension);

Dullay: Dobase *fug-* 'to blow (with the mouth)'

140. **ħag'*- 'to make as if to do something'

LEC: Oromo *ag-ad'd'*- 'to menace, threaten' (stem plus EC **d'* middle voice extension);

Yaaku *-eh-heg-um-* 'to tease' (Yaaku benefactive plus stem plus Cushitic **m* intr.)

The fronting of PEC **a* in Yaaku requires the reconstruction of pharyngeal **ħ*.

141. **laag*'- 'to return (tr.)'
 LEC: Afar *lagg-oy-is*- 'to reconcile' (stem plus Cushitic *y inchoative plus EC caus.);
 Dullay: Saamakko *laag*'- 'to return (something)'
142. **lig*'- 'to rise up'
 LEC: Afar *lig-a* 'top layer of cream (on milk)'; Soomaali *lig* 'erect and rigid in position';
 Yaaku *lege*, pl. *lelep-a* 'hump' (< **lig'-ib-*, stem plus Cushitic and Afroasiatic *b animate deverbative suffix); *leg-ey* 'large bird (gen.)' (stem plus Cushitic deverbative suff. in *y);
 Dullay: Gollango *lik*- 'aufgehen (Sonne, Mond)'; Saamakko *lig*'- 'to go out'
143. **mag*'-/**mug*'- 'to flow out'
 LEC: Soomaali *mag-ay* 'hole in ground where water stagnates' (stem plus Cushitic *y denominative suffix); *magg-ow* 'avere una montata lattea (di animale)' (stem plus Cushitic *w inchoative);
 Yaaku *-mug-ur-* 'to leak' (< **mugg-ur-*, stem plus either *r n. suff., with verb as back-formation from old noun, or else Afroasiatic *r diffusive extension for which see Ehret [1989]); *mug-ur-en* 'urine' (verb stem plus n. suff. or number marking in *n);
 Dullay: Harso, Dobase *mag-* 'ausgiessen'
144. **sig*'- 'to scrape (against)'
 LEC: Soomaali *sig* 'to graze (someone or something)';
 Yaaku *seg-il* 'nail, claw' (stem plus Cushitic n. suff. in *l)
145. **sozzog*'- 'father-in-law'
 LEC: Soomaali *soddog* 'father-in-law'; Arbore *soh* 'in-law' Oromo *sodd-aa* 'in-law';
 Yaaku *sosok*, *sosog* 'father-in-law';
 Dullay: Saamakko *zoog'-o* 'father-in-law'
- See #13 and #14 above for parallel examples of the conflation of sequential PEC *s and *z in first and second consonants positions in Saamakko and for Oromo maintenance of PEC *s as /s/ in such environments. The lenition of *g' visible in the Arbore and Oromo forms of the root are probably attributable to the working of an LEC rule, *g' > k / [+sibil]V_ (see also #136 for this rule.)
146. **šig*'- or **cig*'- 'to fart'
 LEC: Afar *siksik-a* 'wind in the stomach';
 Dullay: Harso *šig-*, Gollango *šik-* 'to fart'

Presence of /g/ in Harso is determinative of the reconstructibility of proto-Dullay *g'. Gollango, although it consistently has [g'] word-initially for *g', normally devoices verb-stem-final *g' to [k], e.g. #133 and #142.

147. *t'iyag'- 'to bleed; blood'

HEC: Hadiya t'eeg-a 'blood'; Burji c'eeji 'blood';

LEC: Soomaali dhiig 'blood'; Arbore d'iik'- 'to bleed'; d'iik' 'blood'; Oromo d'iig- 'to bleed'; d'iig-a 'blood'; Konso d'iig-a, Gidole d'iig 'blood';

Yaaku t'ig-is-ɔ' 'tsetse-flies' (stem plus Cushitic caus.; semantics: from the feeding habits of tsetse-flies);

Dullay: Harso, Dobase, Gawwada c'ax-te 'blood'; Gollango k'eeek-te, Gawwada Dalpena k'eq-te 'blood'; Saamakko c'eg'-de 'blood'

For the same vowel correspondence between South Lowland and Highland East Cushitic languages (SLEC *ii = HEC *ee), and for the evidence on reconstructing the PEC medial sequence *-iya- as its source, see #91 above. The Dullay correspondences themselves presuppose a pre-proto-Dullay diphthong (*-ay- or *-ya-) as their etymon, independently supporting the PEC reconstruction of the medial segments of the root. The various vowel outcomes in Dullay dialects—Harso, Dobase, and Gawwada /a/ versus Gollango /ee/ and Saamakko and Gawwada Dalpena /e/—make it clear that, even in proto-Dullay, the diphthong had not yet fully resolved itself into a monophthong. Saamakko preserves the original articulation of the final consonant, devoiced elsewhere in Dullay in this environment and hence yielding variously /x/, /k/, and /q/.

The palatalization shift, HEC *t' > Burji c' /#_ [+front], is quite regular and is well attested in the available evidence (in particular Sasse [1982], although not recognized in the discussion there of Burji c'eeji). And Arvanites [1990] shows that /d'/ is commonly the outcome of PEC *t' in the limited environment /#_i(i)C- in both Konso and Gidole. PEC *t', however, normally produced PD *t' rather than, as it did in this case, *c' (in Gollango and Gawwada Dalpena, PD *c' > /k'/). Relating the Dullay forms to the rest of the EC reflexes therefore requires postulating the palatalization of *t' in the restricted but especially powerful environment for such a shift, /#_iyaC- as implied by the vowel correspondences outside Dullay: to wit, *t'iyag'- > *t'yag'- > *c'yag'-.

The Gawwada Dalpena /q/ for *g' exemplifies an alternate history for *g' sometimes seen in the Dullay dialects—namely, the early development of occasional free alternances between those two implosive consonants. The Arbore reflex shows a distinctive outcome, reflecting a rule of the probable form *g > k' /#CV_#, where C is undefined as yet and *g derives from the PLEC collapsing of PEC *g and *g' (see also Arbore -fek' 'far' under #2).

148. *zog'- 'elephant'

LEC: Afar *dak-an-u* 'elephant' (stem plus Cushitic n. suff. in *n);

Yaaku *sog-om-e* 'elephant' (stem plus Cushitic n. suff. in *m)

Yaaku vowel outcome implies *zog'g'ome, with *g' geminated perhaps in connection with the morphological operation of adding a noun suffix.

149. *ʔaang'- 'bird'

Yaaku *ɲg-ay* 'small bird (generic)' (stem plus Cushitic n. suff. in *y);

Dullay: Harso, Dobase *aag-icce* 'wild animal, bird'; Saamakko *aag'g'-itte* 'bird'

The shift, *ʔVN- > N- /#_CV, appears to be a regular sound change in Yaaku, for which see also #222 below.

The overall correspondence patterns show that, unless either the Dullay or Yaaku reflex of a root is known, one cannot be sure whether PEC *g or *g' is to be reconstructed. This datum means that a number of roots so far recorded only from HEC and LEC languages and previously proposed to contain *g may need to be reattributed. Among these are PEC *gabn- or *g'abn- 'dainty'; *gat- or *g'at- 'to sell'; *gawraʃ- or *g'awraʃ 'to slaughter'; and *geʃl- or *g'eʃl- 'to love.' Three roots where either *g or *g' is possible also appear in the evidence presented above for PEC *c (#67, #86, and #88).

1.3. Proto-Eastern Cushitic *j'. One other voiced obstruent, *j', needs also to be added to the PEC inventory. In Highland East Cushitic and Dullay, its reflexes are consistently palatal (or pre-palatal), but not normally glottalic nor in many cases even plosive. Two strong pieces of evidence show, however, that this consonant was indeed originally an implosive stop. First, in Yaaku it did produce a palatal implosive /j/ ([jʔ]); second, in the Lowland East Cushitic languages its reflexes fell together everywhere with the recognized voiced glottalic *d' of PEC. This particular shift is argued in Ehret [1987] to be one of the diagnostic shifts attesting the validity of Lowland East Cushitic as a distinct genetic subgroup of Eastern Cushitic.

The scheme of correspondences supporting PEC *j' is the following:

PEC	Afar	Soomaali	Arbore	Oromo	Sidamo	Hadiya	Burji	Yaaku	Dullay
*j'	x (d')	dh (d')	d'	d'	sh (ʃ)	c	d'	j	ʃ, j

The Hadiya outcome is also attested in the evidence presented earlier for the overall proto-Cushitic reconstruction [Ehret 1987:152-162]. Burji, interestingly, shows /d'/ as its reflex of this consonant, mirroring the shift elsewhere diagnostic of Lowland East Cushitic. In Dullay, /j/ is the Saamakko outcome in at least some non-front vowel environments; but see #156 for an example of Saamakko ʃ

/#_ee). The other dialects all show /ʒ/, or possibly in a few cases /y/ [Hayward 1989].

150. *j'abbal- 'to be agitated'

HEC: Sidamo *shabbaar-* 'to be troubled, agitated';

LEC: Afar *xabal-*, *dabal-* 'to wave arms and sway in dance' Soomaali *dhabaal-ee* 'incitare qn.'

151. *j'af- 'stir (tr.)'

HEC: Sidamo *shaf-* 'to shake, stir, toss';

LEC: Soomaali *dhaf* 'mescolare qs., miscelare qs.'

152. *j'ah-/*j'ih- 'to avoid, keep away from'

LEC: Afar *xac-ar-* 'to leave habitations to seek grazing' (stem plus probably Cushitic *r n. suff., with verb as back-formation from noun); Soomaali *dhax* 'to not return home, stay far from home'; Arbore *d'eh-* 'to escape'; Oromo *d'-iis-* 'to leave (tr.)' (stem plus Cushitic caus.);

Yaaku *-jih-* 'to fear'

153. *j'allal- 'to be(come) wet and cold'

LEC: Soomaali *dhalaal* 'liquefarsi, scogliersi, fondersi; circolare (sangue)'; *dhalaal-is-o* 'freddo molto intenso, gelata';

Dullay: Harso, Dobase, Gollango *šalal-* 'kalt sein'

154. *j'aŋ- 'to descend from a height'

HEC: Sidamo *sha'-e* 'elevated post for the guardian of the field; top of the house';

LEC: Afar *xaxxaq* 'rock fall, precipice' (reduplicated stem); Soomaali *dhac* 'to fall'; *dhaaadhac* 'scendere da qs. (altura)'; Oromo *d'aw-*, *d'a'-* 'to fall on'

155. *j'aaŋ-/*j'iiŋ- 'to blow, expel air'

LEC: Soomaali *dhac* 'to blow (of wind)'; Arbore *d'eeŋ-* 'to belch';

Yaaku *nuka -jii'* 'to sneeze' (*nuka* 'nose')

156. *j'eeg'- 'to rise, swell, stick up or out'

HEC: Burji *d'eeg-i* 'tail';

LEC: Soomaali *dheeg* 'parte superiori di qs.; luogo elevato';

Dullay: Harso, Dobase *šeeg'-*, Gollango *šeeg'-*, *šeek'-* 'schwanger sein; tragen; haben' (the latter two meanings can be understood as transitive use, 'to rise' > 'to lift, pick up')

Saamakko also has *šeeg'-* 'to have, get, become pregnant', indicating that either in some environments (front-vowel?) Saamakko has /ʒ/ for PEC *j', or else this particular word is a loan from another Dullay dialect.

157. *j'ejj'- 'to intend, expect, want'

HEC: Burji *d'eed'*- 'to become jealous'; *d'iid'-iy-* 'to covet' (see Sasse [1982] for plausible explanation of vowel-raising shift here);

LEC: Afar *xaax-* 'to intend to, almost do, nearly happen'; Soomaali *dherer* 'to wait anxiously for'; Oromo *d'arr-a'*- 'to crave' (stem plus probably form of EC middle voice extension, *-d-);

Yaaku *-jej-* 'to want, need'

The Soomaali non-initial /r/ might be explained by its having been recorded in a southern standard Soomaali context, in which PLEC *d' > r /V_, except that the Oromo version of the root also shows /r/. It seems more probable, thus, that a shared South Lowland East Cushitic dissimilation, *d'd' > *rr /d'V_, not found in Afar of North Lowland, is present here.

158. *j'ijj'- 'to secrete'

LEC: Afar *xiix-oxx-a* 'semen' (stem plus geminated EC *d' middle voice extension, 'be secreted');

Yaaku *-jeej-* 'to lay eggs'

159. *j'ill- 'to clench teeth'

HEC: Sidamo *shill-i ass-* 'to set the teeth on edge (sour food)' (*ass-* 'do');

LEC: Soomaali *dhiil* 'to clench (teeth, in facing danger)'

160. *j'im?- 'to ooze, seep'

HEC: Hadiya *cin-e* 'fatal calf disease beginning with diarrhea'; *ciin-s-* 'to squeeze out' (stem plus Cushitic caus.);

LEC: Afar *xim-o* 'sorrow, tears'; *xiim-hee* 'to pour a small quantity' (*hee* 'put'); *xiim-is-* 'to rain heavily' (stem plus caus.); *xim-oom-is-* 'to drip down' (stem plus probably *w inchoative plus Cushitic *m intr. extension plus Cushitic caus.); Soomaali *dhiin* 'succo, umore; resina; secreto (di un vegetale); secernare (un succo, umore, resina, ecc.)'; Oromo *d'im'-uu* 'leak'; *d'im'-is-* 'to leak' (stem plus caus. as denom.)

161. *j'iyyab- or *j'iyyab'- 'to set, lower, put low'

HEC: Hadiya *cebb-a* 'untent'; Burji *d'eeb-* 'to put, place';

LEC: Afar *xixxib* 'humbleness, lowliness' (partially reduplicated stem); Soomaali *dhiibdhiib* 'stare seduto con le gambe stese per terra' (reduplicated stem); Oromo *d'iib-uu* 'valley';

Dullay: Gollango *xiipp-atte* 'evening' (semantics: from setting of sun)

For parallel vowel correspondence patterns see #91 and #147 above and #162 following. The vowel correspondences rule out derivation of the Burji reflex from PEC *d'abb- or *d'aab- 'to be upright, erect' (as Sasse [1982]), which in

any case is semantically a much less satisfactory attribution. Gollango evidence in stem-final environment is normally non-determinative of whether to reconstruct PEC **b* or **b'*.

162. **j'iyann-* 'to lie down'

LEC: Afar *xiin-* 'to sleep, spend the night';

Dullay: Dobase *šenn-* 'liegen'

This root and #161 preceding appear to contain the same underlying root **j'i(y)-*, each adding a different suffixation (for proposals as to the forms and meanings of such suffixes, see Ehret [1989]).

163. **j'iʕ-* 'to become soft'

LEC: Arbore *d'iʔ-* 'to soften';

Yaaku *ji'-it-o* 'gentle' (stem plus Cushitic adj. suff. in **t*)

PEC **ʕ*, rather than **ʔ*, is reconstructed here to account for the Yaaku vowel outcome, /i/ (see §2 below).

164. **j'ob-* 'drip, drop' (n.)

HEC: Hadiya *cop-a* 'Tropfen'; *cop-iss-* 'tropfen, regen' (stem plus Cushitic caus. as denominative);

LEC: Afar *xob-exc-* 'to spit (of rain)' (*exc-* 'to say,' used as verb phrase formative in sense 'do'); *xob-hee* 'to drip' (*hee* 'put, place')

165. **j'ok'-* 'to hit, collide, make contact'

HEC: Burji *d'okk-oom-* 'to crunch' (stem plus Cushitic **m* intr. extension; /k/ for expected /k'/ needs explaining: perhaps geminate /k'/ → [kk] in Burji at some point in time?);

LEC: Afar *xag-* 'to touch'; Soomaali *dhaq-ay-so* 'to strike, hit something on the mark';

Yaaku *-jaq-s-* 'to throb, beat' (as of heart) (stem plus EC caus.);

Dullay: Harso, Dobase, Gollango *šoq-* 'schlagen'; Saamakko *joq-* 'to strike'

Soomaali *dhaq* 'colpa, percossa, schiaffo, pacca' shows the sound correspondences found in Afar and can therefore be counted as one among the large number of Northern Soomaali word borrowings from an extinct Afar-related language. Sidamo *soq-* 'to pound, crush' cannot directly be derived from **j'ok'-*, since its regular reflex would be **šhoq-*; nor can it properly derive from PEC **šuk'-* 'to be knocked apart, pounded up' (#39), which would have *sug-* as its normal outcome in Sidamo. But its shape and meaning can plausibly be attributed to the confusing of the two roots, the stem vowel coming from **j'ok'-* and the initial consonant coming from **šuk'-*.

166. *j'ok'- 'to wet'

LEC: Afar *xuguug-ul* 'obtaining water every day' (partially reduplicated stem by *CVC- > CVCVVC- pattern, plus Cushitic adj. suff. in *l); Soomaali *dhaqaaq* 'liquifarsi, sciogliersi' (CVCVVC- reduplication pattern; see also examples in #90, #137, and #201 and the Afar instance here); *dhaqdhag* 'to swill out' (reduplicated stem);

Dullay: Dobase *šoq-on-ko* 'diarrhoea' (see Saamakko entry); Saamakko *joq-om-* 'to have diarrhoea' (stem plus Cushitic *m intr. extension); *joq-on-ko* 'diarrhoea' (verb stem plus gender suff.)

The second Soomaali reflex probably conflates this root with PEC *t'ak'-/*t'ik'- 'to wash' and the resemblant but probably distinct root seen in Yaaku -t'oq- 'to wet', both of which would also yield the shape *d'aaq- (*dhaq*) by regular Soomaali sound correspondences.

167. *j'ow- 'to be moist';

LEC: Afar *xo-yya* 'drip, drop' (stem plus Cushitic *y deverb.); Oromo *d'ow-a* 'valley, gully' (i.e. where stream flows; for same semantics, see Burji entry in #245 below);

Yaaku *joo-n* 'faeces' (stem plus Cushitic *n n. suff.);

Dullay: Harso *šo-t-o* 'Schlamm' (stem plus n. suff. in *t)

Because PEC *j' became *d' in Lowland East Cushitic, the root known so far only in its South Lowland reconstruction as *d'uus- 'to fart' [Sasse 1975, 1979] can very plausibly be derived from this root by addition of the causative extension: *j'ow- plus *-s- > *j'uus- (> LEC *d'uus-).

168. *j'ub- 'to move quickly about'

HEC: Hadiya *cubb-* 'to dance'; Sidamo *šuwu yaa* 'to flash by';

LEC: Afar *xaxab* 'galloping' (partially reduplicated stem); *xobox-*, *xabax-* 'to gallop' (2nd form: stem plus EC middle voice extension or metathesized); *xabal*, *dabal* 'dance' (*xabal-*, *dabal-* 'to wave hands and sway in dance': probably stem plus Cushitic n. suff. in *l, with verb as back-formation from noun); Soomaali *dhabb-e* 'via, strada; sentiero, passaggio; pista'

Afar and Soomaali reflexes require PLEC *o. The correspondence of HEC *u to LEC *o in environment of PEC *b and *j' is an apparently regular outcome: see also #169 and #173 below. The PEC vowel reconstruction *u is chosen for this correspondence, reflective of a PLEC phonological innovation, because PEC *o in this environment remained /o/ in HEC: see #164 above. PLEC short *o then regularly produced /a/ separately in Afar and Soomaali (as also in #169 following, but not in #173, where an underlying following geminate shifted *o to long /oo/).

169. **j'ub-* 'to beat (something)'
 HEC: Hadiya *cup-a* 'der Schlägel des Mörsers';
 LEC: Soomaali *dhabb-ee* 'battere l'agave (per farla seccare e ricavarne fibre)'
170. **j'ukk-* 'to press with the fingers'
 HEC: Hadiya *cukk-* 'reiben, frottieren';
 LEC: Afar *xukk-ut-* 'to press firmly, paw all over' (stem plus Cushitic **t* continuative extension); *xukk-a exc-* 'to press hard' (*exc-* 'to say'; this verb imparts the sense 'be, do' in this usage)
171. **j'umm-* 'viscous fluid'
 HEC: Sidamo *shumm-o* 'afterbirth; white of egg';
 LEC: Soomaali *dhuun* 'very sour milk; fluid which emerges from an incised abscess'; Arbore *d'uub* 'buttermilk'

This root may be a noun formed from root #167 by addition of the old Cushitic deverbative suffix in **m*: **j'ow-m-* > **j'umm-*.

172. **baj'j-* or **b'aj'j-* 'to clear, open up (especially land)'
 HEC: Hadiya *bacc-* 'einen Wald ausholzen';
 LEC: Afar *baax-a* 'smooth clean place for sitting inside'; *baax-o* 'country, ground, land'; *baax-is-*, *baar-is-* 'to widen' (stem plus EC caus. as denom.);
 Dullay: Gollango *paš-o* 'Feld im Flachland'; Gawwada *paš-o* 'country'
173. **buj'j-* 'ground'
 HEC: Sidamo *bussh-a* 'soil, clay'; Hadiya *bucc-a* 'dust, earth';
 LEC: Afar *boox-a* 'plain, flat area, place hollowed out by animal; sandy place where camel can sit and roll': *buxux* 'bottom end' (for Afar /*u/* < short **o/**j* in cases of CVCV(V)C vocalization, as also in #166 above); Soomaali *boodh* 'dust'

This root is reconstructed with initial **b* rather than the also possible **b'* because of its correspondences outside Eastern Cushitic [Ehret 1987:161].

174. **finj-* 'to scatter (intr.)'
 HEC: Sidamo *fiSSH-a* 'a field in which barley, teff, wheat, etc. are sown'; Hadiya *finc-* 'sich zerstreuen, auseinandergehen';
 LEC: Afar *fixix-* 'to disperse in all directions' (partially reduplicated stem, or stem plus EC **d'* middle voice extension); *fix-it-* 'to disperse' (stem plus Cushitic **t* continuative); Soomaali *fidh-o* 'dust (in the wind)'

175. **haj*'- 'to be still, quiet, unmoving'HEC: Sidamo *hash-u yaa* 'to be tired of, cease to';LEC: Soomaali *hadh* 'to remain';Dullay: Dobase *hašhaš-te* 'insgeheim' (reduplicated stem)176. **k'aj*'- 'to soften, become moist and tender'HEC: Hadiya *qac-o* 'soft, tender';LEC: Afar *ax-ux-* 'to become wet, become damp' (stem plus Cushitic **d'* middle voice extension); Soomaali *qaranqaar-o* 'pus and hematoma' (reduplicated stem; from southern Standard Soomaali in which **d'* > *r*/V_);Dullay: Saamakko *qaj-* 'to melt'177. **k'ooj*'- 'scrotum' (?)HEC: Sidamo *qosh-a* 'prepuce'LEC: Soomaali *qoodh* 'stud animal'; *qoodh-o* 'testicles (including scrotum)'

An apparent regular Sidamo vowel-shortening before verb-stem-final **j'* is present here. The other alternative allowed by the Lowland East Cushitic reflex, a shortening of the geminate consonant, is ruled out by HEC's preservation of such **j'j'* in other instances, e.g. #172 and #173 above.

178. **laj'j'**aʕ-* 'to be convincing, tell a convincing tale'LEC: Soomaali *ladhac* 'to remain impressed, be convinced';Yaaku *le'j-ar-i* 'lie' (stem with metathesis: **laj'ʕ-* > **laʕj-* > **leʕj-* by regular Yaaku fronting of PEC **a*; plus Cushitic n. suff. in **r*);

An original gemination of the medial **j'* is indicated by the preservation of intervocalic *dh* in southern Standard Soomaali.

179. **maj*'- 'to tie up'HEC: Hadiya *macc-o* 'breiter Ledergürtel der Männer';LEC: Afar *max-uy* 'tying action' (stem plus Cushitic **y* inchoative)180. **maj*'-/**mij*'- 'to be empty'LEC: Soomaali *madh-an* 'empty' (stem plus Cushitic **-an* adj. suff.); *madh-i* 'to empty' (stem plus Cushitic caus. in its regular Soomaali form *-i*);Yaaku *mij-oni* 'deserted homestead'181. **maj'j'**ar-* 'to be crazy'HEC: Hadiya *maccar-* 'to be crazy'; Sidamo *maccarar-* 'to be mad, crazy' (partially reduplicated stem);LEC: Oromo *marad'd'* 'to be crazy' (metathesis)

Sidamo /cc/ here is taken to be the regular Sidamo reflex of PEC *j'j' (or of phonemic /ʃʃ/) in the interconsonantal environment, /#CV_VC- (see also #91 for apparently the same rule). For *j'j' in the environment /#CV_V# in Sidamo, see #173 and #188.

182. *miij'- 'to be antagonistic toward'

HEC: Sidamo *mish-* 'to despise, scorn, disdain';

LEC: Afar *miid-* 'to adopt a pose of disagreement, antagonism' (presumed example of not uncommon Afar *x/d* alternation, e.g. #151 above, but one in which only the variant with *d* has been recorded); Arbore *miid-* 'to abuse physically or verbally'; Oromo *miid-* 'to hurt'

For Sidamo vowel-shortening before *j' stem-final, see also #177.

183. *naaj'- 'to exclaim'

HEC: Hadiya *naac-* 'to jeer';

Dullay: Dobase *naʃʃ-oo-d-* 'plaudern' (stem plus probably EC *w inchoative plus EC *d' middle voice extension)

Less plausibly, this item might exemplify the old EC *VVC/*VCC variance, found verb-stem final in some roots (see #99, #135, #137, #200, and #207).

One additional root containing word-initial PEC *j' is noted in the following section (#209). Because *j' became *d' in Lowland East Cushitic, a few of the roots previously reconstructed with PEC *d' but not yet attested outside of the Lowland group may actually contain *j'. One probable example, *j'uus- 'to fart,' has been noted above under root #167.

1.4. Outcomes of PEC *x. A further task of this article is to lay out fuller evidence for the various reflexes of the PEC voiceless velar fricative in the various modern Eastern Cushitic languages. A few of the roots presented here, it will be noted, have been recognized previously by Arvanites [1990] or Sasse [1979]. Among the cognates sets demonstrating *x, several additional instances of PEC *j', *ʃ, *s, and *c will emerge.

PEC *x had distinctive outcomes diagnostic of each of the three major branches of Eastern Cushitic. Word-initially it produced /k/ in Lowland East Cushitic and /h/ in Highland East Cushitic, while it remained as /x/ in Yaaku and proto-Dullay, two subgroups proposed (independently in Ehret [1976] and Hayward [1978] and again on different grounds in Ehret [1987]) to form a combined Yaaku-Dullay branch. In several present-day Dullay dialects, PD *x has shifted to /h/, but in other dialects it retains its original pronunciation. In non-initial positions non-geminate PEC *x produced a distinctive outcome only in what have been called the South Lowland East Cushitic languages. That result, *h, thus provides a strong phonological testimony for the validity of the South

Lowland sub-group (Soomaali, Jiiddu, Bayso, etc.; Arbore and Dasenech; and Konsoid and Oromo). Having fallen together with PEC **h* in the South Lowland languages, it then followed whatever course of change affected other **h* in non-initial environments, yielding a zero outcome, for instance, in most Oromo dialects. In Afar, which Ali [1985] has put in a North Lowland East Cushitic group along with Saho and the extinct Eastern Cushitic languages once spoken in northern Somalia, non-initial PEC **x* instead became /*k*/ as it did word-initially.

The major correspondences can be summarized as follows:

	PEC	Afar	Soomaali	Arbore	Oromo	Sidamo	Dullay	Yaaku
/#_ :	<i>*x</i>	<i>k</i>	<i>k</i>	<i>k</i>	<i>k</i>	<i>h</i>	<i>*x</i>	<i>x</i>
/N_ :	<i>*x</i>	<i>k</i>	<i>h</i>	<i>h</i>	<i>h ~ zero ;</i> <i>zero /N_V</i>	<i>h</i>	<i>*x</i>	<i>x</i>

In the environment #CV_VC, where the first C was a labial sonorant, Afar shows /*g*/ as its reflex of non-geminated PEC **x* (roots #212 and #219). Geminate PEC **x* apparently fell together with **k* in both Highland and Lowland East Cushitic while remaining **x* in Dullay and Yaaku.

184. **xa/*xi* 'here' (demonstrative stem of location)

185. **xayn-/*xawn-* 'when/where'

HEC: Sidamo *hann-iyya* 'when?, how?'; Hadiya *hann-o* 'where?'; Derasa *haan-o* 'when?'; Burji *hayn-u* 'when?';

LEC: Afar *akke* 'here, now, at the present time'; *ikke* 'place' (in subordinate usages);

Yaaku *xa-'a* 'these; those referred to'; *xa-ani* 'places' (simple stem, #184, plus pl. in **n*); *xaut-ete* 'now, immediately';

Dullay: Dobase *hant-a* 'jetzt; bis'; Gawwada Dalpena *xant-u* 'jetzt'; Gollango *hant-a* 'jetzt; bis; kürzlich'

Yaaku and Dullay appear to share an innovion, **xawnt-* 'now', formed by adding a suffix in **t* to the extended stem (#185) seen in the HEC interrogatives of location in space or time.

186. **xab-* or **xab'-* 'to connect, join, attach (tr.)'

HEC: Sidamo *hap'-p'-ayy-o* 'something that adheres and causes other things to adhere' (stem plus assimilated form of EC **d'* middle voice extension; plus Cushitic **y* deverbative);

LEC: Soomaali *kab* 'rimettere insieme i frammenti di qs. con stecchi; riparare qs.; saldare qs.'; Oromo *kab-* 'to put together, bind together'

187. **xac*- ‘to rub off, scrape away’

HEC: Sidamo *hash*- ‘to wash’ (i.e. to scrub off dirt); Burji *haas-iy*- ‘to rub, stroke, massage’ (stem plus Cushitic **y* inchoative; for Burji lengthening of **a* in a parallel environment, /#C₁_C₂- where C₁ is a voiceless continuant and C₂ = *r* or *s*, see #6 above and #193 below);

Dullay: Harso, Dobase *xaš*- ‘schaben’; Gollango *haš*- ‘kratzen; schaben; abschaben’; Saamakko *xaš*- ‘to hew, carve’

Saho (North LEC) *heš-iy*- ‘to rub’ is surely related, but the correspondences for both PEC **x* and **c* are not those of the language’s extremely close relative, Afar. Whether it was borrowed into Saho or not remains, thus, to be determined.

188. **xacc*-/**xicc*- ‘to become dark’

HEC: Sidamo *hassh*- ‘to become dark, night’;

LEC: Afar *kass-ow*- ‘to spend the afternoon’ (stem plus **w* inchoative extension); Arbore *kiss-a* ‘night, darkness’

189. **xaf*- ‘to hit’

LEC: Afar *kaff-at* ‘a box on the ears’ (stem plus Cushitic n. suff. in **t*: as singulative?);

Dullay: Harso *xaf*- ‘to hit’

190. **xal*- ‘grazing grounds’

HEC: Sidamo *hal-all-a* ‘lower, hotter area, where people go occasionally to pasture cattle’ (stem partially reduplicated or else plus Cushitic n. suff. in **l*);

LEC: Oromo *kal-oo* ‘pasture, leaves and grass, grazing area’

191. **xal*- ‘joint of body’

HEC: Sidamo *hall-o* ‘side, hip, loins; the middle’;

LEC: Soomaali *kal* ‘tibia, perone, omero, e femore; cuore, petto (di sede di sentimenti)’

192. **xaarr*- ‘hole, gap, space’

LEC: Arbore *kaar-u* ‘gap between top incisors’; Oromo *kaarr-u* ‘space between teeth’;

Dullay: Harso *kaar-xo* ‘hole’

Sidamo *kaarr-o* ‘space between the two upper front teeth’ has initial /*k*/ for regular /*h*/ and must thus be considered a loanword, probably, as in most such cases, from Oromo. The South Lowland attestations show a shared semantic innovation, narrowing the meaning to a particular kind of hole, namely a gap between the teeth (as does the borrowed form of the root found in Sidamo, in

keeping with the evidence of its having come from the South Lowland language Oromo).

193. **xas*- ‘to seek, find out’

HEC: Sidamo *has*-, Hadiya *hass*- ‘to look for, seek’; Burji *haas*- ‘to want’;

LEC: Afar *kas*- ‘to remember’; *kas* ‘advice, mind, wisdom’; Soomaali *kas* ‘to understand’

194. **xeyal*- ‘yesterday’

LEC: Soomaali *shalay* ‘yesterday’; Rendille *cele* ‘yesterday’; Konsoid: Konso *xal-a*, Gidole *hal-a* ‘yesterday’;

Yaaku *xaal-in* ‘yesterday’ (stem plus Cushitic n. suff. in **n*)

The reconstruction chosen here seeks to account for the vowel length in the Yaaku reflex and for the front vowel **e* required for proto-Soomaali by the shapes of the root in the Soomaali group, represented here by Rendille and standard Soomaali. Although the Arbore word *heel-i* ‘yesterday,’ because it shows irregular /*h*/, must have been borrowed from a language (perhaps distantly Yaaku-related) in which **x* was preserved, it provides strong support in its attestation of long /*ee*/ for the reconstruction of medial *-*eya*-. Moreover, the Soomaali and Rendille forms can reasonably be interpreted as a pre-proto-Soomaali-II metathesis of this root shape: **xeyal*- in its SLEC version **keyal*-, > PS **kelay* > proto-Soomaali-II **celay* by the usual Soomaali-II palatalization [Ehret and Ali 1983], thus producing the forms seen today in the Soomaali languages.

195. **xir*- ‘to come together, join (intr.)’

HEC: Sidamo *hir-sis*- ‘to accompany’ (stem plus doubled form of EC caus.);

LEC: Soomaali *shir* ‘reunione; convegno; riunirsi, radunarsi’ (regular palatalization here of earlier **kir*)

196. **xir*- ‘to transact’

HEC: Sidamo *hir*- ‘to sell; to buy; to cost’;

LEC: Afar *kir*- ‘to hire, rent’

197. **xoob*- or **xoob*’- ‘to surround, enclose by surrounding’

HEC: Sidamo *hoow-e*, pl. *hoobb-a* ‘enclosure, pen, fold’; *hoow*- ‘to make an enclosure around the houses’ Hadiya *hoob-ara* ‘bark of tree’ (stem plus n. suff. in **r*);

LEC: Soomaali *koob-an* ‘essere circondato; essere cinto’ (stem plus Cushitic **m* intr. > *n* /_# in Soomaali)

198. **xoobin*- ‘five’Yaaku *xoop-i* ‘five’;Dullay: Harso *xupin*-, Gollango *hupin*- ‘five’; Saamakko *xoobin* ‘five’

The Yaaku *oo* in place of expected **ɔɔ* may be due to an underlying contracted shape **xoopn-i*, with the stem vowel thus formerly occurring in the necessary environment /_CC for vowel-raising (see §2).

199. **xohr*- ‘rumbling noise, snoring’HEC: Burji *hoor-is*- ‘to snore’ (stem plus Cushitic caus. as denominative);LEC: Afar *kaar* ‘snoring’ (**kohr*- > **kahr*- > **kaar*-; original PEC short **o* > Afar /*a*/ by regular shift); Arbore *korah-as*- ‘to snore’ (stem with metathesis plus Cushitic caus. as denominative);Yaaku *-xoor-s*- ‘to snore’ (structure as in Burji)

PEC **o* > Yaaku /*o*/ because of the underlying following CC environment, /**C_hr*-. For Yaaku vowel outcomes see §2 below.

200. **xooleh*-/**xolleh*- ‘goat wether’LEC: Soomaali: Rendille *keleh* ‘goat wether’; Arbore *keleh* ‘large castrated goat’; Oromo *koll-a* ‘castrated animal’;Yaaku *xɔleh* ‘goat wether’ (Heine [1975] has *kolleh*)

This root offers another example of an old Eastern Cushitic -VCC-/-VVC-alternance; for other proposed cases see #99, #135, #137, #183, and #207. The Omo-Tana reflexes (Rendille and Arbore) show a regressive vowel assimilation. Burji *kola* ‘wether’ is a loan, probably from Oromo.

201. **xor*- ‘to split’HEC: Hadiya *hor*- ‘to open’; Burji *horoor*- ‘to split’ (partially reduplicated stem with *CVC > CVCVVC- vocalization; see also roots #90, #137, and #166 above);Dullay: Dobase *xoxr-o* ‘hole’ (partially reduplicated stem)202. **xorm*- ‘male (animal)’LEC: Soomaali *koron* ‘gelding camel’ (**m* > *n* /_#); Oromo *korm-a* ‘male animal, bull,’ etc.;Yaaku *xɔxorm-ɔɔri* ‘penis’ (partially reduplicated stem plus n. suff. or number-gender suff. in **r*);Dullay: Dobase *horon-ko*, pl. *horm-e* ‘unkastriertes Haustier’; Saamakko *xoron-ko* ‘male’ (of animal)

203. **xur*- ‘to leave, move away’

LEC: Afar *kur-o* ‘ebb, recession’; Oromo *kurkur-* ‘to start to walk (of infant)’ (reduplicated stem); *kurkur-s-* ‘to chase here and there’ (stem plus Cushitic caus.);

Dullay: Saamakko *xur-* ‘to leave’

204. **xur*- ‘to bend, curve’

HEC: Sidamo *huru’-m-* ‘to curl up; to curve, arch the body’ (stem plus probably allophone of EC **d*, = ‘, middle voice plus Cushitic **m* intr. extension)

LEC: Afar *kurkurr-e* ‘knee-cap’ (reduplicated stem; semantics: knee as joint used in bending); Soomaali *kuraankur* ‘rotula’ (reduplicated stem; possible loan from Afar-related language?); Arbore *kur-e* ‘dance’ (see Konso semantics, following); *kur-s-at* ‘knee’ (stem plus Cushitic caus. plus Cushitic singulative in **t*; semantics: thing that one bends, as in Afar, Soomali items); Konso *kur-eta* ‘circular dance’ (stem plus Cushitic n. suff. in **t*: Oromoid *-*ayta*)

This entry revises Sasse’s [1979] reconstruction of PEC **kir*-/**kur*- ‘circular formation’, which relies on Lowland East Cushitic attestations and, along with some acceptable cognates, cites a few unacceptable items, e.g. Soomaali *shir* ‘assembly’ (for the source of which see #195 above).

205. **bax*- ‘bow’

LEC: Arbore *bah* ‘bow’;

Yaaku *pax-a* ‘bow’;

Dullay: Harso, Dobase *pah-an-ce*, Gollango *pah-an-te* ‘bow’ (stem + Cushitic n. suff. in **n*);

206. **bex*- ‘to pour, spill (intr.)’

LEC: Soomaali *bah* ‘Pleiades’ (semantics: the Pleiades are associated widely along the East African coast with the coming of the first rains);

Dullay: Saamakko *bex-ko* ‘flood’

207. **boox*-/**boxx*- ‘to swell’

HEC: Sidamo *bokk-o* ‘a round shape’; Hadiya *bokk-* ‘to rise (of dough)’;

LEC: Soomaali *booh-ar* ‘big or robust person or thing’ (stem plus Cushitic n. suff. in **r*); *boog* ‘ulcer’ (assimilation **book-ka* < **booh-ka*, stem plus Soomaali article; see also #212 below for the same assimilation);

Dullay: Harso, Dobase *poox-*, Gollango *pooh-* ‘to swell’

For further examples of this kind of alternate root shapes, one with long vowel and the other with long consonant, in early Eastern Cushitic, see #99, #135, #137, #183, and #200 above.

208. **dax-/daxx-* ‘to lay across, hence, cover up, conceal’

HEC: Sidamo *dah-o* ‘a hidden place, hiding place’; *dah-aaw-* ‘to be hidden’ (stem plus Cushitic **w* inchoative as denominative); *dah-eess-* ‘to hide’ (stem plus Cushitic caus.); Hadiya *dakk-* ‘sich verbergen’;

LEC: Soomaali *dah* ‘coprire qs., nascondere qs.’; *dahaar* ‘involucro, fodero; carapace di tartaruga’; Oromo *dakk-u* ‘loin cloth (old fashioned)’;

Dullay: Saamakko *daxx-* ‘to cross’

Oromo *da’-o* ‘hiding place’ is in all probability a Highland East Cushitic loanword because it shows the typically HEC meaning of hiding and a morphology identical to that of the Sidamo noun. The other LEC meanings, in both Oromo and Soomaali, all focus first of all on the action of covering up rather than on its consequence, being hidden.

209. **j’oxx-* ‘to swell up’

LEC: Afar *xokxaak-it-* ‘to become covered with sores’ (reduplicated stem plus Cushitic **t* continuative; vowel metathesis of expected **xakxookit-*); Soomaali *dhak-o* ‘high point of head; summit, top, apex’; **kk* regularly > *k* /V_V in Soomaali);

Yaaku *-jax-t-* ‘to swell’ (stem plus Cushitic **t* continuative extension); *jax-at-e* ‘ulcer’

210. **lax-* ‘arrow’

HEC: Burji *law-ee* ‘bleeding arrow’;

LEC: proto-Soomaali **lahaw* ‘wooden pointed arrow’ [Ali 1985]; Oromo *law-aa* ‘arrow’; Konso *law-tta*, pl. *law-a* ‘arrow’;

Yaaku *lax* ‘arrow’;

Dullay: Saamakko *lax-e* ‘arrow’

The Lowland East Cushitic reflexes and the one recorded HEC example of this root share a morphological innovation, the addition of a Cushitic noun suffix in **w* to the stem, i.e. **lahw-*; hence the shapes attested (these data correct Sasse [1979]). It remains to be determined whether or not the Burji word is borrowed from a Lowland language. Dullay **laax-* ‘arrow poison’, attested in dialects other than Saamakko, has an unexplained long vowel. As it differs in meaning as well, it may be a chance resemblance rather than the same root.

211. **lux-* ‘to enter’

HEC: Sidamo *lukk-i yaa-* ‘to enter abruptly’; *lukk-i ass-* ‘to stick into’, e.g. pocket (*ass-* ‘do’);

Yaaku *-lox-* ‘to enter’

212. **mox?*- 'loins'

HEC: Sidamo *mo-e* 'women's placenta';

LEC: Afar *mag-an* 'uterus, womb' (stem plus Cushitic n. suff. in **n*); proto-Soomaali **moho?* 'waist' (Banaadir-Northern Soomaali *mohoog*: derivation by assimilation of article as in #207 above); Oromo *mo'-oo* 'hip';

Yaaku *moxo* 'loins'

213. **mux*- 'to cut off'

Yaaku *mox-o* 'stump' (methathesis of **mox-or-*, stem plus Cushitic n. suff. in **r*; hence failure of expected Yaaku /*u*/ < PEC **u*/_CC-);

Dullay: Saamakko *mumuxx-* 'to joint, cut up meat' (partially reduplicated stem with gemination of **x*)

214. **naxf*- 'body'

LEC: Oromo *naf-a* 'body';

Yaaku *naxap* 'body (of man or animal)'

For more on this root, see Sasse [1979] and Ehret [1987]. The sound correspondences are not determinative of whether or not Burji *naf-a* 'body' is a loanword from Oromo.

215. **rax*- 'frog'

LEC: Soomaali *rah* 'frog'; Tunni *rakk-e* 'frog'; Maay, Garree, Jiiddu *rakk-a* 'frog'; Rendille *rah* 'frog'; Oromo *raa-cca* 'frog'

Tunni, Jiiddu, and other southerly Soomaali languages attest a variant form of the root, **raxx-*, with geminate final **x*. This entry corrects previous reconstructions of this root as **rak-*.

216. **sax*- 'to rub'

LEC: Soomaali *sah-o* 'affilare qs.; strofinare contra qs.'

Yaaku *-sax-* 'to wipe, pet'

217. **soox*- 'to twist, plait, weave'

LEC: Afar *sook-* 'to whirl, twist'; Soomaali *sooh-* 'to weave; to plait'; Arbore *sooh-* 'to twist into rope'; Oromo *fo'-* 'to weave, spin' (Sasse: *fooh-*); Konsoid: Konso, Gidole *sooh-* 'to twist, plait';

Dullay: Dobase *soox-* 'flechten'; Saamakko *soox-* 'to twist fibers into rope'

This entry corrects the previous reconstruction of this root as **sooh-* [Sasse 1975, 1979].

218. **siix-* ‘to rub’

HEC: Sidamo *siikk-is-* ‘to caress, stroke, pat’ (stem plus EC caus.);

Yaaku *-siix-* ‘to rub’

219. **wax-* ‘to watch’

LEC: Afar *wag-it-* ‘to look at, notice, consider, expect, oversee’ (stem plus Cushitic **t* continuative); Soomaali *wah-an* ‘preoccupazione; preoccuparsi’ (stem plus Cushitic **m* intr. extension > *n* /_# in Soomaali);

Yaaku *-wax-* ‘to see’; *-wax-sis-* ‘to show’ (stem plus doubled EC caus.)

220. **waxn-* ‘fence’

HEC: Sidamo *onn-a* ‘thorn fence of cattle pen’ (**ohna* > *onna*; meaning given here is inferred by writer from citation of this word in Gasparini [1983]);

Yaaku *waxn-o* ‘fence’;

Dullay: Gollango *ohin-te* ‘fence’

Konso *oxin-ta* ‘fence’ is a loan from Dullay.

221. **zaax-* ‘to swim’

HEC: Sidamo *daah-* ‘to swim, float on water’; Alaba *zak-* ‘to swim’ (< geminated **zaaxx-* ?); Burji *dah-ad’-* ‘to swim’;

LEC: Soomaali: Jiiddu *yoot-* ‘to swim’ (**zaah-w-t-*, stem plus Cushitic **w* inchoative, as in Arbore reflex, plus Cushitic **t* continuative); Arbore *zaw-ahad’-* ‘to swim’ (stem plus **w* inchoative plus one of Arbore’s forms of EC middle voice extension); Elmolo *yow-* ‘to swim’ (stem plus **w* inchoative); Oromo *daak-* ‘to swim’ (< geminant form **zaaxx-*); Gidole *taak-* ‘to swim’ (root as in Oromo)

The Oromo and Gidole reflexes attest a shared Oromoid modification of the root, gemination of final **x* (**zaaxx-*), while Arbore, Elmolo, and Jiiddu shapes share an Omo-Tana innovation, the addition of the Cushitic inchoative extension in **w*. This entry corrects previous reconstructions of the root, which presumed it to end in PEC **k*.

222. **?anx-* ‘where?’

LEC: Afar *ank-e* ‘where?’

Yaaku *ŋk-a* ‘where?’

Dullay: Harso *ah-a*, *ax-a*, Gollango *ah-a* ‘where?’

For the Yaaku shifts, **VN* > *N* /#_C and **x* > *k* /N_, see also #149 above and #225 below. The Afar phrase *anni ikke* ‘where?’, literally ‘which place?’ (see #252 below for *anni* and #184 above for *ikke*), probably reprises the derivation of this root.

223. *ʔaxx- 'to look'

LEC: Soomaali *eeg* 'to watch, observe, see' (*a > e /_(N)g in Soomaali, e.g. *engeg* 'dry' < earlier **angag*-, and entry in #22 above); Oromo *akeek*- 'to observe, examine, regard' (stem with an uncommon vocalization, *aCC > aCeeC); Konsoid: Konso, Gidole *akk*- 'to see';

Dullay: Harso *ax-icce*, pl. *axx-e*, Dobase *ax-acce* 'eye'; Gawwada *ix-te*, pl. *ixx-e* 'eye'; Saamakko *ʔaxx-ite*, pl. *ʔaxx-e* 'eye'

224. *ʔex- 'to be'; *ʔexx- 'to be, become'

HEC: Sidamo *ikk*- 'to be, become'; Hadiya *ih*- 'sein'; *ik*- 'sein, werden'; Burji *ih*- 'to become';

LEC: Afar *ekk*- 'to be, become'; Soomaali *ah* 'essere'; *ah-aw* 'essere, diventare' (stem plus Cushitic *w inchoative)

225. *ʔonxod- 'thunder'

LEC: Afar *ankad* 'thunder' (pl. *ankooda*: pl. by gemination < **onkodda*); *unkud*- 'to thunder';

Yaaku *axanka* 'thunder'

Northern Soomaali *onkod* 'thunder' is a probable loan from an extinct Afar-related language since it lacks the usual *o > a shift and is restricted to northern dialects. The Yaaku reflex implies a partially reduplicated root shape *ʔaxanxat, with normal loss of word-final non-implosive stop.

1.5. Two new PEC nasals *ŋ and *ɲ. Finally, it must be proposed, the proto-Eastern Cushitic inventory contained two rare nasal consonants *ŋ and *ɲ not previously recognized at all. The evidence, as befits the rarity of the two nasals, is not extensive; and only with the recent publication of several major vocabularies of Eastern Cushitic languages (above all Gasparini [1983], Parker and Hayward [1985], and Agostini et al. [1985]) has enough material become available to make their reconstruction possible. The two consonants are fully preserved in just two Eastern Cushitic languages, Arbore and Yaaku. But they have left a distinct array of correspondences across the rest of the Eastern Cushitic branch:

PEC	Afar	Soomaali	Arbore	Oromo	Dullay	Yaaku	Sidamo	Burji
*ŋ /#_	g	g	ŋ (ɲ /_+front)	ny	*ɲ	ŋ	g	g
*ŋ /V_	ng	n	n	ny	*ng	ny	n	(?)
*ɲ /#_	n	g	ɲ	ny	*ɲ	ny	n	n
*ɲ /V_	n	(?)	(?)	ny	*ng	(ny?)	n	(?)

The two consonants collapsed their outcomes in both Soomaali and Oromo, but in different directions. In proto-Soomaali **ɲ* and **ŋ* both produced **g* in word-initial position, a result requiring a sequence of two sound shifts: first, **ɲ* > **ŋ*, after which **ŋ* > **g*. In non-initial environments, it appears that **ŋ*, at least, became Soomaali **n*; and moreover the evidence of Arbore, which also attests /n/ in such environments (see #239 below and Ehret [1987:#474]), indicates that this shift is a common innovation of the Omo-Tana branch of Lowland Eastern Cushitic. In proto-Oromo, in contrast, PEC **ŋ* became **ɲ* in both word-initial and intervocalic environments. Interestingly, PC **ŋ* (and presumably **ɲ*) in verb-stem-final position apparently had fallen together with **n* in proto-Lowland Eastern Cushitic if not in fact already in proto-Eastern Cushitic itself (see Ehret [1987:#477]).

The two nasals can provisionally be argued to have fallen together as a single consonant phoneme in proto-Dullay, with [ɲ] and [ŋ] as its respective word-initial and intervocalic allophones. In Saamakko, [ŋ] in word environment /#CV_VC- appears to have become [ɲ], reconfiguring the phoneme /ɲ/ with an initial allophone [ɲ] and a non-initial allophone [ŋ], as proposed by Hayward [1989]. In the non-Saamakko branch of Dullay, proto-Dullay intervocalic **[ŋ]*, whether from PEC **ŋ* or from PEC **ng*, became /nk/ because of the regular devoicing of **g* to /k/ in those dialects (#239 and #240; but cf. problematic #236 where **ng'* is indicated). Word-initial **[ɲ]* in the non-Saamakko versions of Dullay, it seems, was absorbed into /n/ (as indicated in #230 and #242).

The Highland East Cushitic group shows still another set of outcomes for the two nasals. PEC **ŋ* became HEC **g* word-initially and **n* apparently in other environments (see #237 below and Ehret [1987:#471, #625]). In Sidamo and Burji at least, word-initial **ɲ* fell together with /n/, but its outcomes in other HEC languages remain to be worked out.

Fifteen PEC roots containing **ŋ* are identified here:

226. **ŋal-* 'to make sounds expressive of feelings'

HEC: Sidamo *gal-at-a* 'praise, thanksgiving' (stem plus **t* n. suff.); *gal-at-* 'to thank, praise' (back-formation from noun); Hadiya *galat'* 'to thank' (< **galat-d'*-, shape seen in Sidamo plus EC **d'* middle voice extension);

LEC: Soomaali *gal-aay-uus* 'lamentarsi, gridare' (stem plus Cushitic deverbative suff. in **y* plus **-uus-* allophone of caus. as denominative; the typically Afar verb morphology here and non-Soomaali shape of the caus. indicate the word is a borrowing from an Afar-related language); Oromo *nyal-* 'to grumble, grouse'

Burji *nyal-* 'to be angry' is suggested by Sasse [1982] to be a loanword from Oromo, but the difference in meaning seems too marked for this to be fully satisfactory. A plausible alternative explanation is that the Burji form was adopted from an as yet unrecorded Dullay source that did have the meaning and shape seen in Burji. Another Burji word, *gojal-t-iy-* 'to groan, moan', would qualify as a proper cognate if, however, its medial sequence *-oj-* could be

satisfactorily accounted for—for example, if the form could be derived by regular sound shifts from an underlying **gagal-t-iy-*. But for now it remains unexplained. The Highland Eastern Cushitic form of the root appears also as a loanword in Oromo *galata* ‘thanks, praise’ (and in Oromo derivatives of that word) and in Amharic.

227. **ɲalɿ-/ɲilɿ-* ‘to stab’

LEC: Afar *gile* ‘knife, dagger’; Soomaali *galac* ‘tipo di lancia’; Arbore *jeleɿ-* ‘to copulate (of a man)’;

Yaaku *-jele's-* ‘to cut into (meat)’ (stem plus Cushitic caus.)

Arbore has /e/ for PEC **a* as a regular fronting shift in the environment of a pharyngeal. The Yaaku reflex apparently reflects underlying **ɲalaɿs-*, in which two vowel-raising environments both operated, the usual Yaaku pharyngeal rule shifting **a* > **ɛ* and the resulting **ɛ* then raising to *e* /_CC (see §2 below on Yaaku vowels). The Afar form reflects a metathesized root shape **giɿl-*; for PEC *CVɿ(V)l-/CVɿ(V)l- > Afar CVl-, see also root #248 below.

228. **ɲar-* ‘manhood’

LEC: Arbore *ɲar* ‘ceremony at which age-set ends’ (i.e. when young men graduate into full manhood);

Yaaku *ɲarɲar-in*, pl. *ɲarɲar* ‘testicle’ (reduplicated stem)

229. **ɲaar-* ‘forehead’

HEC: Sidamo *gaar-a* ‘eyelashes; forehead’; Burji *gaar-i* ‘eyebrow’;

LEC: Oromo *nyaar-a* ‘eyebrow’; *nyaar-oo* ‘marrow’ (semantics: from root in its pre-PEC sense ‘brain’: see Ehret [1987]);

Dullay: Saamakko *nyaar-a* ‘forehead’

This entry revises previous proposals about this root, e.g. Sasse [1982:73]. Deriving from PC **ɲaar-* ‘brain’ [Ehret 1987], the root also appears as proto-Agaw **ɲar-*. That ‘brain’ was its pre-Eastern Cushitic meaning is supported as well by the second Oromo reflex. Oromo *gaara* ‘brow’ is a borrowing from HEC, one among a large number of such loanwords known in the language. If the Oromoid root **gaar-* ‘edge’, seen also in Konso *kaara* ‘edge’, is in fact a metaphorical usage of this loanword and not a distinct root, then the borrowing of it from HEC would date back to proto-Oromoid times. Arbore *jaara* ‘forehead’, showing /ɲ/ for expected /ɲ/, must be accounted a loanword in that language, probably from Dullay.

230. **ɲaɿw-* ‘crocodile’

LEC: Soomaali *gaanni* ‘croccodrillo maschio adulto’ [stem plus Cushitic n. suff. in **n*: PEC *CVɿC-/CVɿC- > *CVVC, *CVɿVCC-/ *CVɿVCC- > *CVVCC- in

Soomaali; a variant of the latter shift, *CaʃawC-/ *CaʔayC- > *CaaCC-, appears here and also in root #248—specifically *gaʃawni > *gaanni and *gaʔayl(i) > *gaal(li); Arbore *ɲawʔ* ‘crocodile’ (metathesized stem with intervening labial *w blocking usual Arbore fronting of *a /pharyngeal); Oromo *nyaa-ca, naa-ca, naa-cca* ‘crocodile’;

Dullay: Gawwada Dalpena *naʃa-acco* ‘crocodile’ (/aa/ in *naʃaacco* implies a lost medial consonant, here indicated to be *w; its outcome otherwise would be *naʃ-acco)

Burji *naacci* and *nyaanci* are loanwords, probably from Dullay dialects and/or from Oromo. Sidamo *naacca* ‘crocodile’ is an apparent borrowing from Oromo.

231. **ɲek’- / *ɲok’*- ‘to look at intently’

HEC: Sidamo *geq-* ‘to stare threateningly, stare fixedly, give an intense look’;

LEC: Soomaali *jeeq-aaq* ‘to wait for; to hope for’ (< **geqqaq-*, stem with CV*CaaC* reduplication as in #10, #15, and #119; gemination of newly medial **q* would explain lengthening of **e*; **g* > Som. *j* /_[+front]); Oromo *nyonq-ur-s-* ‘to investigate; to upset, disturb’ (apparent reduplicated stem, **ɲonok’*- > **ɲonk’*- with addition of **r* n. suff., plus **s* caus. as denominative)

232. **ɲil-* ‘to grow large’

HEC: Sidamo *gill-a* ‘the natural excrescence that grows up on somebody’s face under the ear’;

LEC: Afar *gil-i* ‘big toe, thumb’; Soomaali *jil* ‘size, build’ (regular Soomaali-II palatalization, *jil* < **gil-*); Arbore *ɲil-i* ‘huge, gross’

233. **ɲoc’c’-* ‘non-bearing male animal (small livestock?)’

HEC: Sidamo *goc’-o*, pl. *goc’c’-a* ‘lamb, kid, male of sheep and goats’;

LEC: Arbore *ɲooc’* ‘barren domestic animal, sexually impotent man’

Degemination of **c’c’* in the Sidamo singular can be explained as a back-formation from the plural shape, in which /*c’c’*/ was interpreted as the common North Highland East Cushitic plural by gemination of stem-final consonant.

234. **ɲorb-* ‘non-bearing male animal (of cattle?)’

LEC: Soomaali: Jiiddu *gurb-a* ‘male camel’;

Yaaku *ɲorp-a* ‘ox’

Tunni and Maay *gurba* and Garree *kurba* ‘male (pack) camel’ must be accounted as loanwords from early Jiiddu because they show the usual Jiiddu reflex /*u*/ of PEC **o* instead of their own expected /*o*/. The southern Oromo term *gurb-oo* ‘young male (pack) camel’ reflects a further loanword spread of this usage inland to Oromo speakers. Afar *gurbaq-to* ([*gurbaf-to*]) ‘weaned boy’ and Northern (‘standard’) Soomaali *qurbac* ‘young male camel’, despite their partial resemblance to the Jiiddu reflex of **ɲorb-*, must be ascribed to a quite distinct root **k’urbaf-*, sharply differing in both its reconstructible initial consonant and

its possession of an additional final consonant not at all present in the **ɣorb-* root. Beyond that, it also fails to show regular sound correspondence in its first stem vowel.

235. **ɣorm-* ‘young man, adolescent male’

HEC: Sidamo *goron-s-a* ‘young man’ (-s- needs explaining: proposed history: stem plus **s* caus. as denominative → ‘to become a young man,’ with noun rederived from that verb);

LEC: Soomaali *garoom-ey* ‘pubere (di ragazza)’ (stem plus Cushitic n. suff. in **y*);

Yaaku *ɣorɔmin*, pl. *ɣorɔn* ‘young man’

This root and #234 preceding can be derived from a common underlying root **ɣor-/ɣer-*, meaning perhaps ‘to mature (of males)’, with the form here adding the Cushitic **m* deverbative noun suffix and the root of #234 adding the old Afroasiatic animate deverbative in **b*. The proto-Cushitic root **ɣerd’-* ‘young man’ (Ehret [1987:110] gives ‘male human’ as its meaning), seen in Arbore *ɣerd’e* ‘young man, youth’, is another derivative of that root (but with the alternate mid vowel realization, as **ɣer-*), plus the old Cushitic middle voice extension in **d’*, implying that an earlier verbal sense of the extended root, ‘to exist as a mature male’, underlies the PC noun. Root #228 would certainly appear to have the same underlying source, although its vowel **a* is not satisfactorily accounted for by this attribution.

236. **caan-* ‘pot’

Yaaku *saany-a* ‘waterpot’;

Dullay: Harso, Dobase *šang-e* ‘big cooking pot’ (expected **šank-*, however—see #239 and #240 below—so it may be a loanword from Saamakko, in which *ng* would be the regular outcome);

This root also is attested in the PSC root **tsaan-*, like the Yaaku form probably originally denoting a waterpot.

237. **k’oon-* ‘rind, hull, hard skin’

HEC: Sidamo *qoon-co*, pl. *qoonn-a* ‘pumpkin, gourd, skull’;

LEC: Afar *onk-oor-i* ‘hull/skin (of grain, fruit)’ (stem plus Cushitic n. suff. in **r*)
Soomaali *qoon* ‘folk, people’ (semantics: ‘rind’ > ‘skin’ > ‘body’ > ‘person’);
Oromo *qonyonyyny-aa* ‘scab’ (partially reduplicated stem)

The reconstruction here of **ɣ* rather than **ɰ* is required by the wider Afroasiatic comparative evidence [Ehret, in press]. For other cases of a recurrent, sporadic Afar /nk/ alternance with expected /ng/, see also #22 above and #240 below. The relationship of Burji *k’oom-e* ‘pumpkin, gourd’ to this root is unclear; does non-initial **ɣ* > Burji /m/ in some cases, possibly **ɣ* > m / [+round]__?

238. **siŋ*-/**suŋ*- ‘nose’

LEC: Gidole, Bussa *sin-a* ‘nose’; Oromo *funyny-aan* ‘nose’ (stem plus Cushitic n. suff. in **n*; gemination as consequence of suffixation)

Three distinct but closely resemblant roots are manifested in the various Eastern Cushitic words for ‘nose.’ Their resemblance has confused their actual histories in Eastern Cushitic languages, and it has confused the scholarly interpretation of the evidence as well. PEC **siŋ*-/**suŋ*- given here can be directly derived from the proto-Cushitic root, **isiŋ*^w- ‘nose’, seen also in Agaw **isiŋ*- and proto-Southern Cushitic **ʔidiŋ*^w*a*. The shape **soon*-, seen only in the Eastern Omo-Tana (Arbore, Dasenech) and Konso words for ‘nose’ cannot be made to show regular vowel correspondence to it and can be attributed to a separate Afroasiatic root; a third, widely occurring root, PEC **san*- ‘nose; tip’ can similarly can be traced to a distinctive proto-Afroasiatic source (Ehret [in press], for both these attributions).

239. **zaŋ*-/**ziŋ*- ‘to light up’

LEC: Soomaali *dan-ab* ‘flash of lightning’ (stem plus Afroasiatic **p*’ finitive fortative extension: see Ehret [1989]; PEC **b*’ > Soomaali *b*); Arbore *zann-e* ‘charcoal’;

Dullay: Saamakko *ziŋ-atte* ‘day’ (/ŋ/ > [ŋ] /V_VCV in Saamakko) Gollango *sink-at-o* ‘morning’; Gawwada *sink-an-o* ‘morning’

240. **ʃaŋ*- ‘inside of mouth next to cheek’

LEC: Afar *qang-axx-a* ‘mouthful of food’ (stem plus EC middle voice extension); *qang-ar*, *qank-ar* ‘roof of mouth’ (stem plus Cushitic n. suff. in **r*; this formation was surely influenced by the shape of the older Cushitic root of this meaning, **hank*’(ar)- [Ehret 1987:#523]; *qang-ay-s-it-*, *qang-axx-ay-s-it-* ‘to chew cud’ (stem plus Cushitic n. suff. in **y* plus Cushitic caus. plus Cushitic **t* continuative; 2nd form inserts EC middle voice extension); *qang-ay-tu* ‘bolus’ (stem plus Cushitic n. suff. in **y* plus Cushitic **t* singulative); Soomaali *ʃan* ‘inside of mouth next to cheek’;

Dullay: Gollango *ʃank-o* ‘molar tooth’; Saamakko *ʃang-o* ‘molar tooth’

For an additional twelve PEC roots, the consonant **ɲ* can be reconstructed. The evidence is relatively strong for this phoneme in stem-initial environments, but its non-initial patterns of occurrence remain uncertain.

241. **ɲik*’-/**ɲak*’- ‘to constrict, tighten’

LEC: Soomaali *jiqjiq* ‘narrow; tight, close’ (reduplicated stem); Oromo *nyaq-ii* ‘tight, secure’

The reconstruction of PEC **ɲ* instead of **ŋ* here is required by the evidence of the proto-Southern Cushitic cognate **ɲ*^w*ank*^w- ‘to constrict, tighten’ (by regular

PSC contraction of underlying partially reduplicated **ɲaɲak^w'*; Ehret [1980:184] incorrectly renders the root as **nank^w'*).

242. **ɲar-/ɲir-* 'to be weak, frail'

LEC: Afar *nar-iss-o* 'term of address for first-born child which is a girl' (stem plus possibly suffixation as for Sidamo entry in #235 above); Soomaali *jirr-o* 'ammalarsi' (from earlier **girr-* by regular Soomaali-II palatalization shift); *jirran* 'essere ammalarsi' (stem plus Cushitic **m* intr. extension = usually passive/essive in EC); Arbore *ɲar-d'-os-* 'to make thin, emaciate (tr.)' (stem plus EC middle voice extension plus Cushitic caus.);

Dullay: Harso, Dobase *nar-* 'to collapse (house, tree, etc.)'

243. **ɲark'-/ɲirk'-/ɲurk'-* 'weak, young'

LEC: Afar *narg-o* 'very young she-camel'; *narig* 'very young bull-camel'; Arbore *n'urk'-i* 'weak' (adj.); Oromo *nyarq-o* 'cammellino'

Soomaali *nirig* 'camel foal' is a loan from an Afar-related language and has been cogently argued to reflect a spread of the knowledge and practice of keeping camels southward through the eastern Horn of Africa during the first millennium A.D. (see Ali [1985] for the evidence and arguments for this history). The Oromo reflex and the Rendille form of the root, *nyirakh* 'Kamelfohlen'—the latter a borrowing because of its manifestation of [ny] instead of expected [j]—have a geographical distribution reflecting an apparently parallel, and presumably contemporaneous, north-to-south line of spread of camel-raising just to the west of the main Soomaali-speaking regions, namely along the eastern fringe of the Ethiopian highlands.

244. **ɲawr-* 'to approach, come up to'

HEC: Sidamo *noori yaa* 'to greet' (used to greet person coming from another place);

LEC: Soomaali *dul gowr-iir* 'incombere su qn. o qs., stare addosso o a ridosso di qn. o qs.; protendersi verso qn. o qs.' (*dul* 'back, top'; stem plus probably Cushitic n. suff. in **r*, with v. < earlier n.); Arbore *ɲil ɲoor-* 'to arrive' (*ɲil* 'in'); *ɲoor-is-* 'to cause to arrive' (stem plus caus.)

245. **ɲawr-* 'to be wet, moist'

HEC: Burji *naar-a* 'valley' (semantics: 'stream' > 'valley', i.e. the place where a stream flows; for the same semantics in Oromo, see also #167 above);

LEC: Soomaali *gowr-e* 'brezza serale molto fresca'; Arbore *ɲoor* 'mud'

In two other words, *gorraʔ-* 'to slaughter' and *d'oor-* 'to forbid', Burji shows a back rounded outcome for PC **aw /__r*. The first of these is most probably a loanword from Oromo, as Sasse [1982] proposes; the second may be a loanword, too, or else it evinces an alternative outcome dictated by the differing morphological environment of stem-final **r*.

246. **ɲaylm-* ‘quarrel’

HEC: Sidamo *nann-ass-* ‘to be very angry’ (stem plus EC **s* caus. as denominative);

LEC: Soomaali *geyllan* ‘combattimento; disputa; combattere; disputare’

The Sidamo assimilation of medial **lm* to *nn* is also attested in #247 following.

247. **ɲayllam-* ‘very long thing, especially hair, that hangs down’

HEC: Sidamo *naann-* ‘to make a long hairdo on the back of the head’; *naann-o* ‘women’s hairdo that falls on the back’

LEC: Soomaali *geytaan* ‘peli molto lunghi; persona alta o cosa lunga che cade rovinosamente’

The noun usage of this root must be seen as primary here, and the Sidamo verb thus derived as a back-formation from the noun. For the same Sidamo assimilation in the non-initial sequence **lm*, see #246 preceding.

248. **ɲaʔayl-* ‘slight, light, thin, meager’

LEC: Afar *nal-i* ‘baby, child, infant; egg’; *naal-o* ‘eggs’ (< earlier **nall-*, pl. by gemination); Soomaali *gaal* ‘di scarso valore, scadente (di persona o cosa)’; *gaall-i* ‘diminuire, sminuire, ridurre, svalutare qs.’ [stem plus Soomaali reflex of Cushitic caus. as a denominative; see PEC root #230 for the regular sound shift **CVʔVC(V)* > *CVVC(CV)*, present in these two entries];

Yaaku *nya’ayn* ‘thin’ (word-final PEC **l* normally > Yaaku /*n/*, e.g. as in root #37 above); pl. *nya’ayni* ‘thin; small (suppl. pl.)’

Widespread standard Soomaali *naal* ‘lamb’ is explicable as a loan from an extinct Afar-related language (one of many such items in the northern Soomaali dialects) in which the earlier diphthong did not simplify to /*a/* as it did in Afar. Some far northwestern Soomaali dialects have also adopted the *naalo* form for ‘egg’, presumably recently from Afar itself. The use of *gaal* in Soomaali for ‘non-believer’ and ‘ruthless, cruel’ can be taken as reflecting the conflating of this root with a distinct root denoting people not belonging to one’s culture and belief system, found elsewhere among the languages of the Horn.

249. **ɲiḥ-/ɲuḥ-/ɲaḥ-* ‘to shape a point’

HEC: Burji *naa-t-a* ‘kind of knife’ (stem plus **t* n. suff.; **h/*ḥ* > Ø /*CV_C* in Burji);

LEC: Soomaali *gux-uun* ‘to blunt, clip, bevel (something sharp); blunted, beveled’ (also in metathesized shape *gamuux* < **gaḥuum*) (stem plus **m* adj. suffix with verb < earlier adj.; **m* > Soomaali *n /_#*);

Yaaku *nyih-oi*, pl. *nyih-o’* ‘incisor tooth’

Palatalization shifts are of restricted occurrence in Yaaku, most often in word-final syllables before **i*. The evidence available, e.g. Yaaku *ni’in* ‘small’ (containing PEC **n*) and the Yaaku reflex in #227 above (containing PEC **ŋ*),

among others, indicates that front-vowel environments do not trigger such shifts for the nasals, certainly not word-initially. Hence, cases of Yaaku *ny* before front vowels, as here and in #250 following, should not be attributed to PEC **n* or **ŋ*.

250. **jirr-/*jarr-* ‘to break up, break apart (intr.) from being hit’

HEC: Burji *naar-ay* ‘small iron sledge-hammer’ (stem plus **y* n. suff.);

LEC: Soomaali *jiir* ‘irrompere in qs.’ (< earlier **giir-* by regular Soomaali palatalization);

Yaaku *-nyir-* ‘to break (from being hit)’ (intr.); *-nyirs-* ‘to break (by hitting)’ (stem plus Cushitic caus.)

251. **jok’-* ‘bushy tail’

LEC: Soomaali *gooj-i* ‘to lift the tail’ (< **goqqis-*, stem plus **s* caus. as denominative; regular Soomaali palatalization, **q > j/_i*, and *-i* reflex of caus.; for a parallel verb derivation overtly attested in Soomaali, see *qanaan* ‘coda; coda degli equini; parte prossimale della coda’ and *qanaan-i* ‘drizzare la coda’);

Dullay: Saamakko *nyoq-oyl-e* ‘tail (bushy type)’ (stem plus EC n./adj. **-ayl*, seen also in root #248 above)

PEC **ɲ* rather than **ŋ* is reconstructed here because it is indicated in the apparent Southern Cushitic cognate form, Iraqw *nyaq-onw* ‘squirrel’.

252. **-ɲ-* interrogative base (**-ajɲ-* or **-ɲa-*)

HEC: Sidamo *-na* interrogative particle;

LEC: Afar *ann-i* ‘which?’ Oromo *eenynyū* ‘who?’ (**ay-ɲ-*: PEC **ay-* ‘what?’ plus stem);

Dullay: PD interrogative base **-ng-* in Gollango *hu-nk-a/ti-nk-a*, Harso, Dobase *hu-nk-a/ci-nk-a* ‘which (masc./fem.)’ (*hu-* < **ku-* masculine marker; **ti-* feminine marker)

Yaaku *nyɔh* ‘what?’ (probably stem plus EC demonstrative root in **h*)

2. Vowel Correspondences of Yaaku

One sideline to the presentation of data here on PEC **s*, **ʃ*, **c*, **g’*, **j’*, **x*, **ŋ*, and **ɲ* is the light these data shed on the history of the PEC vowels in the Yaaku language, a topic not explicitly worked out in previous studies. A seven-vowel system emerged in Yaaku from, it appears, the operation of two vowel-raising shifts. PEC **u*, **o*, **i*, and **e* in most contexts became respectively Yaaku */o/*, */ɔ/*, */e/*, and */ɛ/*. But,

- (1) preceding CC (geminate or adjacent different consonants) and
- (2) preceding or following a pharyngeal consonant,

PEC **u*, **o*, **i*, and **e* yielded the respective Yaaku outcomes /*u*/, /*o*/, /*i*/, and /*e*/. In several instances an earlier morphophonemic gemination, upon addition of verb or nominal-forming suffixes, can be posited to account for high-vowel outcomes, e.g. #143, #147, and #180. This kind of gemination is clearly attested elsewhere in the Eastern Cushitic language group as a goodly number of examples above show—note, among others, the Afar entries in #97, #112, #141, and #170; the Soomaali cases in #56, #66, #168, and #169; the Oromo items in #45, #46, and #104; the Sidamo forms in #67, #83, #97, and #211; the Hadiya reflexes in #42, #161, and #179; the Burji verb in #165; the Yaaku words in #143 and #180; and the Dullay cases in #66 and #161 and probably #183. Subsequently, the geminates degeminated in Yaaku, and the pharyngals **ʕ* and **ħ* fell together respectively with **ʔ* and **h*. Realization of PEC **i* as Yaaku /*i*/ may have taken place also in the limited environment /#C_s(V)# (#17, #104 and the Yaaku reflex *isi* of PEC **ʕis* ‘she’).

In addition, PEC **a* fronted to /*ɛ*/ in Yaaku in the environment of a former pharyngeal consonant. The fact that the pharyngeal factor affected all five vowels suggests that it might be better to consider the shift of **a* > /*ɛ*/ as simply another facies of the more general rule of vowel-raising in a pharyngeal environment. The limited fronting only of **a* in such contexts, which took place in several of the Lowland East Cushitic languages of southern Ethiopia and southern Somalia, would in that case appear a distinct and differently conceived kind of shift.

Finally, it appears that in the restricted environment, /C_[+velar] where C = glottal or /*j*/, Yaaku shifted PEC **o* to /*a*/ (#165, #209, and #225).

3. Outcomes of Geminated Consonants in PEC

Two other peripheral issues that these data help to illuminate are the treatments in various languages of the geminates and of consonant clusters of non-laryngeal plus laryngeal stop in proto-Eastern Cushitic roots.

In the Highland East Cushitic languages Sidamo and Hadiya, as well as in the Lowland language Oromo, geminated consonants are normally retained, whereas in the Soomaali group and in Afar the common pattern is for the sequence **VCC* to become **VVC*. Numerous examples of this latter effect appear all through the evidence offered above. Only intervocalic **d'd'*, **zz*, **tt*, and **kk* seem generally preserved in Soomaali languages—with **d'd'* simplifying to *dh* and **kk* and **tt* to *k* and *t* respectively in the dialects of standard Soomaali, but often remaining geminate in the other members of the group, and with **zz* maintaining geminate reflexes in all of them (examples include roots #13, #14, #145, #178, #209, and #215). In Afar, in contrast, it seems that only *ss* stays geminated (cf. #95 and #188 versus #13 in which PEC **zz* > single /*d*/). Another effect seen in Soomaali is the lengthening of the following instead of preceding vowel in the PEC shape **CV(V)CCVC-*, yielding *CV(V)CVVC*, e.g. #48, #82, #87, #98, #150, and #247. In some Soomaali languages the second outcome was later modified by a

shortening of the second vowel, e.g. #24 and #82. Gemination, though still common in Soomaali and Afar, is usually a morphophonemic effect of affixation in those languages (see above) or comes from recent sound shifts, e.g. PEC *NC > Jiiddu CC).

In HEC, a verb-final gemination of PEC simple C is itself a frequentative marker (cf. #1, #39, #73, #111, #128, #168, and #170 among others). This same process can be suggested to appear less often among LEC languages and in Dullay, e.g. the Oromoid reflexes in #221 and the Saamakko case in #112, and to have been productive in PEC itself (note roots #68 and #218, which seem especially semantically overt cases).

In Yaaku, doubled consonants entirely disappeared, but not without previously affecting the vowel pronunciations of the language (as discussed above); while in the Dullay group a variety of different effects can be discerned in different dialects and in different word environments. These need further study, although a tendency toward shortening of both the consonants and the vowels involved can be discerned in some of the dialects (see #9, #84, #89, #118, and #172 for examples of variant outcomes). The situation in Arbore of Lowland East Cushitic is not strongly established from the evidence here, although one pattern does seem incipiently discernible: The one case of PEC *VVCC kept its gemination but shortened its vowel (#12), while examples of PEC *VCC produced VVC (#15, #171, and #233).

As for sequences of laryngeal and non-laryngeal consonants, only Yaaku seems almost without fail to maintain the PEC distinctions, although of course it did lose the feature [+pharyngeal] and thus collapsed the pharyngeals *ʕ and *ħ with /ʔ/ and /h/ respectively. In one limited environment, #CV_aC-, Yaaku changed PEC *ʕ to /y/ if the preceding vowel was *u, and to /w/ if it was *o (see #25 and #37 for examples; other instances not cited here are also known). In Soomaali, the PEC sequences *VʕC, *VʕC, *VCʔ, and *VCʕ all became *VVC, suggesting that the real order of shift was, first, the conversion of these sequences to geminates *VCC, after which the degemination rule just described, *VCC > *VVC, came into play. (See roots #18, #31, #41, #47, #50, #54, #63, #84, #85, #91, #95, #121, #131, #159, #171, #173, #207, #223, #238, and #247 for exemplification of the parallel outcomes in the Soomaali group of both the laryngeal sequences and the geminates.) In Afar, in contrast, most sequences *VʕC produced VVC, e.g. #54 and #160—*Vʕl and *Vʕl yielded Vl, however (#227 and #248)—whereas *VCʔ and *VCʕ became instead geminated to VCC, e.g. #49. Oromo also has contrary outcomes, with PEC *VCʔ and *VCʕ producing a non-geminate *VC' (*Vbʔ and *Vbʕ becoming, for instance, Vp' as in #32, #49, and #50) or remaining as a sequence, e.g. #160, but with PEC *VʕC and *VʕC yielding a geminate VC'C' (#54) or VCC (#28). In Sidamo and Hadiya the latter two PEC clusters gave VVC, as in Soomaali, for some kinds of C, but not for others (cf. #32 and #37 versus #16 and #47 where C was a nasal). But PEC *VCʔ and *VCʕ behaved as in Afar, producing VCC (see #28 and #49). In

Dullay dialects and in Arbore of the Lowland branch, it appears that medial *ʕ and *ʔ were generally lost in /CV_(V)C contexts, but the range of outcomes remains to be explored, e.g. examples in #25, #32, and #51.

4. A Revised Array of Proto-Eastern Cushitic Consonants

With the consonants *ʕ, *c, *g', *j', and *x soundly, and *ŋ and *ɲ provisionally, established, a much more balanced system of proto-Eastern Cushitic consonants can be presented, with series—filled out in varying degree—of plain voiced stops, voiced implosives, plain voiceless stops, voiceless ejectives, voiceless fricatives, and nasals. Only in the voiced fricative row are fewer than three positions filled as the evidence now stands. Combining the findings of Arvanites [1990] and the materials presented here, the well attested PEC consonants number twenty-eight; and, with the rarer velar and palatal nasals included, they total thirty in all:

<i>b</i>	<i>d</i>		<i>g</i>	<i>ʕ</i>
<i>b'</i>	<i>d'</i>	<i>j'</i>	<i>g'</i>	
	<i>t</i>	<i>c</i>	<i>k</i>	<i>ʔ</i>
	<i>t'</i>	<i>c'</i>	<i>k'</i>	
<i>f</i>	<i>s</i>	<i>ʃ</i>	<i>x</i>	<i>ħ, h</i>
	<i>z</i>			
<i>m</i>	<i>n</i>	<i>ɲ</i>	<i>ŋ</i>	
	<i>l, r</i>			
<i>w</i>		<i>y</i>		

The odd man out among the obstruents, the PEC consonant currently represented as the voiced sibilant *z, would contribute to an even neater balance of elements if it could be reinterpreted as originally a non-glottalic voiced palatal stop *j. But the wider Cushitic evidence accords best with its having always been *z [Ehret 1987], and so *z in PEC it remains also.

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COLOR TERMS AND LEXICAL CLASSES IN KRAHN/WOBÉ¹

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Many West African languages lack a separate category of adjectives; Krahn and Wobé are also said to lack this lexical class. However, an examination of color terms in the Gborbo dialect of Liberian Krahn reveals a class of words which are neither nouns or verbs. After describing the syntactic behavior of nouns and verbs and color nouns and verbs, it is shown that a third class of color words must be considered adjectives. The data supports proposals by Givón and Dixon that, universally, lexical categories are semantically based.

O. Introduction

Color terms have been widely studied in a variety of languages by linguists, anthropologists, and psychologists. Many studies assume that color terms are adjectives, but, as Welmers [1973] and Dixon [1977] show, in some languages, words for color are nouns or verbs. Gborbo Krahn, a Kru language spoken in western Liberia, has color words in three categories: noun, verb, and adjective. In this paper I show how color terms in the Gborbo dialect of Krahn are initiating a new lexical class of adjectives. Krahn is called Wobé in Côte d'Ivoire, so I will refer to the language as Krahn/Wobé. After surveying the status of adjectives in West African languages and describing the syntactic behavior of nouns and verbs in Krahn, I describe the use of color terms in Gborbo Krahn. Although other dialects of Krahn/Wobé may differ, a category of adjectives seems to be emerging in the Gborbo dialect. I discuss why color words are the earliest lexical items in this new grammatical class. The evidence from

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Krahn/Wobé supports claims by Dixon [1977] and Givón [1979, 1984] that, universally, lexical categories are semantically based.

1. Adjectives in West African Languages

In a chapter called “Adjectives and Un-adjectives”, Welmers [1973:249] argues that most Niger-Congo languages have either a very small class of adjectives or none at all. He notes that the term “adjective” is often applied to any attribute translated as an English adjective. Dixon [1977] claims that different “semantic types” tend to belong to certain lexical categories in the world’s languages. Some of the semantic types that Dixon claims are associated with adjectives in many of the world’s languages are either nouns or verbs in Gborbo. For example, to describe something shiny, a Gborbo speaker must use either the noun /*li*l²²/ or the verb /*foN*¹/. There is no corresponding adjective.² In her grammar of Wobé, Egner [1989] identifies a small number of words she calls adjectives, but claims that these are a subclass of nouns and not a separate lexical class. In Gborbo Krahn, however, there are three basic color words which are neither nouns nor verbs and which seem to be initiating a new lexical class.

2. The Category *Verb* in Krahn

Like other Kru languages discussed in Marchese [1986], Krahn has a subject-verb-object order in simple sentences which changes to subject-auxiliary-object-

²Numbers refer to phonemic tones with 1 indicating the highest, 4 the lowest, and combinations indicating contour tone (see Bing [1993b] and Bearth & Link [1980]). The symbols /I, E, U, O/ correspond to [i, e, u, o] respectively. The symbol /N/ indicates nasalization, which extends leftward as far back as a voiceless obstruent. The following abbreviations are used in the translations:

1s, 3s, 1p, 3p = first and third person human singular or plural

3ns/3np = third person nonhuman singular or plural

A = adjective

AM = associative marker

EMP = emphatic particle

I = imperfect

N = noun

NEG = negative

part = particle

pl = plural

poss = possessive

Q = question marker

? = unknown factor, either tonal, lexical or morphological

V = verb

VAL = valence marker indicating a marked number of arguments; called “declarative marker” in Egner [1989]

verb order with the presence of either positive or negative auxiliaries. Thus, the verb occurs before its complements in (1a), but after its complements in (1b).³

- (1) a. *soko*³³ *pa*⁴³ *too*³⁴ 'Soko carved a mortar'
 Soko carve mortar
- b. *soko*³³ *se*³ *too*³⁴ *pa*⁴³ 'Soko didn't carve a mortar'
 Soko NEG mortar carve

Descriptive words, which are adjectives in English, are frequently stative verbs in Krahn (2a-b). As (2c) through (2e) illustrate, stative verbs may be predicates for pronoun subjects and can be negated like other verbs.

- (2) a. *O*³ *bei*³² 'he's big'
 3s be-big-part
- b. *ci*⁴ *kmu*³² 'leopards are powerful'
 leopard be-powerful
- c. *O*³ *se*³ *kmu*³² 'he's not powerful'
 3s NEG be-powerful
- d. *ci*⁴ *lan*² *E*³ *kmu*³² 'that leopard, it's powerful'
 leopard that 3ns be-powerful
- e. *O*³ *sei*³² *bE*³ 'he's not big'
 3s NEG-part be-big

Verbs may also be identified morphologically. Krahn verbs have a characteristic suffix /-yE³/ or /-e³/ called the declarative marker in Fisher [1979] and Egner [1989]. This suffix occurs in affirmative sentences when the verb occurs with added arguments, including instrumentals, as discussed in Bing and Duitsman [1993].

- (3) a. *pa*⁴³ *too*³⁴ 'carve a mortar!'
 carve mortar
- b. *payE*⁴³ *na*² *faa*³³ 'carve a bird with a knife!'
 carve-VAL bird knife

³See discussions in Marchese [1986:Ch.4] and Egner [1989:152].

This declarative marker, glossed “VAL” for “valence marker”, generally does not appear in negative sentences. In (4b) the change of tone on the first word marks the negation; the valence marker is absent.

- (4) a. *OO*³³ *die*³³ *dE*³ *gbain*²¹ ‘she eats a lot’
 3s-I eat-VAL something a lot
- b. *OO*³² *di*³ *dE*³ *gbain*²¹ ‘she doesn’t eat a lot’
 3s-NEG-I eat something a lot

The sentences in (4) also illustrate how verbs are intensified with adverbs such as /*gbain*²¹/ rather than by reduplication, as nouns are.

3. The Category *Noun* in Krahn

Like nouns in many languages, nouns in Krahn may co-occur with determiners and/or possessives.

- (5) a. *pepa*²³ *lan*² ‘that paper’
 paper that
- b. *pepa*²³ *lan*³ ‘this paper’
 paper this
- c. *OO*³³ *too*³² ‘his basket’
 3s-poss basket
- d. *OO*³³ *cE*²³ ‘his ice’ (literally ‘his coldness’)
 3s-poss coldness

Most nouns have plural forms (often formed with the suffix /-I/ which assimilates to the height and tone of the final vowel of the stem).

- (6) a. *ku*¹ ‘ghost’
 b. *kui*²¹ ‘ghosts’

However, because Krahn has many morphemes with high front vowels, and because there is a great deal of vowel assimilation, as discussed in Bing and Duitsman [1993], the presence or absence of the suffix /-I/ is not a reliable test for identifying nouns.

Nouns function as arguments of verbs, so subjects and objects such as /*ku*¹/ ‘ghost’, /*cEE*³²/ ‘cold’, and /*too*³²/ ‘basket’ are easily identified as nouns.

- (7) a. *kua*²¹ *ji*³ 'a ghost comes'
ghost-I come
- b. *cEE*³² *ji*³ 'cold (weather) comes'
coldness-I come
- c. *OO*³³ *ble*³ *too*³² 'he has a basket'
3s-I have basket

Like verbs, nouns can sometimes be predicates of third person nonhuman pronouns in sentences with no copula.

- (8) a. *E*³ *cE*³² 'it's cold'
3ns coldness
- b. *E*³ *ku*¹ 'it's a ghost'
3ns ghost

However, unlike verbs, nouns can co-occur in the predicate with the copula /*nE*³/ or /*nie*³/ 'be' or with /*kon*³/ 'have':

- (9) a. *E*³ *nie*³³ *cE*³² 'it's cold'
3ns be-VAL coldness
- b. *OO*³³ *nie*³³ *cE*³² 'he's cold'
3s-I be-VAL coldness
- c. *OO*³³ *nie*³³ *ku*¹ 'he's a ghost'
3s-I be-VAL ghost
- d. *O*³ *kon*³/*nie*³³ *nEnE*²² 'she is careful'
3s have/be-VAL carefulness

Krahn often uses nouns for physical properties.

- (10) a. *ci*⁴ *nie*³³ *dli*¹ 'the leopard is dangerous'
leopard be-VAL danger
- b. *nyO*³ *nE*³ *dli*¹ 'people can be dangerous'
people be danger

- c. EN^1 nie^{33} $pEpE^{11}$ 'I'm very clean'
 1s be-VAL clean-clean

In sentences with negative auxiliary verbs, the verb complement precedes the verb when the auxiliary is present.

- (11) a. la^2 nie^{33} cE^{32} 'the shirt is wet/cold'
 shirt be-VAL coldness
- b. la^2 se^3 cE^{32} nE^3 'the shirt isn't wet/cold'
 shirt neg coldness be

Nouns, but not verbs, occur in a nominal construction with $/ka^3/$ 'such'. These are discussed in Egner [1989:150-151].

- (12) la^2 $pEpE^{11}$ ka^3 'such a clean shirt'
 shirt clean-clean (N) such

Nouns can be intensified by reduplication rather than with adverbials such as $/gbain^1/$ 'very'.

- (13) a. E^3 nie^{33} $klin^1$ $klin^1$ 'it's really clean'
 3ns be-VAL clean clean
- b. la^2 $klin^1$ $klin^1$ 'the shirt is really clean'
 shirt clean clean

Nouns may be attributive in compounds or associative constructions as in (14).⁴

- (14) a. dli^{21} ci^4 die^{33} kEN^3 'the dangerous leopard ate the deer'
 danger leopard eat-VAL deer
- b. $nyOO^{33}$ $nEnE^{22}$ nie^{33} $nymO^{33}$ ji^1 'a careful person is good'
 person-3s carefulness be-VAL good come

In Gborbo, as in other West African languages, many attributes may be expressed either with verbs or nouns. The most reliable way to identify a word as a noun is by its co-occurrence with the copula $/nE^3/$ in the predicate, its ability to co-occur in nominal phrases with $/ka^3/$, and its intensification by reduplication.

⁴For discussions, see Egner [1989:26-29], Bearth & Link [1980:172-175], and Paradis [1984].

4. Color Terms in Gborbo

Like many other African languages such as Akan [Bartle 1983], Yoruba [Welmers 1973:257], and Emai [Schaefer 1984], Krahn has only three basic color terms, 'black', 'white', and 'red', more accurately translated as 'dark-cool', 'light', and 'bright-warm'. This system is distributed across the spectrum like other three-color systems described in Berlin and Kay [1969] and Kay and McDaniel [1978]. Although in Gborbo there are only three basic colors (plus a possible fourth, 'yellow'), there are many terms for the three colors. These lexical items include not only verbs and nouns, but a third category as well, adjectives.

4.1. Color verbs. Among color words are the stative verbs /*gbe*³/ 'dark', /*plu*¹/ 'light', and /*sain*⁴¹/ 'bright'. These correspond to the Wobé verbs cited in Egner [1989:110].

(15)	Gborbo Krahn		Wobé	
a.	<i>la</i> ² <i>gbe</i> ³ shirt be-black	'the shirt is black'	/kpe ³ /	'dark'
b.	<i>dE</i> ³ <i>plu</i> ¹ thing be-white	'the thing is white'	/plu ¹ /	'light'
c.	<i>dE</i> ³ <i>sain</i> ⁴¹ thing be-red	'the thing is red'	/sain ⁴¹ /	'bright'

Like other verbs, these stative verbs can be predicates for pronouns as well as nouns.

(16) a.	<i>O</i> ³ <i>gbe</i> ³ 3s be-black	'he's black'
b.	<i>O</i> ³ <i>plu</i> ¹ <i>lao</i> ¹³ 3s be-white Q	'is he a white person?'

In sentences with negative auxiliaries, color verbs pattern like other verbs; in (17) verb complements precede the verbs.

(17) a.	<i>la</i> ² <i>se</i> ³ <i>gbe</i> ³ shirt neg black	'the shirt is not black'
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- b. *lɪ² soon²² se³ plu¹* 'the two shirts are not white'
 shirt-pl two neg be-white
- c. *miɪ²³ se³ jai³³ plu¹* 'the hair is not blondish'
 hair neg sort of be-white

Color verbs serve as predicates in interrogative sentences. Questions are formed by adding a question word, (16b), or by lengthening the final vowel of a declarative sentence, (18).

- (18) a. *la² gbee³³* 'is the shirt black?'
 shirt be-black-Q
- b. *la² pluu¹²* 'is the shirt white?'
 shirt be-white-Q

Unlike nouns, which are intensified by reduplication, color verbs are intensified adverbially with /*gbaiN²¹*/ 'very'.

- (19) a. *aN¹ la² gbe³ gbaiN²¹* 'my shirt is very black'
 1s-AM shirt be-black very
- b. *E³ plu¹ gbaiN²¹* 'it's very white'
 3ns be-white very
- c. *E³ saiN⁴¹ gbaiN²¹* 'it's deep red'
 3sn be-red very

4.2. Color nouns. There are several nouns for each of the three basic colors, reflecting particular luminosities or collocations.

- (20) a. *la² nie³³ pOO⁴⁴* 'the shirt is (very) white'
 shirt be-VAL white
- b. *la² nie³³ puu¹²* 'the shirt is white'
 shirt be-VAL white
- c. *la² nie³³ tauo⁴³⁴* 'the shirt is (dusty) white'
 shirt be-VAL white
- d. *la² nie³³ woau²¹²* 'the shirt is the whitest'
 shirt be-VAL white

- e. *la*² *nie*³³ *jlu*⁴ *jlu*⁴ 'the shirt is black'
shirt be-VAL black
- f. *la*² *nie*³³ *keo*⁴² *keo*⁴² 'the shirt is black'
shirt be-VAL black
- g. *la*² *nie*³³ *soo*³²³ 'the shirt is red'
shirt be-VAL red
- h. *la*² *nie*³³ *jlbio*²¹² 'the shirt is red'⁵
shirt be-VAL red

Both */jlu*⁴ *jlu*⁴/ and */keo*⁴² *keo*⁴²/ 'black', seem to only occur in reduplicated form. Like other nouns, nominal color words occur in predicates with the copula */nE*³/ 'to be' or its variant */nie*³/. It is not surprising that sentences such as (21), which contain both a verb and a copula, are unacceptable.

- (21) **la*² *nie*³³ *plu*¹ *'the shirt is be-white'
shirt be be-white

Like the nouns in (14), color nouns occur in associative or compound constructions with the characteristic low tone on the second noun.⁶

- (22) a. *la*² *poo*⁴⁴ 'the white shirt'
shirt white (N)
- b. *la*² *keo*⁴² *keo*⁴² 'the black shirt'
shirt black-black (N)

When they co-occur with auxiliaries such as the negative auxiliary, color nouns, like other nouns, occur in pre-verbal complement position rather than in sentence-final position.

- (23) a. *la*² *nie*³³ *wau*¹³ 'the shirt is very white'
shirt be-VAL white (N)
- b. *la*² *se*³ *wau*¹³ *nE*³ 'the shirt is very white'
shirt NEG white be

⁵Except for */jlbio*²¹²/ 'red' and */soEN*⁴⁴/ (discussed in §5), which were only used by single speakers, all the terms discussed in this paper were used by more than one speaker.

⁶For discussions of tonal changes on the associative construction in different dialects, see Bearth and Link [1980:172-175], Egner [1989:25-33], and Paradis [1984].

Like other nouns, nominal color words co-occur with /ka³/ 'such'.

- (24) *la*² *keo*⁴² *keo*⁴² *ka*³ 'such a black shirt!'
 shirt black-black (N) such

Verbs never occur in this construction.

- (25) **la*² *gbe*³ *ka*³ *'such a black shirt is!'
 shirt be-black (V) such

Although nominal and verbal color words cannot occur in the same syntactic structures, they often occur in similar discourse contexts. For example, the proverb in (26) contains two words for white, the verb /*plu*¹/ and the noun /*poo*⁴⁴/.

- (26) *dEE*³² *plu*¹ *E*³ *si*⁴ *poo*⁴⁴ 'nothing is whiter than white'
 thing-NEG be-white 3ns surpasses white (N)

4.3. Color adjectives. A third class of basic color terms in Krahn are either adjectives or are in the process of becoming adjectives.

- (27) a. *la*² *plu*⁴ 'white shirt' (*'the shirt is white')
 shirt white (A)
- b. *la*² *jle*³ 'black shirt' (*'the shirt is black')
 shirt black (A)
- c. *la*² *saEN*⁴⁴ 'red shirt' (*'the shirt is red')
 shirt red (V)

These color words differ from nouns and verbs in several ways. Unlike color verbs, color adjectives do not occur as predicates for either nouns or pronouns.

- (28) a. **O*³ *plu*⁴ *'it whites'
 3ns/3s white (A)
- b. **O*³ *jle*³ *'it blacks'
 3ns/3s black (A)

If /*jle*³/ were a verb, (28b) could be interpreted as ‘it is black’ or ‘he who is black’. However, the ungrammatical phrase in (28b) can only be translated as *‘black it’.⁷

Adjectives also differ from nouns. Unlike nouns, the Krahn adjectives cannot occur with determiners, nor can they occur in predicate position after the copula /*nE*³/ ‘be’.

- (29) a. **jle*³ *laN*³ *‘this black’
 black (A) this
- b. **la*² *nie*³³ *jle*³ *‘the shirt is black’
 shirt be-VAL black (A)

The ungrammaticality of sentences such as (29b) clearly indicate that these color words are not nouns; since they cannot occur in the predicate slot in subject+be+predicate constructions, they appear to be verbs, and two of them are remarkably similar to the corresponding color verbs.

- (30) a. *l*² *soon*²² *plu*¹² ‘the two shirts are white (verb)’
 shirt-pl two be-white-I (V)
- b. *l*² *plui*⁴⁴ *soon*²² ‘two white (adj) shirts’⁸
 shirt-pl white-pl (A) two
- c. *la*² *saiN*⁴² ‘the shirt is red (verb)’
 shirt be-red-I (V)
- d. *dE*³ *saEN*⁴⁴ ‘red (adj) thing’
 thing red (A)

In fact, in Wobé, they apparently are verbs. In her description of Wobé, Egner [1989:110-112] identifies the color terms corresponding to those in (30b) and (30d) as verbs in relative clauses. She states that in Wobé, relative clauses are sometimes marked only by the presence of low tone.

Les verbes qualificatifs peuvent encore former un syntagme qualificatif avec un nom. Ils apparaissent alors sous leur forme subordonnée et dans une proposition relative. Le pronom relatif de cette dernière n’est cependant présent que par le ton bas au début du verbe... (p.110)

⁷The pronoun /*o*³/ is the third person singular pronoun for one class of humans [Bing 1993a] as well as for one class of non-humans [Bing 1987].

⁸The word /*plui*⁴⁴/ ‘white’ might seem to have an agreement marker, but the /*i*/ in (30b) could also be a plural marker on a noun.

Le ton bas-tombant des pronoms relatifs abaisse le ton de certains verbes ... la présence du pronom relatif peut aussi se manifester par le seul abaissement tonal du verbe ou de la marque de l'aspect inaccompli... (p.212)⁹

Thus, in the Wobé example (31), Egner (p.110) translates the word /*sain*⁴²/ 'red' as if it were a relative clause.

- (31) *tae*³² *saian*⁴²² 'red loin cloth'
loin-cloth which be-red-subordinator

Egner's analysis is appealing, but does not account for the adjectives in Gborbo Krahn. Although Egner's relative clause hypothesis could be a possible source for /*plu*⁴/ 'white' and /*saEN*⁴⁴/ 'red', in Gborbo, there still remains the verb /*gbe*³/ 'black', which is quite different from the adjective /*jle*³/ 'black'. In addition, there is other evidence showing that the color words in (27) cannot be verbs.

For example, there is evidence from intensification. If the phrase /*la*² *plu*⁴⁴/ 'white shirt' were, in fact, 'shirt which is white', then it should be possible to use the intensifier /*gbain*²¹/ 'very', as it is with the verb in (32a); however, (32b) indicates this is not possible.

- (32) a. *la*² *gbe*³ *gbain*²¹ 'the shirt is very black'
shirt be-black (V) very
- b. **la*² *jle*³ *gbain*²¹ *'shirt which is very black, very black shirt'
shirt black very

For the color adjectives, intensity is always expressed by reduplication.

- (33) a. *sain*⁴⁴ 'red'
red (A)
- b. *sain*⁴⁴ *sain*⁴⁴ 'very red'
red-red (A)
- c. *la*² *jle*³ *jle*³⁴ 'very black shirt'
shirt black-black (A)

⁹[My translation]: The attributive verbs may also form an attributive construction with a noun. In these cases they occur in a subordinate marker in a relative clause. The relative pronoun of the latter is marked only by the initial low tone of the verb... (p. 110)

The low falling tone of the relative pronouns lowers the tone of certain verbs... The presence of a relative pronoun may also be marked by only the tonal lowering of the verb or by the imperfect aspect marker... (p. 212)

Further evidence that /*plu*⁴/, /*jle*³/, and /*saEn*⁴⁴/ are adjectives rather than verbs is that, unlike verbs, they occur in phrases with /*ka*³/ ‘such’ as in (34a). Verbs do not, as shown in (34b).

- (34) a. *la*² *jle*³ *ka*³ ‘such a black shirt!’
 shirt black such
- b. *la*² *saEn*⁴⁴ *ka*³ ‘such a red shirt!’
 shirt red such
- c. **la*² *gbe*³ *ka*³ *‘such the shirt is black!, such the/a shirt’
 shirt black such which is black!’

The morphology provides additional evidence. The /*i*/ in /*plui*⁴⁴/ in (35b) might be either an agreement marker on an adjective or a plural marker on a noun.

- (35) a. *la*² *plu*⁴ ‘white shirt’
 shirt white (A)
- b. *l*² *plui*⁴⁴ *soon*²² ‘two white shirts’
 shirt-pl white? (A) two

Although a suffix /*i*/ or /*l*/ does not distinguish between nouns and adjectives (see Bing and Duitsman [1993]), the presence of /*i*/ indicates that /*plui*⁴⁴/ in (35b) cannot be a verb; this high front vowel cannot occur on /*plui*¹¹/ in (36b).

- (36) a. *l*² *soon*²² *plu*¹ ‘the two shirts are white’
 shirt-pl two white(V)
- b. **l*² *soon*²² *plui*¹¹ *‘the two shirts are white’¹⁰
 shirt-pl two white

¹⁰The same pattern was also true for the verbs and adjectives for black and red. Interestingly, although J.D. Slinger indicated that the form /*gbl*³/ is not used in sentences such as (i), he commented, “It should be; it’s the correct form.”

- (i) *l*² *soon*²² *gbe*³/**gbl*³ ‘the two shirts are black’
 shirt-pl two be-black (V)
- (ii) *l*² *jle*³/*jl*³ *soon*²² ‘two black shirts’
 shirt-pl black (A) two

Most importantly, color adjectives differ from *both* nouns and verbs in at least one way. In some contexts, either verbs or noun phrases can be predicates for pronoun subjects with no copula, as shown in (37).

- (37) a. E^3 la^2 jle^3 'it is a black shirt'
 3ns shirt black (A)
- b. E^3 gbe^3 ($gbain^{21}$) 'it's (very) black'
 3ns be-black (V) (very)

If the adjectives were either nouns or verbs, it should be possible to find some contexts in which they occur as predicates in sentences without a copula, but, in fact, they never do.

- (38) a. $*E^3$ jle^3 *'it is black'
 3sn black
- b. $*E^3$ jle^3 $gbain^{21}$ *'it's very black (A), a very black it'
 3ns black (A) very

Thus, on distributional evidence, adjectives are a class separate from either nouns or verbs. Like verbs (but unlike nouns) adjectives cannot co-occur with the copula $/nE^3/$ or the valance marker $/-E^3/$. Like nouns (but unlike verbs) adjectives are intensified by reduplication rather than by adverbials and can occur with the morpheme $/i/$ in plural constructions. Unlike either nouns or verbs, color adjectives cannot be predicates for personal pronoun subjects in sentences with no copula.

It is possible that at least two of the color adjectives have evolved (or are evolving) from relativized stative verbs. Their inability to co-occur with the copula is consistent with this hypothesis. However, consider the data in (39).

(39)	color	stative verbs	adjectives	nouns
a.	white	$/plu^1/$	$/plu^4/$	$/puu^{12}/$
b.	red	$/saiN^{42}/$	$/saEN^{44}/$	$/soo^{323}/$
c.	black	$/gbe^3/$	$/jle^3/$	$/jlu^3 jlu^3/$

The adjectives for 'white' and 'red' are segmentally similar to the corresponding verbs in (39a) and (39b). In these cases, the tonal differences could be the result of a relative marker, as in Wobé. The adjective $/jle^3/$ 'black', in (39c), however, is more similar to the noun $/jlu^3 jlu^3/$ and to the noun $/jlu^1/$

'cobra' than it is to the verb /gbe³/. The phonological differences between the items paired in boxes could be accounted for with current morphology and phonological rules.¹¹

It is also possible that color adjectives may derive from more than one category; the adjective /jle³/ 'black' may have evolved from a noun, but the adjectives /plu⁴/ 'white' and /saen⁴⁴/ 'red' from verbs. Possibly the noun /puu¹²/ in (39a) evolved from the verb /plu¹/. The adjective could have come from either source. Givón [1979:266-267] discusses similar possibilities; for some Bantu languages he proposes that stative verbs are nominalized, then used in possessive patterns, then finally changed morphologically to fit a new syntactic pattern. With so few examples, it is only possible to speculate about the histories of these adjectives.

Although there is evidence from color words that a new lexical class of adjectives may be emerging in Gborbo Krahn, the evidence is still not overwhelming. The absence of a syntactic pattern subject-be-adjective suggests that the adjectival color words may not yet be a "true" lexical class. However, color words do seem to be initiating such a class. One indication that this may be a brand new lexical class is its size. Other than color words, the only other clear example of an adjective is the word /sman²²/ 'hot'. The word /sman²²/ may also be a noun meaning 'soup' (the spicy stew eaten over rice) or a verb meaning 'to be hot', as exemplified in (40).

- (40) *sE² sman²²* 'snake soup' or 'the snake is hot' (verb)
 snake -soup (N) or be-hot (V)

In some contexts such as (41), this word is clearly a verb.

- (41) *gbaa³¹ sman²²* 'the dryer is hot' (verb)
 dryer be-hot (V)

However, the fact that the word /sman²²/ can also be used in a noun phrase with /ka³/ 'such' or /-o/ 'what' indicates that in (42) /sman²²/ 'hot' is being used as an adjective, since verbs never occur in this construction.

- (42) a. *gbaa³¹ sma-oN²²* 'what a hot dryer!'
 dryer hot-EMP

¹¹The presence of a subordinating particle /E³/ or /yE³/ plus regular vowel deletion rules in Gborbo would account for the segmental differences between the verb and adjective for 'red' or the noun and adjective for 'black'. Low tone on the adjectives could be accounted for either by a low tone relative marker, or by the low tone which occurs in noun constructions. In normal speech, the segment // is frequently dropped.

- b. *smaN*²² *smaN*²² *ka*³ 'such hot soup!'
 soup hot such

In this case it seems reasonable to assume that the adjective /*smaN*²²/ developed from the verb rather than from the noun, although anyone who has eaten /*smaN*²²/ would not completely discount the noun as a possible source.

5. The Use of Adjectives in Krahn Descriptions

Although there are few adjectives in Krahn, the color adjectives occur almost as often as nominal and verbal color words in descriptions. The description in (43), which is fairly representative of those collected from various speakers in Liberia, begins and ends with color adjectives. It was given in response to a picture of a Baltimore Oriole in Peterson [1980:258] and the question, "How would you describe this bird to a Krahn person?"

- (43) *Naa*²³ *saEN*⁴⁴ 'Red bird (adj.)
 bird red (A)
- wE*³ *E*³ *kE*² *plu*¹ *jai*³³ and its beak is whitish (verb),
 and 3ns beak be-white(V) sort of
- wE*³ *E*³ *dru*¹ *gbe*³ and its head is black (verb)
 and 3ns head be-black(V)
- gbaa*³¹ *ku*⁴ *gbe*³ wings are black (verb)
 wings be-black(V)
- wE*³ *dE*³ *pli*³ *pUU*^{12-iN}²² with white (noun) markings on the
 and thing wings white (N)-on wings
- bUI*³³ *jle*³. black (adj) feet.'
 foot-pl. black(A)

Some of the examples above occurred in interviews with Krahn speakers who were asked to describe different birds, animals, and people. In cases where speakers used color words, there were no obvious contexts in which nouns, verbs, or adjectives predominated. The two descriptions of cobras in (44), for example, are from different speakers responding to the request, "Describe /*jlu*¹/ for me."

The first speaker begins with the verb for black; the second speaker uses an adjective and noun.¹²

(44) a. **Speaker 1**

*jlu*¹ *gbe*³ 'Cobra is black (verb).
cobra be-black (V)

*U*³ *gbe*³ *U*³ *teiN*³³ *U*³ *waiN*⁴² It's black (verb), it's
3ns be-black(V) 3ns be-long 3ns be-small long, it's small.'

b. **Speaker 2**

*sE*² *jle*³ *nea*³³ *jlu*³ *jlu*³ *wE*³ 'This black (adj) snake is
snake black (A) being black-black (N) ?EMP very black (noun)

*wEE*³³ *teN*² and it's long.'
and-3ns be-long(V)

The excerpts in (43) and (44) are representative and illustrate that color adjectives are not rare in descriptions. Color adjectives are also salient in another sense. When first asked to point out the Gborbo colors on the color chart which accompanies Berlin and Kay [1969], the consultant, J.D. Slanger, designated and labeled the areas as shown on Figure 1.

Figure 1

One interesting aspect of Figure 1 is that the words chosen for 'red', 'black', and 'white' are all adjectives. At first, I suspected that the noun /*soEN*²⁴/ 'yellow'

¹²Speaker 1 is from Liberia and Speaker 2 from Côte d'Ivoire. The different pronoun reflects a dialect difference. Unlike Wobé speakers, Gborbo speakers use three different third person nonhuman pronouns, as described in Bing [1987].

might be emerging as a fourth basic color, but it apparently is not. Despite my early hopes, the fourth color in Figure 1, /soEN²⁴/ does not meet the definition of a basic color; it is the name of a yellow wood. In Liberia, it was not used by any speaker other than Mr. Slanger. All of the Krahn speakers I recorded were bilingual to some extent. When pressed to describe the color of some particular bird, animal, or object, speakers used either a French or English word and, except for Mr. Slanger, did not use or recognize the word /soEN²⁴/. Gborbo not only lacks words for basic colors other than 'black', 'white', and 'red'; it also seems to lack words for any secondary or derived color terms, with the possible exception of /soEN²⁴/.

6. Adjectives as Pioneers

Having shown that Gborbo Krahn seems to be initiating a small class of adjectives, I would like to comment briefly on color terms as early members in this new lexical category. Citing work by Dixon, Givón [1979, 1984] observes that, universally, color terms are likely to "pioneer" the class of adjectives because they name permanent-inherent states. In a discussion of Bantu languages, Givón [1979:266] notes that entities which do not change over time tend to be lexicalized as nouns, but phenomena which change rapidly over time tend to be verbs. Those which change at an intermediate rate are potentially adjectives. He observes:

Among states, more *permanent-inherent* states (size, shape, color, goodness-badness, taste, smell, texture) are more likely to pioneer the class "adjective" while the more *temporary-contingent* states (hot, cold, angry, sad, sick, broken, bent, etc.) may either remain (stative) verbs or are late to move into the "adjective" class.

Givón's observation about color terms initiating the category of adjectives holds for Gborbo, since color terms fit his definition of permanent-inherent state. It is worth noting that for West Africans, color is a permanent-inherent state in a more profound sense than it is for Americans or Europeans. Philip Bartle [1983:85] explains how the three basic colors in Twi are symbols for an entire belief system. For the Akan, the three basic colors—black, white, and red—represent "the three fundamental elements of the physical universe and the spirits which animate it, the three fundamental elements of the physical individual, and the three souls which animate each human being." Red is the symbol for woman, the earth, the body, fecundity, provision, inheritance, property, food, danger, and many other aspects of the culture, the religion and the economy. White is the color for man, rain, semen, victory, morality, purity and fertility. Black is the color for the Supreme Diety, the Ancestors, wind, fire, power, energy, and time. Bartle argues convincingly that the colors have symbolic power at every level of the society, and, for important symbolic reasons, are not mixed.

Bartle's description of the importance of color and its close relationship to the West African conception of the universe suggests that color may indeed be a "permanent-inherent" state for Krahn speakers. Givón is probably correct in assuming that this would be a relevant factor in the change from verb to adjective. Once the lexical category is established, it would then be possible for a temporary-contingent physical property like /smaN²²/ 'hot' to also be re-analysed as an adjective. Admittedly, there are probably multiple factors involved, but the evidence from Gborbo Krahn supports Givón's [1979, 1984] hypothesis about the emergence of a new lexical category, adjective.

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THE CONDITIONAL PARTICLE *KA* IN WAAMA (BENIN)

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The particle *ka* in Waama has an underlying conditional function, and serves most frequently to set up possible worlds in the minds of interlocutors. By virtue of its function as a conditional, it can also mark topics. It occurs as the basis of conditional-type structures, including conditionals, contrafactuals, and concessions. It also serves to express options, exceptions, and complements of some verbs of uncertainty. When functioning within a discourse, *ka* may also serve to introduce an adverbial time clause which recapitulates given information.

0. Introduction

Whenever people talk, they need at each point to have a common framework which restricts the applicability of the speaker's predications. The term "framework" is used here in the same sense as it was originally used by Chafe [1976:50] but with rather greater generality. He used it to refer to the spatial, temporal or individual structure within which the main predication holds.

The particle *ka* in Waama¹ is one of the devices which set up such frameworks. One of its primary functions is to mark conditional-type subordinate structures as

¹Waama is a language spoken in the north of Benin, West Africa, by some 32,000 people [Commission Nationale de Linguistique 1980a:12]. These people are located within the province of Atacora and are scattered throughout the administrative districts of Natitingou, Toukountouna, Tanguiéta, and Kouandé [Commission Nationale de Linguistique 1980b:62-63]. The language has been classed by Manessy [1975:1] as belonging to the eastern group of the Oti-Volta sub-family. The Société Internationale de Linguistique began research work among the Waama people in 1981. I was a member of the project from December 1985 to December 1987. The present paper is based on some 130 pages of text representing the following discourse genres: narrative, conversational, procedural, and expository/exhortatory. Field research has been carried out under an agreement with the Centre National de Linguistique Appliquée of Benin. I

frameworks (§§1.1-3). Besides setting up frameworks, *ka* may also function to mark complements of some verbs of cognition (§1.4), options (§§2.1-3) and exceptions (§2.5).

In many instances where the particle *ka* occurs, its function is to set up possible worlds, i.e. situations which differ only slightly from the actual world and which would come true if the actual world were slightly altered.

When the particle *ka* occurs in a subordinate clause, its normal syntactic position is immediately following the subject. When marking a proposition serving as the complement of a verb of cognition, *ka* retains this post-subject position. Similarly, it follows the subject (or object) when it occurs in a main clause where options or exceptions are expressed. Instances of each of these will be found in examples below.

1. *Ka* in subordinate clauses

1.1. Straightforward conditions. When the particle *ka* occurs in a conditional clause, its function is to set up a possible world as a framework which restricts, and therefore to some extent determines, what the speaker is going to say in the main clause. In general, frameworks may be spatial, temporal or individual [Chafe 1976:50], or they may consist of conditional structures which set up possible worlds (signaled by the presence of *ka* in Waama). We consider conditionals to be topics in Waama (cf. Haiman [1978:564]) because, just as a topic is a given, so the contents of a conditional (the protasis) must be accepted as true—at least provisionally—if what follows (the apodosis) is to make sense. Straightforward topics in Waama contain the particle *maa* which directly follows the subject. (Brückner, [1987], talks about this function of *maa* as one which adds emphasis and draws an element out of the background. I interpret this as a topical function.)

An example of a conditional in English is *If it rains, we'll go home*. The *if* clause ('if it rains') refers to a possible state of affairs; it is not yet raining, but it could. Were this state of affairs to be realized (that is, to become part of the actual world), the main predication ('we'll go home') would also come true.

am grateful to them for their permission to conduct research in that country. Many Waama people, particularly Samuel Pormaté and Martin Sakoura, generously contributed their knowledge and time to this project. Special thanks go to Dr. Ivan Lowe, International Linguistic Consultant of the Summer Institute of Linguistics, for his invaluable help in the preparation of the initial version of this paper at a workshop held in Lomé, Togo from November to December 1986. Very helpful comments on that draft were received from Russell G. Schuh and incorporated into the present paper. In Waama there are 14 consonant phonemes: voiceless stops *p, t, c, k, kp*; voiced stops *b, d*, (one allophone of *d* is represented by *r* in the orthography); fricatives *f, s* nasals *m, n, ŋ*; semivowels *y, w*. Oral vowels are *i, e, ε, a, u, o, ɔ*; nasal vowels are *ĩ, ē, ā, ũ, ɔ̃*. There are two phonemic tones, high and low, but they are not written in the orthography. By convention certain particles and pronouns are marked with the accent, ' ` ' , when confusion between minimal tone pairs is possible.

The following simple example of a conditional in *Waama* (1) shows clearly the normal clausal position of the particle *ka* (immediately after the subject of the subordinate clause). The subordinate clause functions as a framework which is an alternative to the actual world. It is said by someone contemplating the weather and its effect on his plans for the day. He is considering the possible world in which rain is a reality.

- (1) ¹*Tando* *KA* *dori*, ²*n da* *kori n yete*.
 rain if fall.perf 1sg fut go home.df 1sg house

‘¹If it rains, ²I shall go home.’

In example (2) we examine two conditionals which occur one right after another in the context of a narrative. It is clear that each conditional clause (clauses 1 and 3) sets up a framework for its respective main clause (clauses 2 and 4). The conditions in this particular case are mutually exclusive, that is, if one is fulfilled the other cannot be. (Note that each time examples are situated in their discourse contexts, the context will be given in English only and indented. A key to the abbreviations used in glosses may be found in the Appendix.)

- (2) (context) A hunter was out hunting one day. He had shot all the animals on his side of the stream when he saw a deer on the other side. His father had told him not to cross the stream, but he did so anyway, reasoning that he couldn't go home empty-handed. He wanted to shoot the deer he saw. The deer then said to him,

¹*O KA m tai*, ²*yiporipe da kp̄ii-di*; ³*o KA m n̄ɔ̄ɔ̄*,
 2sg if 1sg shoot.perf white wife fut die.df-foc 2sg if 1sg leave.perf

⁴*yiribitiriwo ñ kpi*.
 black wife seq die.df

‘¹If you shoot me, ²the white wife will die; ³if you leave me, ⁴the black wife will die.’

- (context) Now it happened that the hunter had two wives, a white one and a black one.

In several cases, *KA* occurs in conditional clauses which function metaphorically. We shall look at some of these cases below.

The conditional clause *dà ka t̄ɔ̄ɔ̄ɛ* literally means ‘if it adds’, but is used idiomatically to mean ‘later’.

- (3) ¹DÀ KA TŌŌSE ²n da kori.
 it if add perf 1sg fut go home.df

‘¹Later ²I’ll go home.’

The conditional clause *da ka pa* ‘if it refuses’ is used metaphorically to mean ‘perhaps’ and to indicate that the speaker is fairly certain, i.e. has a reasonable expectation, that the main clause which follows will come true. If the surface form of this expression makes it seem a strange equivalent to ‘perhaps’, it should be noted that Waama speakers themselves find it somewhat puzzling. They do not see a connection between its literal meaning of ‘refuse’ and the uncertainty in the mind of the speaker. Some Waama speakers have even gone so far as to replace *dà ka pa* with *dà ka neki*, which means ‘if it wants’, in their speech because they find this a more logical way to express uncertainty.

In example (4) below, the conditional clause *dà ka pa* marks the main clause with a ‘perhaps’. The sentence is said by someone who has suggested to others that they all go home to see if their meal is ready. He is not absolutely sure whether it is ready or not, but it could very well be, because in that home a meal is usually ready at that hour of the day.

- (4) ¹DÀ KA PA, ²diima bei-di.
 it if refuse.ep food be ready.perf-foc

‘¹Perhaps ²the food is ready.’

Notice that in example (5) below, the feeling of fair certainty applies to the whole sentence (clauses 2 and 3) following *dà ka pa*. The *dà ka pa* here expresses the speakers’, i.e. the termites’, reasonable suspicion that the devil, if released, would eat them. This suspicion is justified by their knowledge of the devil’s ways. Hence, their reluctance to release him.

- (5) (context) Hare has tied Devil up. The termites see Devil and ask who tied him up. They offer to release him, but are afraid he will eat them if they do.

¹DÀ KA PA maa ²n wo fŏkire ³o m wētire diima.
 it if refuse.ep but 1sg 1sg release.df 2sf
 1sg turn into.df food

‘¹But perhaps ²I will release you and ³you will make me your prey.’

Irrelevance of a condition may be expressed in Waama by a conditional *ka* clause containing a metaphorical use of the verb *neki* ‘like, want’. In such a case,

the complement of *neki* must be a proposition. In the following examples, the combination of *ka* with *neki* means irrelevance over the domain of a universal quantifier. That is to say, no matter what the value of a certain variable in the conditional *ka* clause, the situation described by the main clause will always be true.

In example (6) below, the speaker uses the combination of *ka* and *neki* to indicate that *Waama* is such an easy language that anyone can learn it. *O ka neki...* in clause 1 takes on the meaning of ‘you may even...’.

- (6) ¹*O KA NEKI* *o i Yiporiwo,* ²*o da sooki-di*
 2sg if want.stat 2sg be White 2sg fut be able.df-foc
- o mammalsi waamma.*
 2sg learn.df *Waama*

‘¹You may even be White, ²you will be able to learn *Waama*.’

Another kind of irrelevant condition is an obviously impossible condition. Thus, in example (7) the two protases (conditional *ka* clauses 1 and 2) are irrelevant to the truth of the apodosis (clause 3) because they both express situations which everyone knows are impossible. By using this device, the speaker indicates that nothing will thwart the realization of the situation described in the main clause.

- (7) ¹*O KA NEKI* *o ñ piriki,* ²*o KA NEKI*
 2sg if want.stat 2sg seq fly.df 2sg if want.stat
- o ñ caare,* ³*n da basi-di.*
 2sg seq hang in the air.df 1sg fut do.df-foc

‘¹You may fly, ²you may hang in the air; ³I’m going to do (what I want).’

In some instances it is only the context which distinguishes the metaphorical sense of *neki*, treated above, from its literal sense of ‘want’. We shall examine this difference in the next two examples. The conditional *ka neki* clause (clause 1) in (8) below expresses irrelevance over the domain of the universal quantifier with the variable ‘nasty things you may do to me’. The metaphorical sense is triggered by a preceding context which involved threats to the speaker aimed at making him give food.

- (8) ¹O KA NEKI o m ò ko, ²n ba wo
 2sg if want.stat 2sg 1sg seq kill.df 1sg not 2sg

pɛɛti diima.
 give.ingr food

‘¹(Whatever nasty things you may do to me)—you may even kill me—²I won’t give you any food.’

In example (9) the verb *nɛki* retains its literal sense ‘want’. By comparing (9) with (8), we see clearly that the two *ka* clauses have exactly the same surface form. However, it is clear that these clauses have different meanings in the two examples. In (9), the truth of the main clause depends on the truth of the conditional, but in (8) it does not.

- (9) ¹O KA NEKI o m ò ko,
 2sg if want.stat 2sg 1sg seq kill.df

²mɛn maakan, n da wo ko-di.
 1sg.em too 1sg fut 2sg kill.df-foc

‘¹If (you decide) you want to kill me, ²I will kill you too.’

The conditional *ka* clause may also have a narrative function of recapitulation or cohesion. Its structure remains the same as previously treated *ka* clauses, as does its function, namely, signaling an event which has been or must be accomplished before the next event. However, when the truth of a *ka* clause can be inferred from the discourse context or is common knowledge in the Waama culture, this clause represents an actual rather than a possible world. It may be translated as an adverbial time clause introduced by ‘when’.

In (10) below, an excerpt from a folktale, the action referred to in the *ka* clause (clause 3) was accomplished in the preceding sentence (clauses 1 and 2) and is therefore given information. By the way, clause 1 is marked as a straightforward topic because it contains the particle *maa*.

- (10) ¹Yiriba maa ò tòn taka ²bà nɛɛ daari Kuun. ³Bà KA
 people and seq hab go.df 3pl there greet.df Death 3pl when

daari Kuun, ⁴Kuun ò seji, ⁵bà wa: ‘⁶Ti takinde
 greet.perf death death seq accept.df 3pl say.ep 1pl go-perf.al

⁷sa o ti pɛ taanya-di ⁸ti mɔki.’
 so 2sg 1pl give.df butternuts-foc 1pl suck.df

¹People used to go and ²greet Death there. ³When they greeted Death, ⁴Death accepted and ⁵they said, “⁶We came ⁷so you would give us butternuts ⁸to eat.”’

Information generally known to be true (common knowledge in the Waama culture) is often expressed within procedural discourses. In such discourses, the speaker is imagining the realization of each step in the procedure as he talks about it, so as far as he is concerned each previous step is a given as he talks about the next step. It seems that it is the high frequency of *ka* clauses in certain discourses that serves to distinguish them as procedurals. At least at this point in our research we have not discovered any other linguistic device which distinguishes procedural from narrative discourse. Example (11) comes from a discourse on how to plant yams. The speaker has, both linguistically and mentally, already planted yams in the course of his instructions to the addressee. Now, assuming the planting to be an accomplished action and therefore a given fact, he can say:

(11) ¹*O KA bori, ²*o ì mandì.*
2sg when plant.perf 2sg cont wait.df*

‘¹When you've planted, ²you wait.’

The existence of situations such as night and day are given information since everyone knows they are real. Thus, we translate *ka* by ‘when’ in (12) as well.

(12) (context) A child was saying the rosary. When he had finished, he went to bed.

¹*Dà KA mun bo yēende, ²*Wejuro ñ cesun*
it when past be.ep night God seq descend.df.al*

³*ò wa, “⁴*N daaso.”*
3sg say.ep 1sg friend*

‘¹When it was night, ²God descended and ³said, “⁴My friend.”’

1.2. Contrafactual conditions. When a speaker posits a condition which he knows was not satisfied (often a possible world at an anterior time which never came true), we can call this a contrafactual condition. The apodosis of a contrafactual is contained in the main clause and indicates what would have been the result had the condition (the protasis) been satisfied. Such conditions are expressed in Waama by placing a past temporal particle both before the *ka* of the conditional clause and after the subject of the main clause. The particles which may occur in

these slots are as follows: *mun* 'past', *den* 'distant past', *daande* 'a long time ago', *bintu* 'a few years ago', *diiwo* 'last year', *daaŋo* 'a few days ago', and *dee* 'yesterday'. The particle used in the main clause may be the same as that in the conditional clause, but it need not be. In the main clause it is always followed by either the future marker *da* or the negative marker *ba* (indicating negation in the future).

In example (13) below (an excerpt from a folktale explaining why Africans are not rich), the contrafactual condition (subordinate clauses 1 and 2) was never accomplished. The result (clause 3) therefore never came true.

- (13) (context) The hunter killed the deer and his white wife died. Riches entered his house and followed his wife's family back to their village when they came to get her body.

¹*Waarō MUN KA nōŋo* ²*sa* ò *ba ko* *pēeri ŋa*
 hunter past if leave.perf so that 3sg not kill.perf deer that

³*yiribitiriba MUN-di DA i kpaati.*
 Blacks past-foc fut cont be rich

'¹If the hunter had left the deer ²and not killed it, ³the Blacks [Africans] would be rich.'

Example (14) illustrates another contrafactual. This time there are two main clauses (4 and 5) containing situations which did not come true because the contrafactual condition (clause 2) was not satisfied.

- (14) (context) Four men were walking along one behind the other when one of them stepped on a snake. They fled and no one was bitten.

¹*Mamma ka-dan,* ²*wako DAANO KA yēse* *yonto yon,*
 that.em if-neg foc snake the other day if bite.perf one one

³*yerika ti daaŋo* *ta puke,* ⁴*ti DAANO BA*
 work 1pl the other day rel hold.perf 1pl the other day not

sookiti ti kà woosi, ⁵*ti DAANO DA*
 be able.prog 1pl it finish.perf 1pl the other day fut

kasinun -di ti kon.
 hurry.df.al-foc 1pl go home.df.alt

‘¹Otherwise, ²if the snake had bitten one of us the other day, ³the work we were doing, ⁴we would not have been able to finish it, and ⁵we would have hurried to go home.’

1.3. Concessions. The particle *baa* ‘even’, when prefixed to a conditional clause, turns it into a concessional clause. Concessions in *Waama* may express two related kinds of concepts: irrelevance and unlikelihood.

We first examine concessions in which the condition is irrelevant to the truth of the main clause. In these cases, the main clause will be true no matter how demanding the condition. In (15), taken from a sermon, the speaker sets up as a condition (in clauses 1 and 2) the situation which he thinks would be the most likely to force the main clause (clause 3) to be false. But the main clause holds nonetheless.

(15) (context) It's like the fetish chicken: if they sprinkle water on a chicken to leave it for the fetish, they don't sell it.

¹BAA *dampo* KA *neki* ò ò wo puke, ²o ba kòssiti
 even taxes if want.stat 3sg seq 2sg hold.df 2sg
 not sell.ing

dà kòka.
 that chicken

‘¹Even if taxes want to hold you [fall due], ²you don't sell that chicken.’
 [‘Whether or not taxes fall due, you don't sell that chicken.’]

When the interrogative personal pronoun *wan* ‘who’ is the subject of a concessional clause of irrelevance, it acts as an absolute universal quantifier, as in (16) below.

(16) ¹BAA WAN KA *seji* *Wejuro*, ²ò da won darima.
 even who if accept.perf God 3sg fut hear.df sweetness

‘¹Whoever accepts God ²will be happy.’

Next we examine a concessional clause which expresses unlikelihood. Such clauses differ structurally from concessional clauses of irrelevance in that they contain the contrast marker *maa* ‘but’ immediately preceding *ka*. In combination with this marker, *baa* serves to indicate that the condition is contraexpected. The possible world set up by *ka* is a highly unlikely one (in relation to the preceding context), but still possible.

Example (17) comes from a procedural discourse on how to plant yams. Clause 1 is a contraexpected concession, i.e. it is highly unlikely that a yam that is planted too deep will come up. But even if it does, when it starts growing it will soon reach the hard earth at the bottom of the yam mound and cease growing.

- (17) (context) Then you plant the yam. You don't plant it very deep. If you plant it very deep IT WON'T COME UP SOON.

¹BAA bu MAA KA yerinde, ²daare dee dà
 ta ñeki
 even it but if come up.perf.al day that it rel want.stat

dà ðori, ³wɔɔ paaride da faki tiŋa kasima.
 it produce.df yam new fut reach.df earth quickly

'¹But even if it does come up, ²when it wants to produce, ³the new yam will reach the earth [the bottom of the mound] quickly (and be prevented from growing).'

1.4. Complements of verbs of cognition. Almost all verbs of cognition may have propositions as complements. However, a *ka*-marked proposition expressing a possible world can serve as the complement of only a very few verbs of cognition such as *mi* 'not know', *yen* 'see', and *bibi* 'ask'.

In (18) below, the speaker uses a combination of the verb *mi* 'not know' with a *ka*-marked complement to express her uncertainty as to the realization of the complement, i.e. as to whether she will get home by tomorrow.

- (18) N MI n KA da kori sari soro.
 1sg not know.ep 1sg if fut go home.df by tomorrow

'I don't know whether I'll get home by tomorrow.'

2. *Ka-di* Complexes

The combination of *ka* with the focal particle *di* as *ka-di* 'if with focus' presents an interesting situation. At the most basic level, this combination serves to mark a conditional framework like those which we have already examined. Example (19), which occurs in the context of a sermon, illustrates such a conditional framework.

- (19) ¹fen ti Pennato KA-DI, ²teetena ñ mi
 2sg.em 1pl Savior if-foc help.df.with opt 1sg

'¹If it's our *Savior* that you are, ²help me.'

This combination of *ka* and *di* may also mark options in *Waama*. When it marks options, *ka* takes on a restrictive function, that is, it restricts the options to those mentioned in the clause. There are no other options besides these. The focal particle *di* serves to mark new or contrastive information, i.e. information that is not recoverable from the preceding linguistic context. The *ka-di*-marked structure says nothing whatsoever about the relative likelihood of each of the options; we know only that they are both possible options.

Options within questions are not marked with *ka*, and will be treated in §2.4. Depending on whether they occur in main clauses or subordinate clauses, options are expressed slightly differently. We shall examine both cases in turn.

2.1. *Ka-di* complexes in main clauses. In order for two items to function as options in main clauses, *ya* ‘or’ must be inserted between the items and *ka-di* ‘if with focus’ must be placed immediately after the second item. Example (20) below illustrates the expression of options within the subject of an *irrealis* (future) main clause. The completeness of this main clause would be expressed in English by sentence final intonation on the word ‘market’.

(20) *Mɛn YA n nɛ KA-DI da taka kate.*
 1sg.em or 1sg mother if-foc fut go.df market

‘My mother or I will go to market.’

In (21), the options occur in the locative slot of an imperative verb.

(21) *Taka kate YA wɛndaaribu KA-DI!*
 go.df market or church if-foc

‘Go to market or to church!’

Interestingly, *ka-di* may also express options in a *realis* context, such as this perfective structure:

(22) *1Sa n tɛn kpaari yeya 2ti den tɛn dii-di wɔ̃ɔ tootu*
 when I yet stay.perf houses we past hab eat.perf-foc
 yam pounded

YA caabu KA-DI, 3yuno maa, ti du caabu yon-
di.
 or porridge if-foc today but we eat.ingr porridge only-foc

‘¹When I was still at home, ²we ate either pounded yam or porridge, ³but today we eat only porridge.’

2.2. *Ka-di* complexes in subordinate clauses. Options occur not only in main clauses, as in the preceding examples, but also in subordinate and embedded clauses. When they do, the surface forms are slightly different from those in main clauses. In (19) above, there is only one option expressed in the conditional clause. However, that conditional clause can be expanded to express one or more options to the original condition. This is done by adding another option marked with *ka-di* and inserting *ya* ‘or’ between the two options. In (23) below, the complex of options occurs in the conditional (or subordinate) clause, and is an expansion of the *ka* clause of (19).

(23) *1fen ti Pennato (KA-DI) YA ti Yombite KA-DI,*
 2sg.em 1pl Savior if-foc or 1l Lord if-foc

2teetena n mi
 help.df-with opt 1sg

‘¹if you are our Savior or our Lord, ²help me’

It should be noted that the *ka-di* affixed to the first option within a subordinate clause (and always shown inside parentheses in these examples) is deletable. The speaker may leave it out for the sake of style and brevity without changing the meaning, but it remains the underlying structure. If we compare this with the surface structure of options in main clauses treated in the preceding section (20,21), we see that the first option in a main clause does *not* have an underlying *ka-di* attached to it. Thus we may say that it is this first deletable *ka-di* which turns the main clause into a subordinate. In English the incompleteness of a subordinate clause like that in (11) would be expressed by a non-final intonation on the word ‘Lord’, indicating that something must follow.

Example (24) below occurs in a sermon and is another example of the expression of options within a subordinate clause. It serves to illustrate two points. Firstly, the complex of options (consisting of clauses 4 and 5) is the embedded clausal object of the verb *won* ‘hear’ (which is itself in the subordinate clause 3 beginning with *wende nɔɔre* ‘the day when’). Secondly, the options are between situations, and the situations themselves are described by clauses (4 and 5 respectively).

(24) *1Dà maa i yiriba kutire-di 2bà den tàn ta debiri Yeesu*
 it and be people many-foc 3pl past hab rel
 follow.prog Jesus

³*wende* *nɔɔre* *bà* *ta* *da* *won* *sa* ⁴*ò* *yujuntun* *tiŋu*
 day when 3pl rel fut hear.df that 3sg enter.ingr.al village

(KA-DI) YA ⁵*ò* *miŋiti* *parade* *mii* KA-DI.
 if-foc or 3sg pass.ingr place in if-foc

‘¹And there was a crowd of people ²who used to follow Jesus ³when they heard that ⁴he was entering a village or ⁵he was passing a place.’

2.3. *Ka-di* complexes as complements. Options with a deletable *ka-di* after the first item occur in other types of subordinate clauses as well. In (25) we find the complex of options as the embedded object of the verb *neki* ‘want’ in an ordinary conditional *ka* clause (which is, of course, a subordinate clause). Note that here, the conditional clause already has its own *ka* expressing a possible world. This *ka* is over and above the *ka*’s of the *ka-di* option markers. Note also that the whole conditional clause (1) precedes the main clause (2) and thus sets up a situational framework for that main clause.

(25) ¹*O* *KA* *neki* *caabu* (KA-DI) YA *wɔɔtootu* KA-DI, ²*o*
 2sg if want.stat porridge if-foc or fufu if-foc 2sg
bibi *pe* *woroo*.
 ask.df woman this

‘¹If you want either porridge or fufu, ²ask this woman.’

A complex of options with a deletable *ka-di* on the first item may occur within the context of a conditional *ka* clause which is the complement of a verb of cognition like *mi* ‘not know’, *bibi* ‘ask’, or *yen* ‘see’ (cf. §1.4).

In (26) below, each option is not only marked by a *ka-di* at the end of the clause expressing the option, but there is also another *ka* immediately following the subject *ò* ‘he’ of each clause. Like the corresponding *ka* in the sentence initial conditionals of (25), the *ka*’s in (26) also express possible worlds. However, in (26) these possible worlds are not situational frameworks.

(26) (context) A doctor has just been asked whether a patient will live or die. He says,

¹*N* *mi* ²*ò* *KA* *da* *fɔɔki* *KA-DI* ³*YA* *ò*
 1sg not know.ep 3sg if fut be healed.df if-foc or 3sg

KA da kpi KA-DI.
if fut die.df if-foc

‘I don't know ²if he will be healed ³or if he will die.’

2.4. Expression of options in questions. The *ka-di* marker is missing from options expressed within questions. This may seem strange at first sight, but it makes sense for the following reason. Polar (yes/no) questions in Waama are marked with the particle *ni*, while content questions are marked with a different particle, *nu*. Questions including options are also marked with the same content question marker, i.e. *nu*.

In a clause which is a content question, all the information in the clause except the question word is given information and so a content question is a question within a restricted framework. In a very similar way, we have found that when *ka-di* marks options, the *ka* restricts the discussion to the options stated and no other options are being considered. Thus *ka* also marks a restricted framework, and it seems that *ka* and *nu* are both restrictive in roughly the same sense. *Nu* also has the semantic component of “question”, so once a question with options has been marked with *nu* (with its built-in component of restrictiveness), there is no further need to redundantly mark restrictiveness with a *ka*.

Example (27) illustrates the structure of an ordinary content question and a possible answer to it. The question requires that the answer specify a certain day; it may not simply consist of ‘yes’ or ‘no’. Note the focal particle *di* which marks the new information being requested (‘which day’).

(27) Q: ¹*Daasire-di o ta da taka Kotonu*
NU?
 which day-foc 2sg rel fut go.df Cotonou interrog

A: ²*N da taka Kotonu kate daare-di.*
 1sg fut go.df Cotonou market day-foc

Q: ‘¹Which day are you going to Cotonou?’

A: ‘²I am going to Cotonou on market day.’

Example (28) below illustrates the expression of options within a question. By comparing it with (27), we can see the similarity between the structure of content questions and that of questions expressing options. Restrictiveness in the English translation of the content question in (28) is correctly marked by a rising intonation on ‘market’ and a falling intonation on ‘church’.

(28) *O da taka kate YA wendaaribu-di NU?*
 2sg fut go.df market or church-foc interrog

‘Are you going to market or to church?’

2.5. *Ka-dan* complexes. Exceptions to negatives and universal quantifiers are formed in *Waama* by placing *ka-dan* ‘if with negative focus’ after the exceptional element. This marker is similar to *ka-di* in two ways: it is restrictive (restricting the exceptions to those mentioned), and it marks contrastive information which is not recoverable from the preceding context.

In example (29), taken from a sermon, *ka-dan* marks clause 6, *Weṅuro Bika den yēema* ‘the blood of God’s Son’, as an exception to all the other types of blood mentioned in the sentence. It is exceptional in that it is the only type of blood that *does* have power.

(29) ¹*Dà tori-dì ti deru yuṅo,* ²*ti ñ tòn wa,* ³*Kòòka*
 that for-foc 1pl sing.prog today 1pl seq hab say.ep
 chicken

yēema paana wenun, ⁴*saaku yēema paana wenun*
 blood not have.ep power sheep blood not have.ep power

⁵*nako yēema paana wenun,* ⁶*Weṅuro Bika den yēema KA-DAN.*
 bull blood not have.ep power God’s Son his blood if-neg foc

‘¹For that reason we sing today and ²we say, “³Chicken blood doesn’t have power, ⁴sheep blood doesn’t have power, ⁵bull blood doesn’t have power - ⁶only the blood of God’s Son.”’

Example (30) shows how *ka-dan* marks an exception, ‘man’ to the universal quantifier ‘all’: man is the only animal stronger than the elephant.

(30) ¹*Mamaabu so-di yaki tòosu su maasi*
 elephant conquer.perf-foc animals other prn all

²*yirisaaro yon KA-DAN.*
 man only if-neg-foc

‘¹The elephant is stronger than all the other animals ²except man.’

3. Conclusion

In this paper I have demonstrated that the particle *ka* in Waama may occur in a number of different structures, but nearly always with an underlying conditional function. In all but one case it serves to set up possible worlds. The only exception to this rule is the case where *ka* introduces an adverbial time clause whose truth is inferrable either from the preceding linguistic context or from the body of knowledge common to Waama people.

Appendix

Key to abbreviations used in word-by-word glosses

al	allative	
cont	continuity marker	(i)
df	dependent form of verb	
em	emphatic	
ep	extra-paradigmatic verb	
foc	focal particle	
fut	future tense	
hab	habitual	
ingr	ingressive aspect	
interrog	interrogative marker	(<i>nu, ta</i>)
neg	negative	
opt	optative particle	(<i>ñ</i>)
perf	perfective aspect	
prn	pronoun	
prog	progressive aspect	
rel	relative particle	(<i>ta</i>)
seq	sequential marker	(<i>ñ</i>)
stat	stative aspect	
lsg	first person singular	
1pl	first person plural	
2sg	second person singular	
2pl	second person plural	
3sg	third person singular	
3pl	third person plural	

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ERRATA

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The Editor regrets that the following errata appear in Volume 22, Number 2, 1991 in the article by Victor E. Omozuwa, "Acoustic cues for the perception of tones of disyllabic nouns in Edo". Because of inordinate delays in mail service, the Editor decided to rely on proofreading by editorial staff and to go ahead with publication without having received corrected proofs from the author.

- p. 134, 3rd to last line of Abstract: "depeinding" should be "depending"
- p. 136, 3rd line from bottom: "lsit" should be "list"
- p. 138, 2nd line of §1.2.2 and p. 139, 1st line: "V_i" should be "V₁"
- p. 141, 9th line of §2.3: "tha" should be "that"
- p. 145, item #2 of "EDO V̂ĈV̂ WORDS": "[idì]" should be "[idī]"; the same correction is to be made on p. 149, item #2 of Table 2a and item #2 of Table 2b

The following corrections were made by the author but were not in the original manuscript:

- p. 146, "EDO V̂ĈV̂ WORDS", the "Phonetic Realization" of items 1-7 should be corrected to read as follows:

1. [ibâ]
2. [ókô]
3. [údê]
4. [ázâ]
5. [ókâ]
6. [ákô]
7. [é!bò]

The changes noted here for items 1-6 should also be made on p. 153 to items 1-6 of Table 4a and on pp. 154-155 to items 1-6 of Table 4b.

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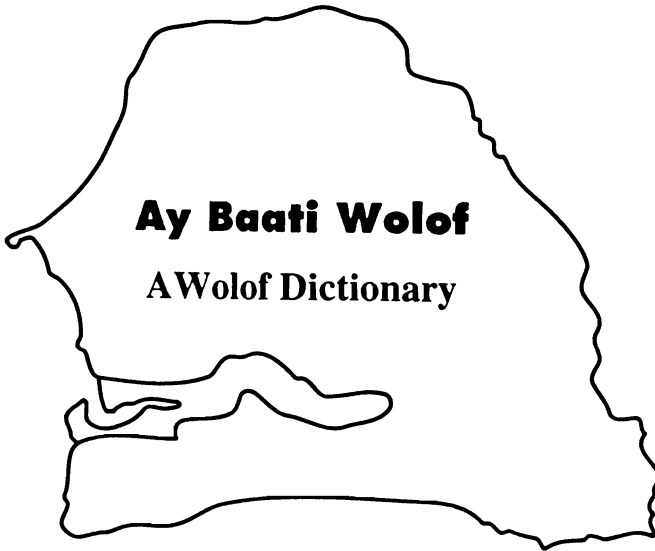
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