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HYPOTHESES CONCERNING THE PHONETIC AND FUNCTIONAL ORIGINS OF TONE DISPLACEMENT IN ZULU

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High tones in Zulu are displaced rightward from their vowel of origin in the context of preceding "depressor" consonants, a segment type traditionally considered to possess breathy phonation. In this paper, I suggest that physical properties of the speech mechanism—phonetic factors—may have initially induced the apparent rightward "unhinging" of high tones in the context of preceding depressors, and that independent functional factors may have induced the conventionalization of tone displacement. As tones were less likely to neutralize upon displacement, displaced tokens were more often perceived unambiguously, and, hence, were more likely to be reproduced.

1. Introduction

Every linguistic sound system is the product of its own unique history. As phonetic, cognitive, and social forces interact over the generations, each language, each dialect, and ultimately each idiolect, maintains uniqueness. Of course, documenting completely the interactions among these forces is a largely impossible task. But if we investigate a small corner of the sound system across a large population of speakers, we might begin to disentangle the web of forces that are responsible for its patterning. In this paper, I present hypotheses about some of the phonetic, cognitive, and social forces that may have given rise to a sound pattern found in Zulu and related Nguni languages: high tones are displaced rightward in the context of preceding "depressor" consonants (see, for example, Beach

[1924], Doke [1926], Lanham [1958], Cope [1960], [1966], Schachter [1976], Rycroft [1980], Khumalo [1981], Traill et al. [1987], Traill & Jackson [1988]). Many researchers report that depressor consonants ("D") are accompanied by breathy phonation on the following vowel [Tucker 1949, Cope 1960, Rycroft 1980], as well as extreme pitch lowering at the consonantal offset. Following depressor consonants, high-tones on short vowels are displaced from their vowel of origin to a following vowel (DV˥ CV˩→ DV˩ CV˥; where D=depressor, C=non-depressor). Moreover, tone displacement is blocked if a depressor immediately follows (DV˥ DV˩ → DV˧ DV˩). I consider research results from a number of disciplines—phonology, phonetics, psychology—and suggest ways in which the general principles which seem to underlie these results may have interacted over time to culminate in the Zulu sound pattern in evidence today. I argue that the diachronic "trigger" of high tone displacement in the context of preceding depressor consonants may have been phonetic in origin. However, there may be functional reasons why the pattern has been conventionalized in the present-day manner.

While readers may have expertise in one or more of the areas considered herein, I hope to impart a general understanding of how the various forces that seem to be at work might have interacted over time. Indeed, phoneticians may be standing at the ready to provide compelling phonetic motivation for the patterns in evidence; variationists might offer a statistical model of the sound pattern; phonologists might provide a formal model of the broadly categorical elements of the pattern; cognitive scientists may apply general learning theories to the acquisition of the pattern; historical and comparative linguists might document the sound change over time and space. I hope to show that research in all of these areas is necessary—if not necessarily sufficient—to achieve an explanatorily satisfying account of sound patterns, both in Zulu and elsewhere. The goal, then, is not to provide exhaustive discussions of the various forces argued to be at work here. Rather, I aim to show how experts from a number of fields might combine their talents to arrive at a satisfying explanation for the sound pattern in question; simple, general, and broadly applicable hypotheses are a hallmark of compelling scientific investigations.

Given that experts in these fields employ rather different research methodologies, this paper is structured to give voice to each, in turn. In section 2, I provide a literature review of linguistic descriptions of the Zulu tone displacement pattern. In Section 3, I exemplify the pattern, discussing in detail the phonological environments in which tone displacement is observed, and—equally important—the environments in which tone displacement is not observed. In Section 4, I consider the phonetic motivation for tone displacement, offering a tutorial on the

aerodynamic and articulatory constraints that may have set the pattern into diachronic motion:

- Depressor consonants have been characterized as phonetically and/or historically breathy-voiced.
- Obstruent voicing in general, and obstruent breathy-voicing in particular, is associated with pitch lowering at consonant release.
- Pitch rises take longer to implement than do pitch falls.
- In the context of a depressor consonant, a following high tone may be achieved only after the following consonantal gesture has been completed, culminating in an apparent displacement of the high tone.

I further report on a recent instrumental study [Russell 2000] which numerically documents the relevant pitch perturbation patterns.

In Section 5, I depart from phonetic considerations and instead focus on functional forces which may have led to the present-day convention of tone displacement:

- If tone displacement were not to take place, it is possible that these high tones would not be accurately conveyed to listeners.
- As these high tones are contrastive in Zulu, non-displacement might run the risk of neutralizing a significant number of lexical distinctions.
- Displaced high tones were therefore more likely to maintain lexical contrasts than non-displaced high tones.

In Section 6, I discuss the possible diachronic interactions of the phonetic and functional influences on the pattern, in the context of certain general cognitive abilities documented in humans and many lower animals as well:

- There is inherent variability in speech production; both displaced and non-displaced tokens are among the possible variants.
- Learners come to largely reproduce the nuances of variation they perceive their elders engaging in, despite the fact that variants with displaced tones are more successful at keeping contrastive elements distinct. That is, the variability engaged in by elders will be largely matched by learners.
- Ambiguous tokens will sometimes be impossible to categorize, and, hence, will not be added to the pool of tokens over which variability is calculated.
- Due to the greater likelihood of unambiguous perception of displaced variants, learners' calculated variability may differ slightly from their elders' in that the variants which contrast more sharply with oppositions will more often be perceived correctly, hence, in turn, be more likely produced.
- The variability inherent in speech production may be the fodder for these sorts of sounds changes; the more distinct the variant from an acoustically

similar contrastive value, the more likely the system will wend towards this variant.

I suggest then, that tone displacement had a phonetic trigger, but that a listener-based functional reaction led to a conventionalization of the pattern.

Finally, in Section 7, I briefly discuss other patterns from a variety of unrelated languages that seem amenable to a similar explanation.

2. Overview of previous literature on depressors and their effects on pitch

Cope [1966] reports that the consonants listed in (1) belong to the depressor class. He claims that depressors are characterized by their "heaviness" (p.113), that is, by a combination of breath and voice, although not all researchers agree that this is the proper phonetic characterization of the class. Cope further reports that Zulu possesses three contrastive tone patterns, high, low, as well as a high-low toneme cluster.

(1) Zulu depressors

voiced aspirated stops	bʰ	dʰ		ɟʰ	gʰ
voiced affricates		dʒ			
aspirated clicks		ɡ|ʰ	ɡ‖ʰ	ɡ!ʰ	
prenasalized aspirated clicks		ᵑɡ|ʰ	ᵑɡ‖ʰ	ᵑɡ!ʰ	
voiced fricatives	v	z		ʒ / ɮ	
breathy nasals	m̤	n̤		ɲ̤	ŋ̤
breathy glides	w̤			j̤	
laryngeals	ɦ				

Lanham [1960:106] reports that, while both Zulu and the related Nguni language of Swati display tone displacement in the context of preceding depressors, in Xhosa, another Nguni tongue, the so-called "active measure" of tone displacement has been reported to be a mere tonal upglide: DV↗CV↓. Chuck Kisseberth [p.c. 1999] informs me that Xhosa speakers now freely vary between this tonal upglide, upglide-and-spread (DV↗CV↘), and displacement realizations (DV↓CV↘).

In perhaps the only invasive investigation of the depressor phenomenon, Traill et al. [1987] report that these consonants do not seem to possess the laryngeal posture characteristic of breathy phonation (that is, larynx lowering and vocal

fold vibration with an anterior chink). This does not surprise these researchers, since they do not hear breathy phonation. They do, however, observe fiber-optically that two of their three Zulu-speaking subjects show "an anterior movement of the arytenoids and the posterior movement of the tubercle of the epiglottis," which, they claim "induces an unusual degree of shortening of the vocal chords [sic] with a consequent lowering of their rate of vibration" (p.265). They further suggest that some other speakers might lower pitch here with the better-known mechanism of crycothryroid laxing.

The earlier results of Rycroft [1980] are consistent with elements of Traill et al.'s findings, as he hears neither breathiness nor voicing on depressor stops. He does, however, report that the releases of these stops are breathy-voiced. In the context of a low tone, the following vowel is breathy for its entire duration. In the context of a high tone, the following vowel is breathy during its initial portion, and modal for its latter portion. Along with all other researchers, Rycroft reports that depressor consonants induce a far greater pitch lowering than do standard low tones. Finally, he suggests (p.17) that depressors might derive historically from fully breathy-voiced stops (i.e., those that are voiced on their closures as well as breathy upon their release), but have shifted over time to their current manifestation. This, notice, is consistent with their tonogenetic-like quality: as the voicing contrast here underwent attrition, the pitch perturbing effects that are a natural concomitant of voicing and breathiness may have become exaggerated (see Section 5 for further discussion). If Traill et al. are correct in their statement that epiglottal movement induces significant pitch lowering, this vocal tract configuration may be a latter-day reflex of the earlier closure-voicing distinction. Schachter [1976] posits a similar story for the historic origins of depressors in Swati, suggesting that the present-day "unnatural class" of depressors historically derives from voiced obstruents.

Beyond Nguni, depressor consonants have been observed in, for example, Tsonga [Traill & Jackson 1988], and Ikalanga, a Bantu language of the Shona group spoken in Botswana [Hyman & Mathangwane 1998, Mathangwane 1999]. These authors describe depressors as voiced obstruents, and observe that they block high tone spreading, convert high tones to rising contours, and induce an overall pitch lowering. Elsewhere, depressors have been observed in the Mijikenda Bantu subgroup, including Chikauma and Chirihe, which have been described in terms similar to those in Ikalanga, and engage in similar phonological behavior [Cassimjee & Kisseberth 1992]. Without a thoroughgoing instrumental investigation of all such patterns, however, the label "depressor" must suffice as a loose cover term for perhaps any number of phonetically distinct pitch-lowering and displacement-triggering consonants.

3. The sound substitution pattern: the phonology of Zulu tone displacement

The general phonological pattern of tone displacement consists of an apparent rightward shift of high-tones from short vowels when they are preceded by a consonant of the depressor class. The pattern is schematized and exemplified in (2). (Data from Cope [1966]; depressors are underlined; displaced tones are bold; depressor effects are italicized.) Spectrograms and pitch tracks (2b) show the first two forms, i-ɬsi-ɬa:-ɬlo-ɬ and i-ɬzi-ɬɬa:-ɬlo-ɬ. Observe, especially, the difference in the pitch of the second vowels (indicated with upward arrows). The first form has a high tone, while the second form has a low tone, with the high being displaced. The high pitch at the beginning of the third syllable of i-ɬsi-ɬa:-ɬlo-ɬ (indicated with the horizontal arrow) is probably a consequence of the preceding voiceless lateral, which is likely to induce a brief pitch increase at its offset due to high oral flow. The Zulu speaker is an adult male.

In (2), the presence of a depressor consonant occurs with a very low pitch—lower than phonological low tones—on the rightward vowel, and a high pitch beyond the release of the next consonant, after which the following tone is implemented. The pitch track clearly shows pitch changes that depressor consonants induce.

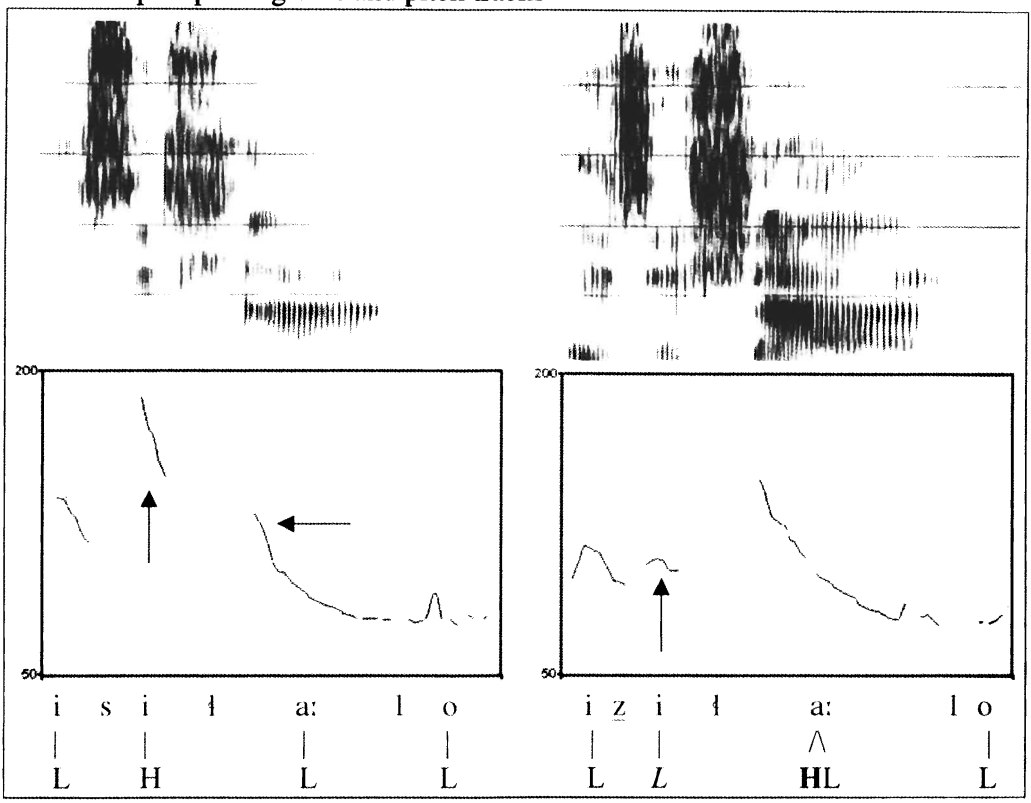
(2) a. schematic:

D V C V(:)
| |
L **H**

examples:

i s i ɬ a: l o	'chair'	i z i ɬ a: l o	'chairs'
| | | |		| | ∧ |	
L H L L		L *L* **HL** L	
i↓ n s i: z w a	'young man'	j i n s i: z w a	'by a young man'
| | |		| ∧ |	
H↓ L *L*		*L* **HL** *L*	
i ɲ o: n i	'bird'	n e ɲ o: n i	'with a bird'
| | |		| ∧ |	
H L L		*L* **HL** L	

b. Sample spectrograms and pitch tracks



However, tone displacement does not take place under certain conditions. First, displacement does not take place from long vowels. In (3a) we observe no displacement on to a following syllable in the context of a long vowel, but displacement indeed takes place upon substitution with a short vowel. Phrase-penultimate vowels regularly lengthen, so displacement is not observed in this context either (3b). Furthermore, displacement does not take place from phrase-internal penults, which are not lengthened (3c). Finally, when the postvocalic consonant is also a depressor, displacement is not observed (3d).

Cope reports that displacement is also blocked in the context of a following derived low-high toneme cluster "on analogy with [depressor-induced] rising tones" [1966:86]. Additionally, Lanham states that displacement is blocked "if the displaced toneme is to fall on a monosyllabic root" [1960:107].

(3) a. *no displacement from long vowels:*

z̲ iː kʰ oː n a 'they being present'

∧ | |

*L*H L H

displacement from short vowel:

z̲ i kʰ oː n a 'they are present'

| ∧ |

L **H**L H

b. *no displacement from phrase-final (lengthened) penults:*

iˆ n d̲ʰ uː n a 'headman'

| ∧ |

H *L*H L

displacement from short vowel:

e n d̲ʰ u n eː n i 'to a headman'

| | ∧ |

H *L* **H**L L

c. *no displacement from phrase-internal (non-lengthened) penults (datum from my Zulu consultant):*

iˆ n d̲ʰ u n a (# iŋkuːlu) 'headman (is big)'

| ∧ |

H *L*H L

d. *no displacement when a depressor follows:*

i z̲ ɪ g̲!ʰ oː k o 'hats'

| ∧ | |

L *L*H *L* L

eˆ mb̲ʰ u z̲ iː n i 'to a goat'

| ∧ | |

Hˆ *L*H *L* L

4. On the phonetic origins of Zulu tone displacement

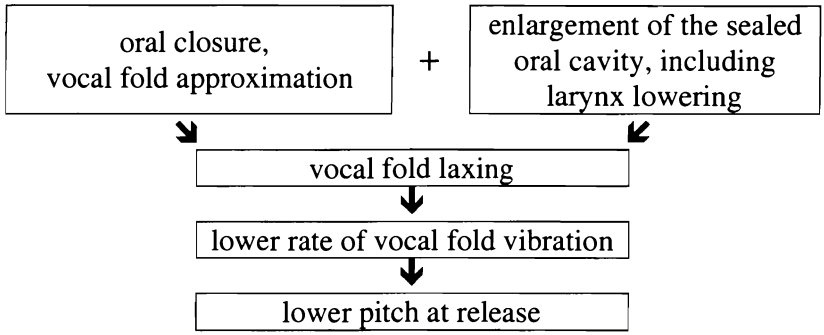
Hyman & Schuh [1974], in their study of common tonal patterns among West African languages, make a number of observations about diachronic and synchronic tonal behavior. For present purposes, three of their general observations are especially relevant: (1) high tones are more often phonologically active than low tones; (2) spreading or displacement is more often rightward than leftward; and (3) spreading or displacement is more likely to take place when the pitch interval between the two tones is relatively great. Tone displacement in Zulu is consistent with all three of these generalizations. Indeed, the descriptive generalizations of Hyman & Schuh, and their consistency with the Zulu pattern, call out for a more thorough investigation. In this section, I suggest that patterns such as

those in Zulu may have their diachronic origins in certain phonetic forces on the sound system. I provide phonetic tutorials about pitch lowering at voiced (or breathy) stop releases, and about the speed at which speakers may produce pitch rises.

4.1 Laryngeal settings accompanying obstruents affect pitch at consonant release. It has often been noted that obstruents in general, and breathy-voiced obstruents especially, induce pitch perturbations upon their release [Hombert 1978, Maddieson 1978, Ohala 1978]. There are, in fact, reasonable aerodynamic and articulatory explanations for such effects. Both the pitch perturbation effects and one proposed explanation for them are briefly summarized here.

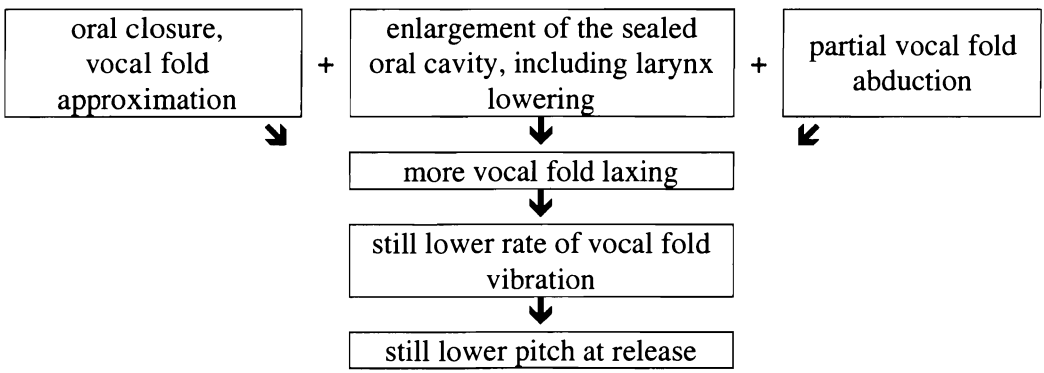
Voiced stops typically induce pitch lowering upon release, whereas voiceless stops typically induce pitch raising. Some researchers (for example, Ohala [1972], Ewan & Krones [1974], Ewan [1976], Hombert, Ohala, & Ewan [1979]) implicate the tenseness versus laxness of the vocal folds at the point of stop release to account for these pitch perturbations. The route from contrastive voicing to vocal fold laxing is a fairly circuitous one, so allow me to elaborate by recapitulating the main thrust of these researchers' hypothesis. In certain contexts, contrastively voiced stops may be accompanied by an overall enlargement of the sealed supraglottal cavity (see, for example, Westbury & Keating [1986]). This cavity enlarge-ment allows more air to cross the glottis into the sealed chamber, increasing the duration of transglottal flow, and increasing the duration of vocal fold vibration, which is likely to heighten the salience of closure voicing cues. This increased salience is important so that the voiced-voiceless contrast is maintained. Cavity expansion may be achieved in a number of ways, including cheek puffing, pharyngeal widening, velic raising, and larynx lowering. Larynx lowering may also involve an apparent automatic laxing of the vocal folds. It is this fold laxing which might contribute rather significantly to the observed pitch lowering observed at the release of voiced stops, as lax vocal folds are a well-attested concomitant of a lowered rate of vocal fold vibration, and lowered pitch [Hombert 1978]. This approach has been termed the "vertical tension hypothesis" by Hombert [1978]. Hombert, and also Riordan [1980] and Kingston [1985a,b], discuss certain empirical problems with the vertical tension hypothesis. However, all nonetheless concur that a positive correlation indeed exists between stop voicing and pitch lowering at release. The flowchart in (4) recapitulates the essentials of the vertical tension hypothesis. Indeed, the diachronic relationship between voiced stop release and pitch lowering is rather well established. In Yue Chinese, for example, an earlier voiced stop—voiceless stop contrast has evolved into low tone register—high tone register contrast [Karlgren 1926].

(4) Flowchart of vertical tension hypothesis



When we add the partial vocal fold abduction necessary for breathy voicing, further pitch lowering may be induced, as the fold laxing which accompanies abduction typically occurs with a still-lower rate of vocal fold vibration (5). This has been observed in Hindi voiced aspirates, for example in Kagaya & Hirose [1975]. The diachrony of Punjabi is also consistent with this scenario. Here, voiced aspirates have evolved into plain stops followed by low tones [Gill & Gleason 1969, 1972].

(5) From breathy voice to pitch lowering



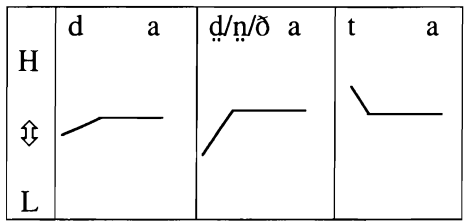
Breathy sonorants and voiced fricatives, like breathy voiced stops, possess both voicing and breath. Pitch lowering here has been observed as well.

Given the phonetic state of affairs during breathy phonation, pitch-lowering effects on the first portion of the following vowel in Zulu and elsewhere become readily understandable. And once again, recall that even if epiglottal movement is responsible for present-day pitch lowering here, this vocal tract configuration may

be seen as a latter-day reflex of an earlier closure-voicing distinction. The "trigger" of tone displacement may have changed, but the process remains.

The four patterns discussed—voiced stop, breathy-voiced stop, voiced fricative/breathy sonorant, and voiceless stop—plotted against their pitch-perturbing effects, are presented in schematic form in (6) (where H = higher pitch, L = lower pitch).

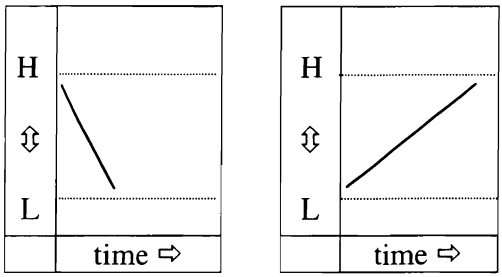
(6) Patterns of pitch perturbation



In fact, Löfqvist [1973] as well as Hombert [1975] show that, in some non-tonal languages, the pitch perturbing effects of the laryngeal settings of stops persist for more than 100 msec after release, far longer than a purely proximal aerodynamic account would predict; Ohala [1978:26] reports that the differing aerodynamic conditions present at obstruent release lasts "only a few milliseconds" beyond the beginning of voicing. It is this sort of finding—that phonetic explanations alone cannot fully account for language-specific production conventions, but nonetheless might serve to constrain the general direction of sound change—where functional forces on the system become relevant. I turn to this issue in Section 5. Before doing so, however, another relevant physiological finding must be presented.

4.2. Pitch rises take longer than pitch falls. The second phonetic finding that is relevant to tone displacement concerns the speed at which pitch contours can be induced by the laryngeal apparatus. Gandour [1974] reports that rising tones in Thai persist longer than do falling tones. Xu & Wang [2001] find a similar pattern in Mandarin Chinese. Moreover, in two studies [Ohala & Ewan 1973, Sundberg 1979] untrained subjects took a significantly greater amount of time moving from a lower-to-higher pitch across a given frequency range than vice versa. That is, pitch rises are accomplished more slowly than pitch falls of the same acoustic distance. A schematic is provided in (7).

(7) Time difference in pitch fall vs. pitch rise

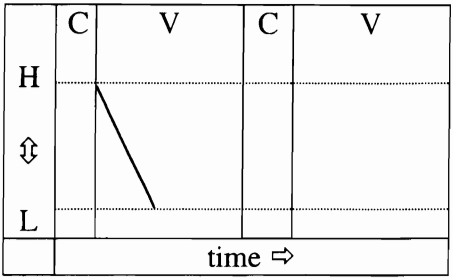


4.3. Tone displacement may be an illusion. These two distinct phonetic findings regarding pitch—pitch perturbation during breathy voice, and speed of pitch change—may have interacted in the diachrony of the Zulu tone displacement pattern. Specifically, when considering the state of the larynx in combination with the state of the supralaryngeal articulators, a characterization of the phenomenon as an active "displacement" may be viewed as illusory. Given the extra-low pitch following depressors (which, recall, is lower than the pitch of standard low tones), and also, given the sluggishness of pitch rises in comparison to pitch falls, the supralaryngeal articulators may already have achieved the proper con-figuration for a following consonant before the pitch rise is fully achieved. The result is the illusion of an active process of tone displacement: upon the release of this subsequent consonantal gesture, finally, the high pitch is achieved, and thus it seems to have flopped from one vowel to the next. As suggested by Ohala [1978:31], "...[S]ince falling tones can be produced faster than rising tones...they might be less likely to 'spill over' onto the next syllable." The schematic in (8d), which superimposes the relevant oral gestures on to the pitch contours, reveals the suggested illusion of tone displacement.

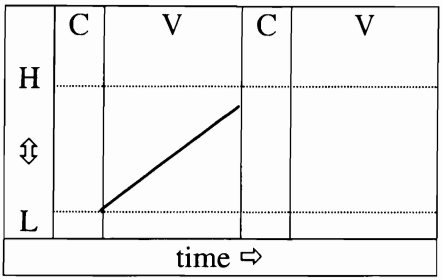
Note that we may now formulate a hypothesis about the apparent blocking of tone displacement from phrase-penultimate vowels. As these penults are automatically lengthened in Zulu, such vowels are apparently of sufficient duration to accommodate the pitch rise: the rise is achieved before the following consonant is implemented, and so there is no apparent displacement (9).

We are, in addition, now able to hypothesize about the blocking behavior of following depressors. As following depressors once again induce a pitch-lowering effect upon their release, there is equally little hope of the displaced high tone being realized in this context. Consequently, even in the context of a short vowel, such high tones are only realized at the end of their vowel of origin: here, the articulatory demands of the second depressor might indeed be characterized as "blocking" the propagation of the pitch rise. That is, in non-depressor contexts

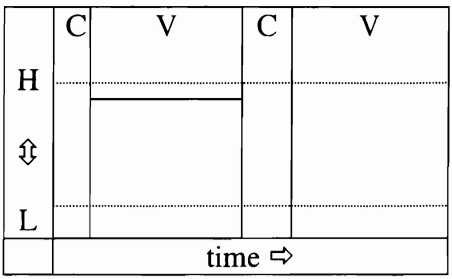
(8) a. HL sequence with no depressors



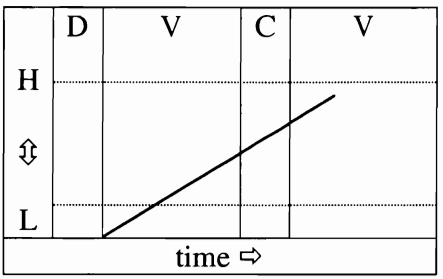
b. LH sequence with no depressors



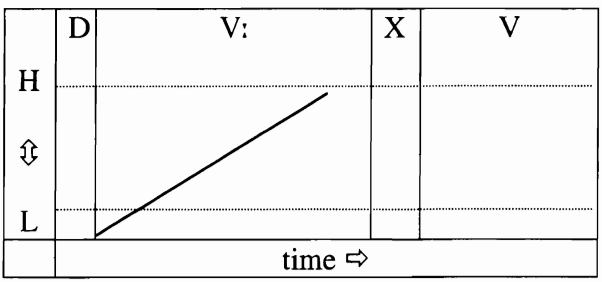
c. H with no depressor



d. H with depressor

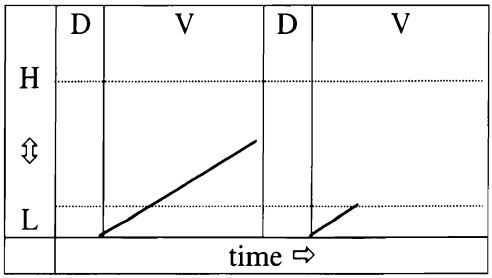


(9) Pitch rise without displacement



there are no conflicting articulatory demands made of the laryngeal apparatus that might inhibit the realization of the high tone. However, when a depressor intervenes between a high tone and the second vowel, the laryngeal musculature once again assumes the posture characteristic of depressors, thus inhibiting the high tone's realization on that second vowel (10). Thus, although depressors may no longer involve breathy phonation at their offset, the preceding scenario provides a working account of their paleophonetic origins.

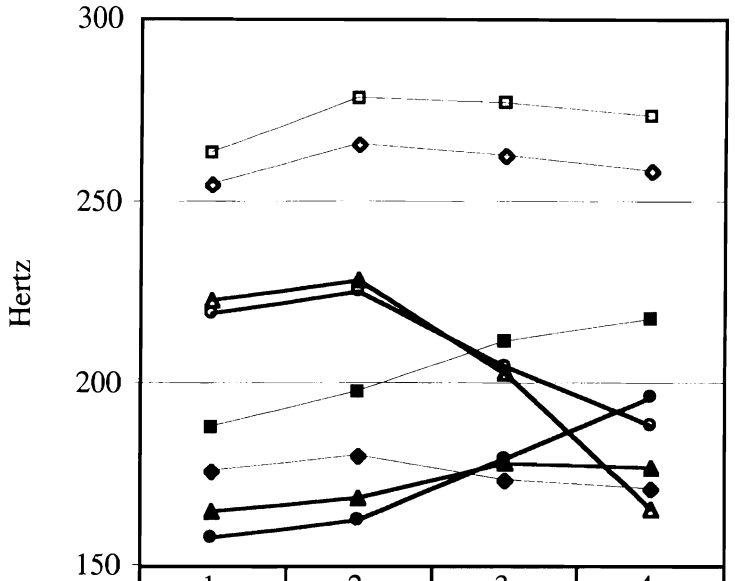
(10) H with intervening depressor



4.4. Instrumental analyses support impressionistic descriptions of pitch effects. In a companion piece to the present study, Russell [2000] instrumentally investigates certain phonetic aspects of the interaction of tone, vowel length, and depressor consonants in Zulu. The figure in (11) provides pitch contour information for one of Russell's subjects, at four points along the duration of the initial vowel in the domain under investigation, pooled over eighteen tokens for each of her eight series (her second subject produced similar—though less pronounced—results). Point 1 is at consonant release, Point 2 is at the onset of a clear vowel formant structure, Point 3 is at vowel midpoint, and Point 4 is at vowel offset. The reader is cautioned that time is not drawn to relative scale: half the vowels are long (plotted with darker lines), and half are short (plotted with lighter lines).

Several aspects of this pitch patterning are relevant to the present discussion. Consistent with the impressionistic descriptions of all other researchers, Russell instrumentally confirms that depressor consonants co-occur with a much lower fundamental frequency at consonant release (solid points at time 1) than do non-depressors (hollow points at time 1). Short vowels preceded by non-depressors (CV˥ DV˩, CV˥ CV˩) begin at the highest frequencies, and retain this high range for their duration. Long vowels preceded by non-depressors (CV:˥ DV˩, CV:˥ CV˩) begin high (though not as high as their short counterparts), then lower over the course of the vowel. (In my experience, pitches which listeners label "high" are quite often falling in nature, rather than level high; this is especially true for long vowels). In at least one other study [Silverman et al. 1995], high tones on short vowels in Jalapa Mazatec are found to be higher in pitch than high tones on long vowels; the Zulu pattern matches the Jalapa Mazatec pattern in this respect. The short vowel preceded by a depressor and followed by a non-depressor (DV˩ CV˥) ends quite low. In this context, the high tone is displaced onto the following vowel. The origin of this pattern may be related to the hypothesis that there may be insufficient time for the pitch to significantly rise during the duration of the

(11) Pitch changes (in Hz) over time for one speaker



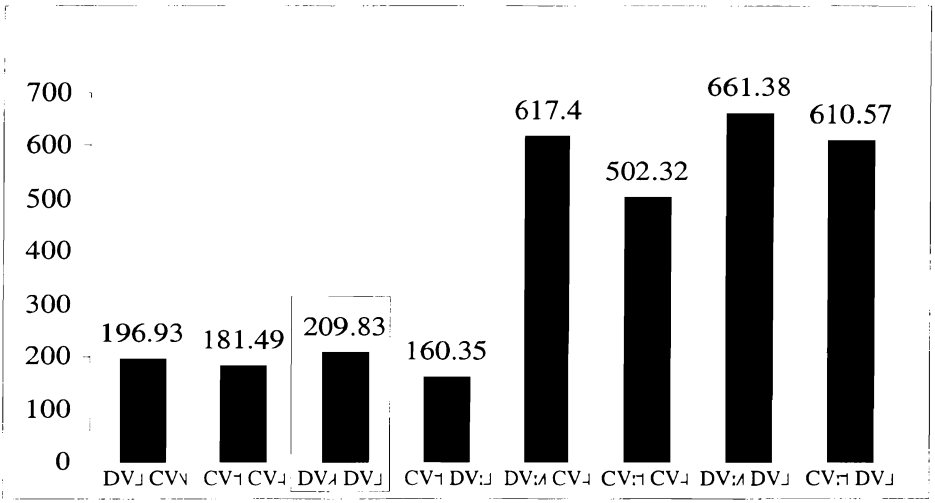
	1	2	3	4
CV˥ DV˩	262.82	278.23	276.94	273.40
CV˥ CV˧	254.89	265.74	262.29	258.50
CV:˥DV˩	223.21	228.49	203.07	165.85
CV:˥ CV˧	219.39	225.87	205.18	188.59
DV˩ DV˩	187.86	197.84	211.79	217.80
DV˩ CV˥	176.27	180.07	173.46	171.28
DV:˩DV˩	165.32	168.55	178.47	177.10
DV:˩ CV˧	157.81	162.57	179.64	196.43

time (normalized)

short vowel. All other depressor-initial configurations (DV˩ DV˩, DV:˩ DV˩, DV:˩ CV˧) involve significant upglides. Here, both DV:˩ DV˩ and DV:˩ CV˧ are quite naturally expected to possess upglides over the course of their duration, since the vowel may be sufficiently long to accommodate a rise. The curious fact here is the presence of a rise on the DV˩ DV˩ configuration. All reports acknowledge the existence of a rise here. However, given a short vowel flanked by depressors, we might expect that a pitch rise here would be particularly meager. To begin to understand how this configuration accommodates the pitch rise,

consider the chart in (12), also from Russell [2000], which provides information about mean vowel length in all eight of the segmental contexts she considers.

(12) Mean vowel duration in msec for one speaker



With respect to short vowels, Russell determines that the vowel flanked by depressors (DV˨ DV˩; boxed) (for both her speakers) is significantly longer than the other short vowels (DV˩ CV˥, CV˦ CV˩, CV˦ DV˩). While this longer vowel might be attributed to the automatic lengthening that typically accompanies a vowel which precedes a voiced consonant, this hypothesis does not seem sound given the extra-shortness of the CV˦ DV:˩ configuration. Inspection of these same consonants with intervening long vowels does not support this hypothesis either, as, at least for this speaker, DV:˨ CV˩ is longer than CV:˦ DV˩.

Instead, the extra length in the context of DV˨ D sequences may be seen as a functional accompaniment to the observed reduction in pitch height here: as pitch cannot be displaced in this context due to the presence of a following depressor, the vowel may be longer in order to provide a better opportunity for a pitch increase to be implemented, and consequently conveyed to listeners. Indeed, as Russell writes, "I attribute this extra length in the vowel in cell (c) [DV˨ DV:˩ - D.S.] to the flanking effects of the surrounding depressor consonants...[W]ith no tone spread...to the following syllable, this vowel will be longer than in cases where depression need not be confined to the syllable proper." Interestingly, all syllable types with initial depressors are accompanied by longer vowels than their non-depressor-initial counterparts. Once again, this may be related to the slow pitch rise which is observed in these four contexts.

Russell further notes that long vowels flanked by depressors are longer than other long vowels, but that this is true only for one of her two speakers. Indeed, as Russell notes, "a long vowel need not...lengthen further to accommodate the effects of depression, as its extra length is sufficient...so that no changes need be made in vowel duration."

To sum up, Russell instrumentally confirms that depressors induce significant pitch lowering at their offsets, and that displacement occurs when a following vowel is short and followed by a non-depressor. When the following vowel is short but followed by a depressor, no displacement is observed. However, the vowel here is significantly longer than other short vowels, thus better accommodating the pitch rise.

5. Tone displacement has functional value

I have thus far suggested that tone displacement in Zulu is in part understandable when placed in the context of (paleo-)phonetic aerodynamic and articulatory theories. At this point, speech scientists might protest that physiological limitations alone cannot be directly invoked to explain linguistic sound patterns: speakers exhibit exquisite control of their articulatory apparatus, and might modify their productions to accommodate to any raw, physical, ceiling- or floor-effects. For example, Hombert [1978] reports that pitch perturbations at voiced stop releases are significantly curtailed in tone languages such as Thai and Yoruba, whereas in certain non-tonal language (such as English), recall that these pitch perturbations may extend over 100 ms into the following vowel, well surpassing their perceptual limen, which Hombert determines to be around 40 ms. As Hombert notes, the English pattern cannot be accounted for by proximal phonetic forces alone, since aerodynamic theory does not predict such extensive pitch effects, and anyway, the "voiced" category is typically voiceless here [Lisker & Abramson 1964, Flege 1982]. However, it is reasonable to assume that speech communities arrive at their own consensus regarding the extent to which such phonetically naturally states are exaggerated or curtailed. These conventions may surely be influenced by the language-specific system of contrasts in which these sound patterns find themselves (see especially Manuel [1999] on this point, who shows that language-specific patterns of coarticulation are influenced by language-specific systems of phonological contrast). For example, in the case of tonal languages such as Thai and Yoruba, Hombert notes that if stop-induced pitch perturbations went uncurtailed, the tonal system itself might suffer adverse functional consequences. By hypothesis then, such perturbations are curtailed here for this reason. In non-tonal languages such as English, however, there is no tonal system to encroach upon. Instead, extending these pitch perturbations well

into the following vowel may actually serve to enhance the contrast between prevocalic voiced and voiceless stops with no counter-functional consequences. Note that neither the Thai/Yoruba-type system nor the English-type system can be described as fully "natural" in that neither abides by purely physiological constraints with respect to pitch realization in this context.

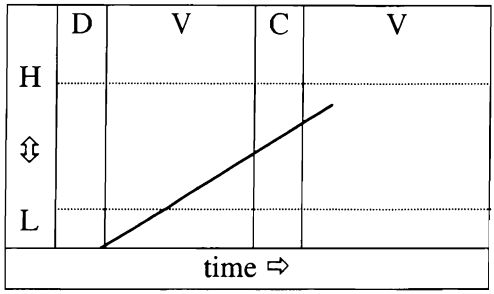
Returning now to tone displacement in Zulu, I argue in this section that functional factors do not in fact curtail the phonetic tendency toward tone displacement. Instead, they actually aid and abet it.

5.1. Non-displacement might neutralize contrasts. As discussed in Section 4, tone displacement is perhaps best regarded as a consequence of differences in the speed of implementation between oral and laryngeal gestures, which came to affect the diachrony of the system in the observed fashion. But merely because the sound substitution may be induced by a natural phonetic process does not entail that this process will strictly abide by exclusively physiological constraints, as the consideration of pitch-lowering effects of voiced obstruents has just demonstrated. Let us then imagine the functional consequences of tone displacement curtailment, that is, a situation in which high tones are not realized on a following vowel in the context of preceding depressors.

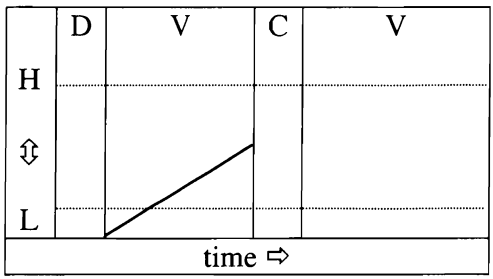
Consider the schematics in (13). In (13a), I repeat the figure from (8d) in which the higher pitch is achieved only as the following consonant is being released. In (13b), I present a hypothetical schematic involving the blocking of tone displacement in this same context.

What would be the functional consequences of blocking here? It is quite conceivable that the pitch rise, which is now limited only to the first vowel, would be insufficient for a reliable achievement of the high tone. Due to the only limited temporal domain in which the pitch rise is implemented, it may be sufficiently curtailed so that it might be misperceived by the listener as belonging to the low tone category. Indeed, recall that in the DVC context, pitch remains low for the duration of the vowel (DV˩ CV˩). This fact strongly suggests that past listeners reached exactly this conclusion: rising tones limited to short vowels which follow depressors may be misperceived as low tones. The functional consequence of such a misperception is loss of contrastive information, or neutralization. Indeed, deletion would result in two separate neutralizations, whereas displacement results only in a single neutralization. This is shown in (14). Here, both the deletion strategy and the displacement strategy are compared, along with unattested forms in which neither deletion nor displacement takes place (in quotation marks). It becomes clear that deletion halves the number of contrastive sequences, while displacement preserves three of four values.

(13) a. H with depressor



b. Hypothetical blocking of H displacement



(14) *unattested:*	*deletion:*	*displacement:*
"DV˥ CV˥"	DV˩˥ CV˥	DV˩˥ CV˥
"DV˥ CV˩"	DV˩˥ CV˩	DV˩˥ CV˧˩
"DV˩ CV˥"	DV˩˥ CV˥	DV˩˥ CV˥
"DV˩ CV˩"	DV˩˥ CV˩	DV˩˥ CV˩

Another possible scenario here involves the elongation of vowels when associated with pitch rises, as in Zulu DVD sequences. So, in DVC contexts, displacement is readily possible, and so the first vowel need not lengthen to accommodate the rise. By contrast, in DVD contexts, lengthening the vowel may serve to salvage the high tone contrast. As noted by Gandour [1977] (mentioned in Maddieson [1978]) this pattern is rather common at the cross-linguistic level.

Note that a functional approach may additionally account for the observed blocking of tone displacement in the context of a following low-high toneme cluster, for if displacement were to take place here, the rising contour would likely neutralize to high (15).

(15) attested non-neutralized forms:

k u ↑ŋgʰ a s i: ...
| ∧ ∧
H LH LH

hypothetical neutralized forms:

k u ↑ŋgʰ a s i: ...
| ∧ |
H LH H

Moreover, recall that Lanham reports that displacement is additionally blocked in the context of depressors preceding monosyllabic roots. Were displacement to take place on to monosyllabic roots, their entire tonological structure would be altered, possibly resulting in homophony. Instead, the blocking of tone displacement here maintains root tonological properties, and the possibility of miscommunication is diminished.

Both of these blocking contexts may be motivated in functional terms, but not in phonetic terms: as morphological and phonological distinctions are more readily retained upon blocking here, the phonetically natural tendency toward displacement may be curtailed. But when displacement would increase the likelihood of all contrasts being unambiguously conveyed to listeners, the phonetically natural tendency toward displacement may be exaggerated.

Finally, this is not to suggest that neutralization should rarely if ever occur. Of course, synchronic neutralizations and diachronic mergers are commonplace. However, the overwhelming tendency is for contrasts to neutralize in contexts with insufficient opportunity for the salient expression of acoustic cues, for example, coda position, where consonants typically lack their all-important release cues. But when the opportunity for cue expression is greater, neutralization is much less common.

5.2. Counterfunctionalism and pattern coherence. Although displacement does not take place from lengthened, phrase-final penults, recall now that neither does it take place from phrase-internal penults, which are not lengthened. In its present form, the phonetic/functional approach is clearly unable to account for the blocking of displacement in this context: as the vowel is short, we expect, counterfactually, that displacement will shift the high tone on to the final.

In fact, it is not uncommon for phonological patterns which can be phonetically and/or functionally motivated in certain contexts to expand, or generalize, into additional contexts where phonetics and function cannot be immediately invoked. The standard example of such developments is the case of utterance-, to phrase-, to word- to syllable-final devoicing. There are well understood phonetic reasons for utterance-final obstruent devoicing: the overall lessening of energy utterance-finally, coupled with the lack of a following sonorant, make it far less likely for these obstruents to be successfully voiced by speakers, and conse-

quently heard by listeners. In contrast, of course, phrase-internal final obstruents are sometimes followed by sonorants, which will not serve to inhibit the likelyhood of voicing. In time, however, due in part to obstruent-final words alternating between utterance-final and utterance-internal position, learners may come to generalize the devoicing pattern to new contexts which bear decreasing phonetic and structural similarity to the original context, in that devoicing is less and less motivated by proximal phonetic forces—to the phrase, to the word, to the syllable. (See Hock [1998] for additional examples of this sort.) Thus, while the behavior of depressed tones in Zulu phrase-final penults may be phonetically and functionally motivated, we can begin to account for the expansion of this pattern into related domains that are not immediately amenable to phonetic explanation: non-dis-placement from phrase-final lengthened penults may have generalized to include all penults. In short, phrasal phonology may encroach upon lexical phonology.

6. Probability matching, and a proposed diachronic scenario

As stated in the previous section, it is well established that speakers exhibit exquisite control of their articulatory apparatus. Some researchers, for example Kingston & Diehl [1994], hypothesize that this prowess on the part of speakers is employed to improve the acoustic/auditory distinctness (and/or increase the articulatory ease) of phonological contrasts; that speakers exploit their phonetic knowledge to achieve functionally efficacious ends. In this section, I consider an alternative to this speaker-based approach to phonetic implementation and sound change, based primarily on the observation that token-to-token variability in speech production is largely recapitulated from generation to generation in a form of probability matching [Labov 1994, pace Gallistel 1990]. For example, if Zulu elders produce 95% of their tokens without displacement, and 5% with displacement, learners are likely to largely recapitulate these percentages in their own speech. Consequently, the inherent variation in speech production may not be as free as it is often thought to be, but may instead be conventionalized to a significant degree: the target of acquisition may be the variability itself. That is, the exquisite articulatory control that speakers display in their productions is best evidenced by the fact that they are able to largely match the variability present in the ambient pattern. The probability matching itself, no doubt, betrays an extremely sophisticated statistical analytic ability on the part of learners. Moreover, their actual productions betray evidence that they are able to implement their calculated probabilities in their own speech. On this view, learners' articulatory talents are harnessed in service to copying, not modifying (improving upon or otherwise) the ambient speech pattern. I suggest that a

listener-based account of the sound pattern offers a rather straightforward alternative to the speaker-based approach of theorists such as Kingston & Diehl.

Labov [1994] shows how probability matching may be affected by sound changes in progress. However, he does not comment on what might have induced such sound changes in the first place. In the case of Zulu at least, I have suggested that the origin of the sound change is phonetic. So, there may have been a point in the history of Zulu in which breathy-voiced consonants naturally induced an "unhinging" of following high tones such that the higher pitch fluctuated around the following consonant, being implemented with lower pitch when ceasing at the closure of the consonant, higher pitch when ceasing beyond its release, something like present-day Xhosa. This Xhosa-like variability may have been "pushed" toward a stabilized, displaced realization in the following manner: learners observe that there are, broadly speaking, two realizations of the high tone in this context, one in which the tone is displaced and higher in pitch, and one in which it is not displaced, and lower in pitch. These learners largely recapitulate the probability of each of the variants that are present in their parents' (and, later, their peers') speech. However, despite this general cross-generational stability in the probability of a particular variant being employed, there is nonetheless a phonetically natural tendency toward the displaced variant, and thus probabilities may yet slowly creep toward this value. This phonetically-induced creep may be aided and abetted by functional considerations: exactly because the displaced tokens result in a more accurate transmission of meaning—that is, there are fewer realizations that are neutralized upon displacement—the system may further creep in the direction of displacement. So, all displaced tokens may be perceived by listeners with the meanings that were intended by speakers. However, at least some of the non-displaced tokens will be miscategorized by listeners, as a consequence of neutralization. Consequently, the percentage of non-neutralized tokens (i.e., all the displaced tokens, but only most of the non-displaced tokens) should increase as these listeners become speakers: as some neutralized, non-displaced tokens are factored out of the total number of tokens for this category, the percentage of displaced tokens increases. The motivation for the creep towards this new convention should not be viewed as due to a teleological force: it is not a consequence of speakers wanting to be clearly understood by listeners. The stabilization is best viewed not as a cause, but rather as a consequence of effective communication. More specifically, I mean that those tokens in which tones were displaced resulted in a less ambiguous speech signal, one in which all contrasts (and all meanings) were recoverable. It is, by hypothesis, a consequence of the reliability of their perception—on the part of the listener—that high tones came to stabilize in the fashion they did, for listeners, having interpreted the

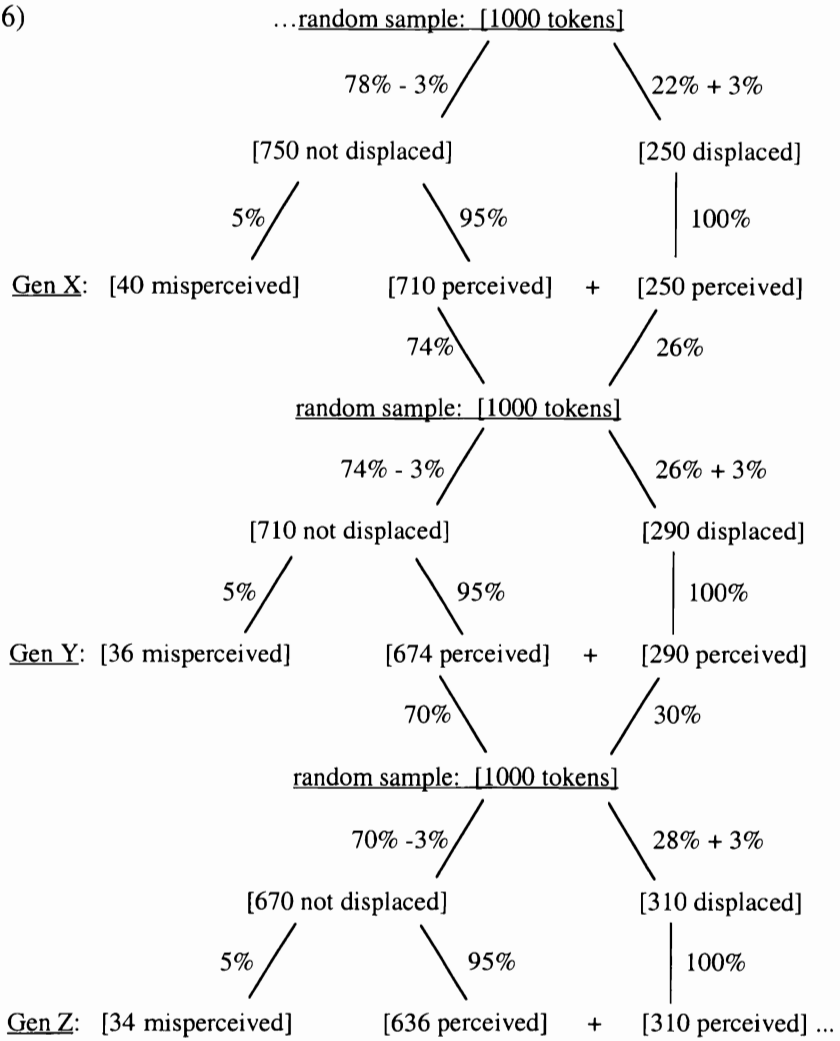
signal unambiguously, were far more likely to employ a similar articulatory routine when using these forms in their own speech.

We can now consider a schematic timetable, simplified to be sure, which captures the main forces argued to be at work in the diachrony of tone displacement. Consider the chart in 15. Entering the sound change midstream, we might take a 1000 token sample from Generation W. Of these tokens, 750 are non-displaced, while 250 are displaced. Most of these tokens are a consequence of learners' matching their probability of occurrence to the productions of Generation V. But given the natural tendency toward displacement, let's say that there is a 3% increase in the number of displaced tokens. In turn, Generation X perceives all displaced tokens unambiguously. Among the non-displaced tokens, however, let us suppose that a full 5% of these 750 tokens are misperceived by X due to the unlikelihood of clearly producing/perceiving the requisite pitch rise on only the first of the two vowels. These 40 misperceived tokens will not be pooled with those over which Gen X-ers calculate their probabilities.

Now we iterate the process: if we take a random sample of 1000 of Generation X's productions, we should observe that they match the probabilities that they perceive their elders to have produced, again allowing for a 3% phonetically-induced shift toward displacement. Generation X perceived 710 out of 960 tokens as non-displaced (40 tokens were misperceived); this constitutes a rate of 74%. Again subtracting 3% from this total, this results in 71%. So, out of 1000 tokens produced by Generation X, 710 will not be displaced, and 290 will be displaced. And again assuming that 5% of the non-displaced tokens will be misperceived by Generation Y, these children will perceive only 70% non-displaced tokens (674 of 964 tokens), and so on down the generations. We may now see, given the small tendency to misperceive non-displaced tokens, coupled with the small phonetic tendency toward an increased number of displaced tokens, how, over the course of time, the conventions of the system may undergo change.

There are, of course, any variety of different weights we might supply that would model different rates and directions of change, or model stability. Proper weighting of the proposed forces at work must of course be determined empirically. For example, in contexts and languages where we observe vowel lengthening (rather than tone displacement) to accommodate the pitch rise, those variants with increased vowel length would provide the germ of the sound change. Also, we have not yet considered the possibility that certain social trends might favor one realization over another, or any number of other conceivable variables, but a sufficiently sophisticated mathematical model would perhaps be able to approximately mirror such scenarios.

(16)



7. Dissimilar languages possess similar patterns

As is clear from the Hyman & Schuh report of 1974, the Zulu pattern of tone displacement is hardly unique: variations on the Zulu theme are found in a wide variety of African tonal languages and are also attested in languages bearing no areal or genetic relation to those discussed by Hyman & Schuh.

In Comaltepec Chinantec, an Otomanguean language of southern Mexico, high tones spread to a following syllable when immediately preceded by a tauto-syllabic low tone [Silverman 1997b]. The pattern is almost always allophonic,

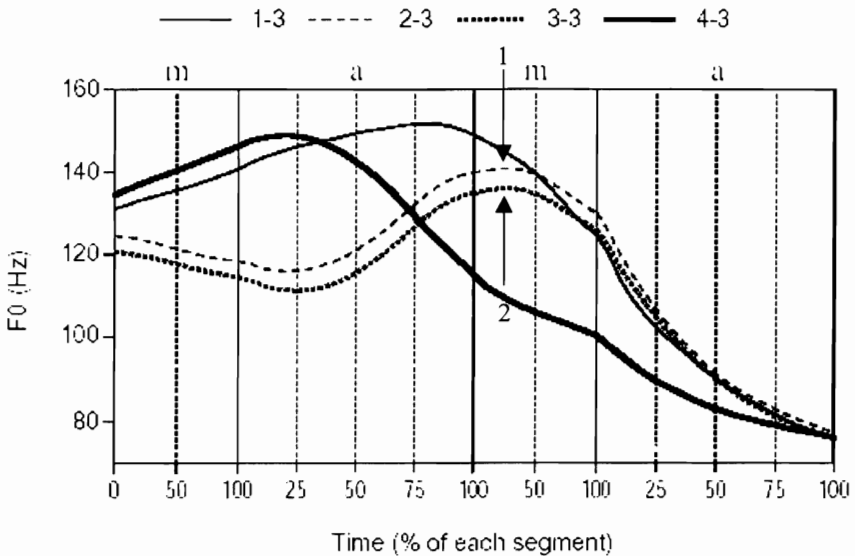
and only rarely neutralizing. For example, see the forms in (17) (from Pace [1990]).

(17) Comaltepec Chinantec tone sandhi

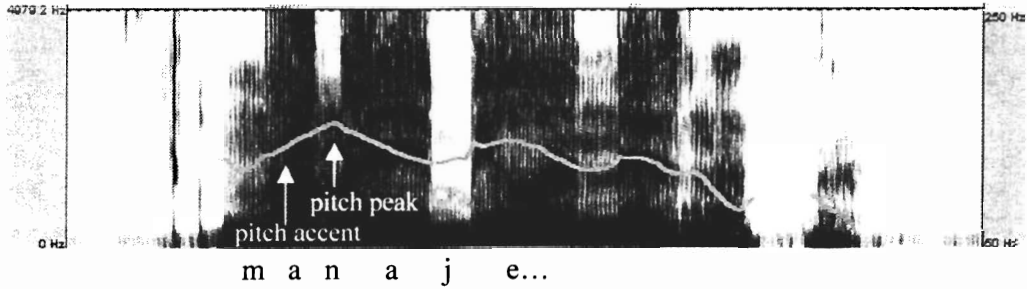
non-sandhi context:		sandhi context:	gloss:
kwaʌ , toː˩		kwaʌ toː˥	'give a banana'
kwaʌ , ŋɨh ˩		kwaʌ ŋɨh˥	'give a chayote'
kwaʌ , kuː˧		kwaʌ kuː˥	'give money'
kwaʌ , ⁿdʒuː˧		kwaʌ ⁿdʒuː˥	'give a jug'

In Beijing Mandarin, tones with high offsets typically peak only after the following consonant has been implemented; tones with low offsets show a significantly lesser effect in these same contexts [Xu 1997, Xu & Wang 2001]. Figure (18), kindly provided by Yi Xu, shows four overlaid pitch tracks, showing various tone combinations during an all-sonorant bisyllabic sequence ([mama]). I call readers' attention to the 2-3 pattern (rising-low; arrow 1) and 3-3 pattern (arrow 2,

(18) Mandarin Chinese [mama]



(19) Zagreb Croatian: *Manaje bila neznatna* ("A fault was insignificant"):

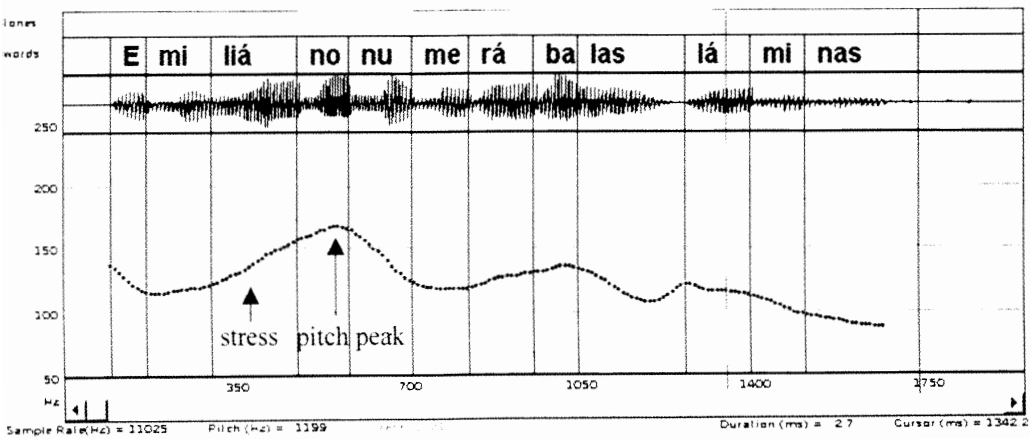


also rising-low, as a consequence of Mandarin tone sandhi). For both of these patterns, observe that the pitch peaks during the following nasal, not on the first vowel itself.

In Zagreb Croatian, high pitch-accented syllables possess a rising pitch contour, pitch peaks being realized on the post-tonic syllable, rather than on the accented syllable itself [Lehiste & Ivić 1986]. In (19) is a spectrogram, kindly provided by Rajka Smiljanić, showing a pitch accented syllable, with the pitch peak on the following nasal.

A similar pattern is observed in Peninsular Spanish: stressed syllables typically possess a pitch rise, with the pitch peak being realized on the post-stressed syllable [Navarro-Tomás 1944, Fant 1984, Prieto, van Santen, & Hirschberg 1995]. The pitch track in (20) was kindly provided by José Ignacio Hualde. The first word-stress here falls on the third syllable ("liá"). Pitch rises here, only to reach its maximum well into the following syllable ("no").

(20) Peninsular Spanish:
Emiliano numeraba las láminas ("Emiliano was numbering the pictures")



8. Concluding remarks

In summary, I have argued that physical properties of the speech mechanism—phonetic factors—may have initially induced the apparent "unhinging" of high tones in the context of preceding depressor consonants in Zulu. But independent functional factors may have induced the conventionalization of tone displacement. As tones were less likely to neutralize upon displacement, displaced tokens were less often ambiguously perceived, hence more likely to be reproduced.

More broadly, I hope to have shown that certain phonological patterns can be adequately accounted for by considering research results from a number of disparate fields of study: the state of any linguistic sound system is a consequence of phonetic, cognitive, and social forces that necessarily interact over time, passively shaped by the communicative function of language.

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CHRONOGENETIC STAGING OF TENSE IN RUHAYA

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The paradigm of tense and aspect contrasts in Ruhaya, an eastern Bantu language, shows considerable regularity, indication of an ordered system of contrasts. The examination of what appear to be anomalies in the system of contrasts leads to a refinement in the analysis: to the recognition of a tense system that is organised in two stages, based on a model proposed by Gustave Guillaume. Aspectual contrasts are prioritized at the first stage, tense contrasts at the second. Compound forms, which are typically combinations of Stage 2 + Stage 1 (in that order), are complex representations that are marked for both tense and aspect.

1. Introduction

This article is the continuation of several strands of research. It examines details of an earlier survey of tense and aspect data in Ruhaya[1] [Nurse & Muzale 1999], the results of which are presented in Table 1. It also brings to the Ruhaya data insights from an analysis of tense and aspect in Swahili [Hewson & Nurse 2001], the results of which are presented in Figure 1 (p. 39). The research on Swahili was in turn an extension of a survey of the tense aspect systems of all the Indo-European language families from prehistory to the present day [Hewson & Bubenik 1997], based on theoretical proposals stemming from Gustave Guillaume [1929, 1945, 1964, 1971-2000]. We include a few brief comments on our earlier paper on Swahili because of its theoretical and typological relevance to the questions we raise concerning Ruhaya.

In this work, verbal systems are seen as stratified systems of representation that are cognitively grounded, in which the more complex representations are secondary developments, built on a base of earlier less complex forms of representation.

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[1] The prefix Ru- on the name of the language has been retained in deference to the usage of native speakers. For them, removing the prefix renders the stem meaningless. We have kept Swahili, however, since this form has now become the universally accepted usage for English.

Table 1: The verbal paradigm of Ruhaya.

Aspect ⇒ / Tense ⇓	Performative *(Simple)*	Habitual **/-aga/**
FAR PAST **/-ka-/**	tú-**ka**-gura *We bought*	tu-**a**-gur-**âga** *We used to buy*
NEAR PAST *(Mid Past)* **/-Ø-/ + /-ire/**	tu-Ø-guz-**îre** *We bought*	
MEMORIAL PRESENT *(Near Past)* **/-á(á)-/**	tu-**áá**-gura *We bought*	
EXPERIENTIAL PRESENT *(Present)* **/-Ø-/**		tu-Ø-gúra *We buy*
NEAR FUTURE **/-raa-/**	tu-**raa**-gúra *We will buy*	
FAR FUTURE **/-ri-/**	tu-**ri**-gúra *We will buy*	tu-**raa**-gur-**âga** *We will buy regularly*

The normal referential scope of the tenses is as follows:

1. Far Past: before yesterday.
2. Near Past: yesterday.
3. Memorial Present: earlier today.
4. Experiential Present: a vast, extended present.
5. Near Future: later today and tomorrow.
6. Far future: after tomorrow. Variations may be caused by the lexical meaning of the verb.

The forms given in this table are segmentally underlying but tonally surface. Various rules assign tones to tense/aspect forms. For instance, the verb /ku-gura/ 'to buy' is underlyingly low, but all the forms given in the table above are marked by a high or falling tone; these tonal patterns would change if a high toned verb like /ku-kóma/ → [kukôma] 'to tie up' is used. The analysis of tone, however, is beyond the scope of this paper; for further details on tone, see Hyman & Byarushengo [1984].

The formative /-ire/ changes the final /r/ of the radical /-gur-/ to [z], hence, [-guz-]. This formative has more aspectual functions in the verbal system than are covered in this paper. For further analysis of the various functions of /-ire/ and how it combines with other formatives such as /-a(a)-/, /-ka-/, and /-ra-/, see Muzale [forthcoming].

Progressive **/ni-/**	Retrospective **/-áá-/ + /-ire/**	Persistive *(Still)* **/-ki-áá-/**
tú-**ka**-bá **ni**-tu-gúra *We were buying*	tú-**ka**-ba tu-**áá**-guz-**ire** *We had bought*	tu-**ka**-bá tu-**kiáá**-gura *We were still buying*
tu-ba-**ire** **ni**-tu-gúra *We were buying*	tu-ba-**ire** tu-**áá**-guz-**ire** *We had already bought*	tu-ba-**ire** tu-**kiáá**-gura *We were still buying*
tu-**aa**-ba **ni**-tu-gúra *We were buying*	tu-**aa**-ba tu-**áá**-guz-**ire** *We had already bought*	tu-**aa**-ba tu-**kiáá**-gura *We were still buying*
ni-tu-Ø-gúra *We are buying*	tu-**áá**-guz-**ire** *We have already bought*	tu-**kiáá**-gura *We are still buying*
tu-**raa**-ba **ni**-tu-gúra *We will be buying*	tu-**raa**-ba tu-**áá**-guz-**ire** *We will have already bought*	tu-**raa**-ba tu-**kiáá**-gura *We will still be buying*
tu-**ri**-ba **ni**-tu-gúra *We will be buying*	tu-**ri**-ba tu-**áá**-guz-**ire** *We will have already bought*	tu-**ri**-ba tu-**kiáá**-gura *We will still be buying*

Near Future /-raa-/ contrasts with (short-vowelled) /-ra-/, which is a second Retrospective (see Nurse [1979: 12-13], Nurse & Muzale [1999: 542], and Muzale [forthcoming: section 4.5.5]).

Far Past is represented by /-a-/ in the Habitual but by /-ka-/ in the other categories. This asymmetry occurs in other Lacustrine languages, especially in the Rutara languages, Ruhaya's nearest relatives [Muzale, forthcoming: Appendices].

Vowel length in the Far Past (Habitual), the Memorial Present, and the Retrospective is a vexing issue. Since Ruhaya lengthens vowels after consonant + glide, underlying contrasts such as /tu + aa.../ and /tu + a.../ are neutralized on the surface as [twaa...]. The markers for these three forms occur exclusively after consonant + glide, so the evidence for the underlying forms is largely tonal (see Muzale [forthcoming].)

This development of a linguistic time-image in successive stages was called chronogenesis by Guillaume. Typically in such systems, aspectual contrasts are developed before tense contrasts, which normally arise at the last stage of chronogenesis. What is particularly interesting for the Swahili and Ruhaya data (and for tenses in other Bantu languages) is that tense, in the Guillaumian model, is developed at two successive stages, giving rise to complex systems that are typologically different from those of Indo-European languages.

The terms develop and stages are usually used in a diachronic sense, whether used of linguistic evolution or language acquisition. In this work, they are used to indicate the parameters of a cognitive system of representation, a permanent mental reality that is part of the acquired mental linguistic capacity of the native speaker.[2] Guillaume, like Jakobson [1968, 1971, 1990: 297ff], sees linguistic systems as being stratified: Jakobson, for example, claims that systemic elements that are learned last in childhood and lost first in aphasia are necessarily based on other primitive, fundamental elements learned early and maintained in partial aphasias. Guillaume, for his part, sees verbal systems as stratified, as involving stages of mental processing, building complex representations out of simpler, more basic representations.

2. The verbal paradigm of Ruhaya

In Table 1, the fundamental representational contrasts of the Ruhaya verb are laid out paradigmatically, using terminology that has mostly been traditional in analysing Bantu languages.[3] The paradigm was prepared by listing what appeared to be tense contrasts vertically, and apparent aspectual contrasts horizontally, basing categories partly on function and partly on morphosyntax. This paradigm is not the result of our analysis, but its point of departure.

Neither the presentation in Table 1 nor the accompanying discussion includes all the paradigmatic forms of Ruhaya. A completed conjugation would include not just the affirmatives presented here but also negatives, relatives, conditionals, other modals, and other (dependent) forms such as consecutive. Our focus is the tense-aspect system of main clauses. The maximum number of tense-aspect contrasts in Ruhaya, as in most Bantu languages, occurs in affirmative forms; that is our reason for not including the other Ruhaya forms, many of which can be found in, for example, Byarushengo et al. [1976], Byarushengo et al. [1977], Dalgish [1977], Muzale [forthcoming], Nurse [1979], Nurse & Muzale [1999], Saloné [1977].

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[2] Although such a staged system is normally acquired in stages, so that acquisition studies show the quasi universal acquisition of aspect before tense in child language (see Fletcher [1985:120] and the references he quotes), we are not immediately concerned with acquisition, but with the system acquired, which has its own representational stages.

[3] The obvious exceptions are Performative and Retrospective, terms borrowed from Hewson & Bubenik [1997], and reviewed in Section 3.2 and fn. 8. A Performative is similar in function to a Perfective, but with a distinctively different distribution. A Retrospective (after the event) is traditionally a Perfect (sometimes Anterior today); the term was deliberately chosen to avoid confusion (e.g., Perfect / Perfective) and to form a balanced pair with Prospective (before the event).

There is occasionally a discrepancy between some forms here and their shape as cited elsewhere. We feel confident that our forms for the dialect used here are correct, as one of the co-authors is both linguist and speaker of this dialect. Readers should consult Muzale [forthcoming] for further details.

Using this basic taxonomic statement as a point of departure, an extended analysis brings into focus certain important questions. As Heine has noted [1993:121]: "A grammar ... that is not confined to description but aims at explaining linguistic structure" has to ask why certain forms are used in certain functions. We intend to examine the following questions.

(1) Why does the unmarked form *tu-Ø-gúra* have its own separate column? (The forms with *-aga* in the same column appear to be relics of an earlier aspectual system in which this suffix marked iteratives: the paradigm of /-aga/ has disappeared except for these two forms. We say they are relics because data from other Lacustrine languages (e.g., Luganda) in general have *-aga* co-occurring with tenses more widely than in Ruhaya. We interpret this to mean that *-aga* has been, and is being, progressively replaced in Ruhaya. We present it as one unanalyzed morpheme, rather than more than one morpheme, because of the existence of alloforms such as *-age* and *-ega* in some subjunctives/futures.[4])

(2) Why does the form *tu-Ø-guz-îre*, that has no segmental tense marker (immediately after the subject marker /tu-/), appear in the first column? Is the suffix *-ire* an aspect marker like the *-aga* of the relics? A form that marks a contrastive tense should be found only in the horizontal parameters of the paradigm (otherwise it would not be contrastive). But the only marker on this form, the /-ire/ suffix, is also found vertically, in the Retrospective column, indicating some kind of a contradiction: an aspectual form having a tense-like function in certain contexts. In terms of its form and its distribution *-ire* is not a tense formative.

(3) If *-ire* is an aspect marker (synthetic aspect: marked within the word), there is obviously a second aspectual system (analytic, marked periphrastically). Is there a connection between the two types?

(4) Why do the two forms (*tugúra* and *tuguzîre*) also appear in the aspect columns, one with a prefixed particle *ni*, the other with a marker *-áá-*, which resembles that of the Memorial Present? What is the difference, for example, between *tuguzîre* and *tuááguzire*?

(5) Why do the aspectual forms *tuááguzire* (Retrospective) and *tukiáágura* (Persistive) both have, in post-subject position, markers (*-áá-*, *-kiáá-*, respectively) which are clearly not tense markers, since these forms can be used with all tenses? If they are aspectual markers, what kind of aspectual markers are they?

The remainder of this article is dedicated to the clarification of these questions.

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[4] It should be noted that the tense markers of these forms are for the Memorial Present (/-á(á)-/) and the Near Future (/-raa-/), respectively, creating a pair of generalized Past and Future iteratives, which correspond more or less with the semantic value that is also found in *tugúra*, as will be explained in Section 5.

3. Principles of analysis

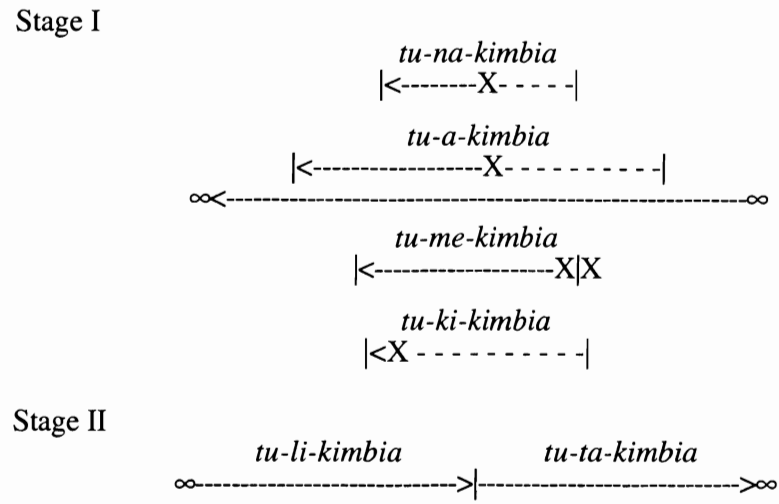
In the analysis of Swahili mentioned in the introduction, the peculiarities of the paradigmatic and distributional data led us to postulate a tense system with two stages, one where aspectual contrasts were developed in forms that had no tense markers but were used nevertheless as forms representing a vast, undifferentiatied present time (i.e., a present with no tense contrasts), and a second stage where tense contrasts were developed. This analysis was based on the fact that the forms of the Vast Present had no mark of tense, but could be marked for aspect, whereas the forms that were marked for tense could not be marked for aspect, aspectual forms for such tenses being created by compounds in which the marked tense was in the auxiliary, and the aspectual form in the main verb, both forms finite, as in Ruhaya aspectual forms (except for the Experiential Present) in Table 1.

The two stage chronogenetic system of Swahili was established as in Figure 1, with the aspectual contrasts of Stage 1 presented vertically, and the tense contrasts of Stage 2 presented horizontally. It should be noted that all the arrows at Stage 1 point to the left (representations of events in Descending Time), whereas the two arrows at Stage 2 point to the right (representations of Events in Ascending Time). A brief discussion of the terms tense, aspect, Ascending Time and Descending Time will clarify the nature of these linguistic contrasts.

3.1 Tense and aspect. Tense and aspect are defined by Guillaume [1933/1964: 47-8] as follows: aspect is the representation of the time contained by the event; tense is the representation of the time that contains the event. An illustrative analogy: aspectual forms concern different views of the ship on the ocean as it passes (from ahead, the bow, amidships, the stern, from behind); tense is the particular ocean on which the ship floats (e.g., Atlantic vs. Pacific). This corresponds in general terms to definitions proposed by others (e.g., Comrie [1976, 1985]; Dahl [1985]). Guillaume's terms were updated and simplified by Valin [1965, 1975], so that today we say that aspect represents Event Time, whereas tense represents Universe Time (capitals indicate mental representations). Cognitively, tense is always in relation to the consciousness of the speaker and hearer: the past originates as time that is in the memory, the future as time that is in the imagi-nation: speakers, for example, may represent an event as being in memorial time (past) or in imaginary time (future), or experiential time, time that is coeval with consciousness (present).

3.2 Descending and Ascending Time (again, capitals for mental representations). This contrast has been discussed by many linguists [Benveniste 1965, Fillmore 1975, Traugott 1978, Lakoff & Johnson 1980] using such terms [Clark 1973:35] as "moving world" (= D(escending) T(ime)) vs. "moving ego" (= A(scending) T(ime)) or "moving time" vs. "moving ego" [Fleischman 1982:324]. Guillaume [e.g., 1937/1964:60] uses the cognitive contrast of (a) time that works in the mind (Descending Time), automatically recording the stream of consciousness, and as the record progresses into the past, burying our sensory experience ever deeper in the memory as it accumulates further memory on top of it, and (b) the mind that works in time (Ascending Time), involved in conative or imaginary activity (such

Figure 1. The two chronogenetic stages of the Swahili verbal system.



1. The verb is *kukimbia* "to run"; all finite forms are given with 1P subject *tu-*.
2. Stage I presents the four aspectual forms of the unlimited present. The /na-/ and /a-/ forms are both Imperfective, i.e., temporally incomplete[5]; *me-* is Retrospective; *ki-* Potential.[6]
3. Stage II presents the two contrastive tenses, past (li-) and future (ta-).

as the writing of a paper), where the activity progresses from the present into the future in complete units, such as sentences or paragraphs. The imagination, that works in Ascending Time, is goal oriented: the planning of a sentence or paragraph requires a goal.

The representations in Descending Time give us the internal view of an event: the view that we get when a strip of film runs in the projector (time moves). Those of Ascending Time give us the external view of an event: the view that we get when the strip of film is held in the hand (time is static, but the film still stores the representation of the event). These two representations correspond cognitively to the operations of the working memory (short-term) and the stored memory (long term). We can "replay" the working memory, and repeat a sentence exactly as it

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5 Standard Swahili and (coastal) dialect Swahili differ with respect to the use of /-na-/ and /-a-/. We outline briefly here usage in Standard Swahili. The situation in Standard Swahili is changing away from /-a-/ towards /-na-/. Some speakers use only /-na-/, some use the two interchangeably, others distinguish them. In the latter case, /-na-/ tends to be used with dynamic verbs, to represent an event taking place at or around the moment of speech/reference, whereas /-a-/ is used more with stative verbs, to represent a longer time period. See Contini-Morava [1987] and Wald [1997].

6 Potential is not to be confused with imaginary. The water stored behind a dam in a hydroelectric system is potential energy: real energy, just waiting to be released. Potentials have a variety of functions: sometimes the representation is similar to a modal, sometimes similar to an imperfective or progressive.

was said with intonation patterns and tone of voice. A week later we may remember that we did this, but the stored memory does not give us a replay. The contrast is similar to that of mass (internal) vs. count (external) in the noun paradigm. There are three common aspects that are representations in Descending Time, as follows, with traditional Indo-European terminology on the left, and our own terminology on the right, based on the usage of Slavic aspectologists, using Imperfective, Perfective to replace imperfect and aorist, and Retrospective to replace the potentially confusing term perfect, which is not to be confused with Perfective (see fn. 14, Section 5).

(6) imperfect |<----------X- - - - -| Imperfective

(7) aorist |<----------X| Perfective

(8) perfect |<----------|X Retrospective

We may illustrate these contrasts from English where (9)-(11) exemplify (6)-(8), respectively.[7]

(9) *We saw the rope* breaking. (Imperfective)

(10) *We saw the rope* broken. (Perfective)

(11) *We found the rope* broken. (Retrospective)

The contrast between Perfective and Retrospective is slight: it amounts to positions on opposite sides of the same threshold, and frequently a single form covers both functions, as in (10) and (11).[8] The /me-/ perfect of Swahili, the perfects of French and German, for example, are freely used in both functions. In English, verbs of perception will require the event of broken to be contemporaneous (and therefore Perfective), whereas found requires broken to be interpreted as representing the resultant state of the event (and therefore Retrospective).

The frequency of occurrence of Imperfective, Perfective, and Retrospective in the world's languages stems from the fact that they are representations of universal cognitive experiences: (9) = ongoing perception, following an event in progress; (10) = recognition of the completion of an event (the baby's "all gone"); and (11) = recognition of a resultant state (the broken rope).

Representations in Ascending Time, by contrast, are oriented toward the future, and because they give an exterior view of the event, there is only one simple

[7] The examples are participles in English. There are of course languages in which these contrasts occur in finite forms: Ancient Greek *égraphon, égrapsa, egegráphe*: 'I was writing, I wrote, I had written' (all past), or Kikuyu *a-a-hanyok-aga, a-a-hanyok-irɛ, a-a-hanyok-etɛ,* 'I was running, I ran, I had run' (all Far Past; data from Johnson [1980]).

[8] Whereas Ancient Greek had different forms for aorist and perfect, Classical Latin (as the historical morphology shows) had collapsed both to a single form, the perfect, which functioned as both present perfect and aorist. Latin *momordi* (<mordeo) 'I have bitten, I bit', for example, shows the reduplication typical of the PIE perfect, whereas *scripsi* (< *scribo*) 'I have written, I wrote', shows the suffixed /-s/ of the PIE sigmatic aorist.

representation: a complete event beginning at a moment X. Traditionally called simple forms in English grammars (by contrast with the progressive forms), we have given the name Performative to this aspectual representation, because it normally represents the complete performance of an event, or the unchanging nature of a habit or state: He shoots, he scores; he walks to work; I know he owns it.

(12) Simple |X---------->| Performative

In systems that are built on Ascending Time, the ordinary tenses will have Performative aspect inherently (unmarked), as does English, and may develop a Progressive aspect as a marked contrast (see above). In systems that are built on Descending Time, the ordinary tenses will have Imperfective aspect inherently, as in Ancient and Modern Greek, and will normally automatically have either a Perfective (aorist) aspect to represent complete events (as does Greek), or a Retrospective (as did Latin). The need for a representation of complete events in Descending Time appears to be greater than the need for a representation of ongoing (i.e., Progressive) events in Ascending Time.

4. The staged development of tense representations

In the Swahili verbal system (Figure 1), Stage I is the first level of representations, where all forms represent a single tense, the unlimited present of Universe Time in which there are no tense contrasts. The forms at this level are marked only for aspect: although unmarked for tense all have subjects and may be used as clausal verbs, indicating that they are representations of Universe Time. At Stage II in Swahili this vast present is divided into the contrastive time spheres of Memorial Time (past) and Non-memorial Time (future). The two levels represent two developmental stages: (i) the variations of Event Time (aspectual contrasts) with the first representation of Universe Time at Stage 1; (ii) the variations of Universe Time (tense contrasts) at Stage II.

This analysis establishes certain basic principles of analysis which are relevant to the analysis of other Bantu languages. These principles are as follows.

(13) – the representation of tense is typically developed in two successive stages, a first stage where there are no tense contrasts,[9] just a single unlimited present, and a second stage where there may be multiple tense contrasts.[10]

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9 The important word is contrasts, that is, tenses that do not overlap, but stand in complementary distribution to each other, as do the four forms in the first column of Table 1 that have a tense marker in pre-stem position. This would of course exclude *tuguzîre*, which, as the Retrospective column shows, is clearly not contrastive. Where Bantu languages are reported as having many tense contrasts, it is advisable to do a careful survey of the morphological and paradigmatic evidence to make sure that aspectual forms have not been reported as tenses.

10 One author has a database containing tense-aspect analyses of 120 Bantu languages. Only two exceptions (W. Gogo and one Grassfields variety) are reported to have more than four, i.e., five past contrasts.

(14) – the single indicative forms that are unmarked for tense represent the undifferentiated Universe Time of the unlimited present of Stage I, extending from an infinity in the past to an infinity in the future; the single indicative forms that are distinctively marked for tense are the basic forms of the contrastive tense system of Stage II.

(15) – a single verbal form cannot have more than one tense because it cannot be contained in more than one kind of Universe Time (a ship cannot float on two oceans at once). Consequently, in compounds where two tense-aspect forms occur together in a single verbal representation, the two forms are never both from Stage II.[11] They can both be from Stage I, however (where there are no tense contrasts, only aspects), and there can be combinations of Stage II (in first position) and Stage I (in second position), always in that order.[12]

In these latter combinations, the first form represents the contrastive tense and the second form must be a representation which can overlap, and not contrast, with the tense of the first. The second form, therefore, must necessarily represent the limitless present of Stage I, of which the contrastive tenses of Stage II are, in a sense, hyponyms. Consequently, the representations of Stage I may be used in second position with all the contrastive representations of Stage II because they are consonant with, and not contrastive with, all the forms of Stage II.

It can be seen that these principles apply also to the paradigm of Ruhaya in Table 1. Application of these principles sets in motion a chain of conclusions that resolve, one by one, the questions raised in §2 above.

5. The Separation of Tense Levels in Ruhaya

The first step in applying the principles laid out in (13)-(15) is to separate the forms *tugúra*, *tuguzîre* from the remaining four tense forms in the first column of Table 1, leaving four forms explicitly marked for tense: *tú-ka-gura*, *tu-áá-gura*, *tu-raa-*

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[11] If two different contrastive tenses occur together, they necessarily represent two different clauses, as in English *He said he will come*. Although the claim that two purely tense (Stage II) forms cannot co-occur seems simple, it is nevertheless controversial, and our position requires some explanation. We would analyse compounds such as:

Ruhaya	*tu-raa-ba twáá-guz-ire*	'we will have bought'
Ruhaya	*tu-raa-ba twáá-guz-e*	'we will have bought'

as both containing an auxiliary verb, marked for (future) tense, followed by the main verb. We see the main verb as being marked only for (retrospective) aspect, by the combination of pre-stem /-aa-/ and suffixed /-ire, -e/. Botne (p.c.) analyzes a comparable form in Kinyarwanda differently, interpreting /-aa-/ in the second verb as a tense marker. Hence, his analysis would allow such compounds to have two tense markers. For more on his position, see Botne [1983, 1986, 1989].

[12] The ordering is probably a cognitive universal: a hypernym may be used anaphorically of a hyponym, but not vice versa. A hypernym, of course, covers the whole meaning of a hyponym, whereas the inverse is not true: *He wounded the bear and the animal became enraged* vs. **He wounded the animal and the bear became enraged.* A Vast Present (the hypernym) includes both Past and Future, whereas Future and Past, as tenses (the hyponyms), stand in complementary distribution, in contrast to each other.

gúra, *tu-ri-gúra*. These will now be analysed as the four tenses of Stage 2 of the chronogenesis of Ruhaya, and *tugúra*, *tuguzîre* as aspectual forms from Stage 1 (see Figure 2 below), since they carry no contrastive mark of tense (see (14) above).

The relationship of *tugúra* and *nitugúra* (see (4) above) now becomes clear: *ni* is a focussing or actualizing particle which changes *tugúra* 'we buy habitually' to *nitugúra* 'we are buying right now' (Progressive), or 'we have decided to buy, we intend to buy', as in *nitugurá emótoka* [nitugulé:mótoka] 'we are buying a car (but haven't got it yet)'. This focussing or actualizing particle *ni* is used extensively in Bantu languages; its cognate *ne* is used in Kikuyu, for example, to mark assertions as opposed to presuppositions [Johnson 1980:272]; its cognate *ni* in Swahili is used as a copula.

The relationship between these two forms also casts light on *tugúra*, which must necessarily be Imperfective, that is, a representation in Descending Time, in order for its focussed form *nitugúra* to be the representation of an event in progress, a sense which it has throughout the paradigm.[13] An Imperfective at Stage 1, representing the vast present of Universe Time, would typically have the unfocussed meaning 'we are involved in buying without limitation of time', that is, in ordinary English 'we buy (habitually)'.

It is a quasi-universal that where the basic form in a paradigm is Imperfective, there will also be a corresponding and contrastive form to represent an event that is complete. This normally takes the form of a Perfective (as in Greek or Slavic), but it may also be a Retrospective[14] (as in Classical Latin) or a Performative (as in modern Romance languages), all of which have been explicitly analysed elsewhere [Hewson & Bubenik 1997]. This is a principle which immediately makes sense of the form *tuguzîre*: here is the Perfective or Retrospective which corresponds to the Imperfective *tugúra*: what is already complete in the present must have taken place in the past, typically in the time just before the present.[15] Like *tugúra*, it has no tense marking, and it carries the same Perfective marker *-ire* as the Kikuyu Perfective form *a-a-hanyok-irɛ*, quoted in footnote 7 above. There is also other evidence to indicate that *tuguzîre* is, in fact, not a Perfective, but a Retrospective.

5.1 The status of the /-ire/ suffix. The evidence for analysing the /-ire/ forms of Ruhaya as Retrospective rather than Perfective is threefold.

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[13] All that *ni* changes is the focus; the inherent aspect of the form remains unchanged. The result is an imperfective which is focussed on a given moment: either the here and now, or a moment elsewhere in time defined by the auxiliary.

[14] As noted above (3.2), we avoid the term perfect, the usual terminology, in order to eliminate the confusion between perfect and perfective, which are quite different entities. The Perfective simply represents the completion of the event; the Retrospective looks back from the result phase to the complete event.

[15] The sense of the Sanskrit aorist (i.e., perfective) was described by Pãnini as *adyatana* 'recent past' [Bubenik 1997:63], representing an event just completed, much like the 'all-gone' of early child language in English. In Ruhaya, the Memorial Present represents the time that has elapsed since the last sleep, and *tuguzîre* represents an event completed just before that, i.e., (typically) yesterday.

(i) Bantu languages share a common trait of using Retrospective forms of stative verbs to represent the present state. Standard Swahili uses the forms in (16) with the Retrospective marker /-me-/ for ordinary present reference. In these forms with 3S subject marker *a-*, the resultant state that is represented by the Retrospective aspect becomes the focus of the representation.

(16)	*amelala*	'3S is asleep (has fallen asleep)'
	amesimama	'3S is standing (has stood up)'
	ameoa	'3S is married (has married)'
	amekufa	'3S is dead (has died)'
	ameamka	'3S is awake (has woken)'
	amekaa	'3S is sitting (has sat down)'

This typical Bantu usage of the Retrospective is found with the Ruhaya suffix /-ire/, as the items in (17) show.

(17)	*a-nagí-íre*	'3S is asleep'
	a-fí-íre	'3S is dead'

In short, with these verbs of resultant state the form in /-ire/ is not functionally a Near Past (as in Table 1), but a Present, representing the resultant state of an earlier event. This is often a typical Retrospective usage, as may be seen in languages such as French or Latin, where a Retrospective can have both values, with different translations into English.

(18)	FRENCH	LATIN	ENGLISH
	il est mort	*mortuus est*	'he died' (preterit)
	il est mort	*mortuus est*	'he is dead' (present reference)
	il est parti	*profectus est*	'he left' (preterit)
	il est parti	*profectus est*	'he's gone' (present reference)

From these examples it can be seen that, in French and Latin, Retrospective forms of verbs of resultant state may be used to represent either a complete past event or a resultant state of affairs in the present, a usage which parallels the Bantu usage of stative verbs.

(ii) The form *tuguzîre*, without any internal modification tends to represent the past event, what we may call the aorist or Perfective usage of the Retrospective (cf. the preterits in (18) above). The form with internal modification, *tu-áá-guzire*, on the other hand, is designed to represent the resultant state (present reference in (18) above). In other words, the apparent purpose of the /-áá-/ morpheme is to call attention to the resultant state rather than to the completion of the event; as such, this /-áá-/ is a secondary or focussing morpheme, the main aspectual marker being

the suffix /-ire/. Consequently, the extended form *tuáágu**zire* is normally used as the second verb in a compound, since this form emphasizes the Retrospective aspect. The form *tuguzîre* can, however, be found as the second form in a compound, for example, with an auxiliary in the Far Past: *túkabá tuguziré emótoka* 'we had bought a car (which we no longer have)', the auxiliary /ka-/ being the marker for the Far Past. It is understood in these forms that the resultant state holds only for the duration of the tense of the auxiliary, hence, the understanding that the car was possessed only in the Far Past and is no longer in the possession of the buyers. The form *tuguzîre* in this position does not prolong the representation of the resultant state as does the extended form *tuáágu**zire*.

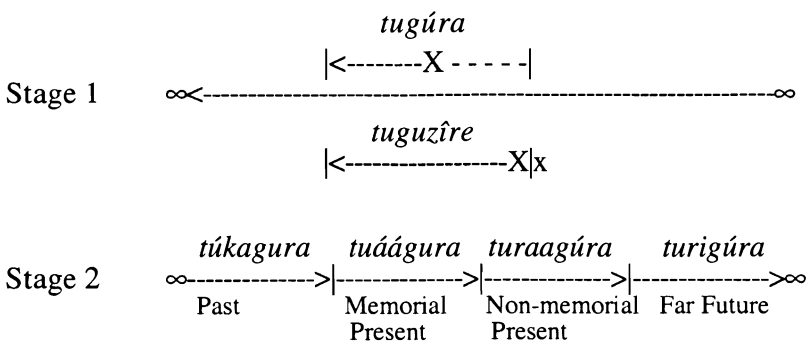
(iii) If the simple form *tuguzîre* is used to represent the resultant state (unusual with transitive verbs, but possible) rather than the past event that creates the state, it no longer represents the Near Past but a present state which is best translated by an English passive: 'we are bought, we have been bought'. Passive voice and Retrospective aspect universally share many features, since the patient (the subject of the passive voice) may also be part of the result or goal of a transitive verb. The result of a verb such as bake is a cake or some other product of the oven, not a cook or a baker. There are, in fact, forms in English, such as *I am finished* that are ambiguous between an active Retrospective and a Passive reading. There are also similar shifts in the use of the past participle, as in (19).

(19) a. *The thief had climbed up, broken the window, and ransacked the house.*
b. *the broken window*; **the broken thief*

In (19a), *broken* is active in sense, predicated of the subject (*thief*) through the medium of the auxiliary *had*. If predicated directly of the noun, as in (19b), the same participle cannot be active, but can have only a passive sense.

We may consequently represent the relationship of the two Ruhaya forms that are unmarked for tense as Stage 1 forms, a subsystem separate from the marked tenses of Stage 2, as in Figure 2. In this subsystem, the prototypical base form (unmarked) is an Imperfective (placed above the line of time to indicate a proto-type),

Figure 2. The two chronogenetic stages of the Ruhaya verbal system.



whereas the contrastive marked form is a Retrospective, a complete event seen from its result phase. If the result phase is ignored, the form simply represents a complete event, a variant that may be used as a preterit, in similar fashion to the Latin perfect, the French passé composé, and the German Perfekt.

5.2 The four contrastive tenses. The forms at Stage 1 are shown in Descending Time, whereas those of Stage 2 have been represented as being in Ascending Time, because, as single forms, they represent complete events, and in order to form the representation of an incomplete event, they must be combined with the Stage 1 form *nitugúra*: *túkabá nitugura* 'we were buying', for example, where *túkabá* is the auxiliary in the Far Past tense. The four tenses of Stage 2 have also been interpreted as Past, Memorial Present or Omega Present, Near Future or Alpha Present, and Far Future.

The terms alpha and omega are used by Guillaume to represent the last moments of the past (omega) and the first moments of the future (alpha). These moments are of importance in any representation of the present, and are important for the cognitive operations of consciousness, which may in turn become the basis for linguistic representations.

Just as spatial representation is based upon bodily experience [Johnson 1987] so that English *up* and *down* are based on our experience of gravity, temporal representation is based on fundamental and universal mental experiences shared by the whole animal kingdom: memory, perception, and imagination. Memory here means the retentive memory, the experience of the automatic reflex recording of the stream of consciousness, on which the notion of past is based (the past is that time which is coeval with memory). Perception means the ongoing reception of information supplied by the senses, which allows us to experience what we call the present. Imagination is an extrapolation from perception and memory that allows us to anticipate what is going to happen; it is the basis of our notion of future. Without imagination there would be no future.

Guillaume [e.g., 1964:59] used the phrase omega chronotype as a term for the most recent quantum of the past, and alpha chronotype for the most immediate quantum of the future. We may state the distinction in cognitive terms as follows:

α = the first moments of the immediate future, product of the operative imagination

ω = the last moments of the immediate past, stored in the retentive memory

These cognitive experiences are represented in different ways in different languages. Sometimes both α and ω moments are represented as elements of a present that separates past from future, as in Latin, French, Italian, Spanish, or Portuguese. Sometimes they are divided between past and non-past as in English,

Danish, and Norwegian;[16] sometimes both are included in the non-past, as in German or Dutch [Hewson 1997:336-337].

In most of the Bantu languages that we have looked at (but not Swahili), the ω moments are represented by a distinct tense, which in cognitive terms may be called the memorial present (traditionally Near Past), and the α moments are represented by a distinct and separate tense (traditionally Near Future) that in cognitive terms may be called the non-memorial present. This Bantu division of the representation of present experience into two separate tenses, the Near Past and the Near Future, appears to be typologically distinctive.

The only remaining comment that needs to be made concerns the distribution of *tugúra* and *tuguzîre*. As elemental forms of the paradigm, they may be used alone, but they are rarely found in second position in compounds. Adjusted forms (*ni-tugúra, tu-áá-guzire*) are the ones that are normally found in second position, with a slightly adjusted meaning that stems from the markers /ni-/ and /-áá-/.

All the variant forms of Stage 1, whether morphologically adjusted or not, are distributionally distinct from the four tenses of Stage 2, which can never be used, even with morphological adjustments, in second position.

6. Aspects Functioning as Tenses

The analysis in §5, while it makes sense of the contrastive paradigmatic forms, does not immediately clarify the functional role of *tuguzîre* as a Mid Past tense. Our claim that *tuguzîre* is a present Retrospective might appear, consequently, to be counter-intuitive. But a Retrospective aspect in the representation of the vast present of Stage 1 necessarily represents something that is complete; aspectual forms of the present can represent the past and the future just as successfully as tense forms: *I have spoken, j'ai parlé, ich habe gesprochen* are all marked for present, marked on the auxiliary, and the French and German forms can be used functionally as preterits.

Using aspectual forms in the function of tense is, in fact, as common as using a table knife as a screwdriver. Aorist, imperfect, and perfect were, in fact, classified, respectively, as "recent past, distant past, out of sight" in Vedic Sanskrit, by Pãnini, the great Sanskrit grammarian [Bubenik 1997:63]. In similar fashion, aspectual forms are frequently mingled with tense forms in Bantu traditional ways of representing time. As noted above, in Vedic Sanskrit the aorist (i.e., Perfective) was considered *adyatana* "in sight", hence "recent past". In Ruhaya, the /-ire/ form is similarly used, functionally, as a Near or Mid Past which is just beyond the Memorial Present, and distinct from the real past, which is totally divorced from the present, and then becomes, in usage, the Far Past (see Table 1).

The Memorial Present of Ruhaya (*tuáágura*) is a representation of the time that is coeval with the retentive memory (the memory of the stream of consciousness that is in the process of being recorded), or the working memory of consciousness.

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16 Which explains the so-called "present reference" of the perfect in English and the Scandinavian languages [Hewson & Bubenik 1997: 335-337]. (Adverbs of past time may not be used with such perfects: **I have read that book yesterday*).

The retentive memory, or working memory, is a part of present experience: it is the memory that allows us to write or speak a sentence, or continue an explanation or a paragraph, without getting confused or losing our way. The conventions of the Ruhaya tense system are that this memory of the immediate past extends all the way back to the last sleep of the community, i.e., to the point where consciousness is interrupted by sleep. The referential scope of the Memorial Present is therefore "earlier today". The consciousness that immediately precedes "earlier today" is that of yesterday, which is the referential scope of the Near or Mid Past, which includes events that were completed before the Memorial Present and, consequently, viewed retrospectively from the Memorial Present.

An event seen retrospectively in the vast present of Stage 1 would necessarily be represented as a past event at Stage 2, to be surveyed retrospectively from the present. *I have read that book* means 'I have a present memory of a past event'. Such a past event necessarily took place before the present memory of it; its occurrence necessarily precedes the Memorial Present. In the Ruhaya system, therefore, a present Retrospective represents an event that necessarily precedes the Memorial present in which it is remembered (the "present memory of the past event"); this is exactly the normal sense attributed to *tuguzîre*, an event that took place in time before the Memorial Present.

7. The Fourfold System of Aspects at Stage 1 in Ruhaya

Just as there are four tense contrasts at Stage 2 in Ruhaya, two presents (memorial and non-memorial) and two non-presents (Past and Future), there are also four aspectual contrasts at Stage 1, with two simple forms (*tugúra*, *tuguzîre*), and two extended forms (*tukiáágura*, *tuááguzire*) that are based on the simple forms, as shown in two different formats in (20).

(20) a.

Imperfective	Retrospective1	Persistive	Retrospective2
tugúra	*tuguzîre*	*tukiáágura*	*tuááguzire*

b.

	Unfocussed	Focussed
Imperfective	*tugúra*	*tukiáágura*
Retrospective	*tuguzîre*	*tuááguzire*

This neat four-square paradigm (in which the Persistive could also be described as Imperfective 2), contains the answers to the remaining problematic questions expressed in (5) above.

First, it is clear from the distribution that the markers *-kiáá-* and *-áá-* cannot encode tense, although they occur in post subject position, since both of these forms are used freely as second elements in a compound, which would be impossible for forms that are marked contrastively for tense. One cannot have contrastive tenses in a compound: if both forms are tensed, they must either be of the same tense, or (as in most Bantu compounds) combinations of aspect and tense, that overlap and do not contrast (see Section 4 above, esp. fn. 11). The fact that the

Persistive and Retrospective are augmented forms of the Imperfective and Perfective also leads us to the following proportion.

(21) *tugúra* : *tuguzîre* :: *tukiáágura* : *tuááguzire*

Here we have, in short, two forms of the Imperfective and two forms of the Retrospective. The Persistive looks back to an earlier stage of the Imperfect and affirms that what was ongoing then is still ongoing. Retrospective 2 similarly looks back to Retrospective 1 and affirms that the event that occurred there still has consequences; as we shall see in what follows, it is quite feasible that the morph /-áá-/ is the same element in both extended forms.

As we have seen, the ambivalence of the Retrospective (as in (18) above) is a quasi universal that Ruhaya chooses to exploit by explicit marking. In Latin, the distinction is not marked in the morphology, but shows up in the syntactic distribution, in what was called the Sequence of Tenses by the classical grammarians: when the Latin perfect is used in present reference, dependent clauses have primary tenses (e.g., present and future); where it is used in the function of preterit, dependent clauses have secondary marking (e.g., past tense forms). The ambivalence has led some scholars to treat the Latin perfect as two separate elements; this procedure is methodologically unacceptable, since no matter how irregular the paradigms, no Latin verb has two distinct morphological forms for the two different functions.

In this universal ambivalence of the Retrospective, we find the answer to our final query: why is it that there are two forms of the Retrospective (*tuguzîre*, *tuááguzire*)? This question is raised in (4), and the answer anticipated in a comment in 3.2, reworded and made explicit here as (22).

(22) Perfective and Retrospective representations are very similar, being separated merely by a threshold, hence their tendency to fall together historically, or for one form to be used in both functions.

The function of the marker *-áá-* in *tuááguzire*, consequently, is that of an adverbial focus marker that automatically and mechanically shifts the emphasis of the Retrospective from the event to its result phase, to its present reference. An adverb such as *already* has similar effects in English: *I already did that = I have done that.* Consequently, we have two contrasting aspectual forms, one, the bare form *tuguzîre* that is typically used to represent an event viewed retrospectively from the present, and the other, the extended form *tuááguzire* that is typically used to represent the result phase of the retrospective view. The most striking piece of evidence in support of this analysis is the Mid Past Retrospective from Table 1 that combines both forms: *tubaire tuááguzire*. Here the bare form of the auxiliary is used to establish a position in the recent past, and the extended form of the main verb to establish a Retrospective aspect. Even more striking is the existence of compounds of identical grammatical forms with stative verbs: *tubaire tu-nagi-ire* 'we were sleeping', where the auxiliary establishes the time of the event, and the main verb, as a bare form, marks the resultant state.

This analysis of the Retrospective is supported by the other equation from the proportion in (21): the Imperfective and the Persistive are related in similar fashion. The Imperfective is simply the representation of an incomplete or ongoing event; the Persistive is a representation of an event that is still incomplete or ongoing. The English adverbs *already* and *still* share common features: *already* looks back to a point in the past; *still* represents a continuation from a point in the past.

It is quite probable, in fact, that the *-áá-* of *-kiáá-*, since it can, in fact, be left out in negative forms (e.g., *ti-tu-ki(áá)-gura* 'we are not still buying'), is the same element as the *-áá-* of *tuááguzire*. Both are, in a sense, retrospective: one looks back to an incomplete event (Persistive), and one looks back to a complete event (Retrospective). In the negative, it is redundant, of course, to represent the continuity of an event that did not, in fact, continue, especially if the negation is emphatic: 'I never did that again, I'm not doing that any more, I'll never do that again'.

8. Conclusion

We may represent the four aspects and the four tenses of Ruhaya in diagram form as in Figure 3, which is an expansion of Figure 2 above, based on the arguments in §7.

The basic structure of the four tense system of Stage 2 is binary. The first binary contrast is between the present and the non-present. In the present there is a binary contrast between the future and the past that parallels the immediate cognitive experiences of retentive memory and immediate imagination. In the non-present, by extrapolation, there is also a future and a past, traditionally described as the Far Future and the Far Past.

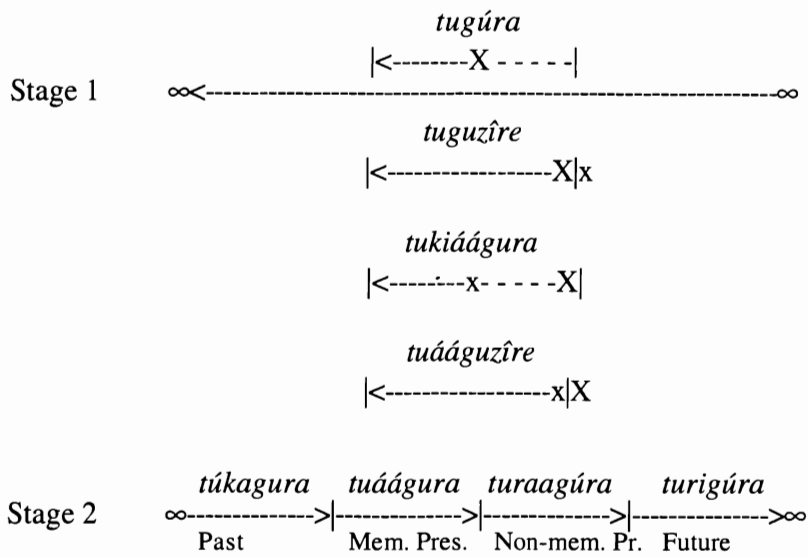
8.1 Principles and Practices. The principles, constraints, and procedures that have been practised in this analysis are as follows.

(23) Equal weight is given to grammatical meanings and to the morphological shapes that mark those meanings. The data of both morphology and semantics is deliberately respected. If a morpheme means one thing in one part of the paradigm, it is accepted that it means the same thing elsewhere, unless the contrary can be proven.

(24) The search from the beginning is a search for an underlying system, for a balanced set of contrasts that can be displayed in diagrams such as Figure 3. Such systems are not abstractions: they are mental constructs that are permanently stored in the subconscious of native speakers, accessible to use, but not to direct observation. Grammatical systems, in short, have distinctive patternings, just as do phonological systems, such as the triangular and quadrilateral patterns of vowel systems.

(25) Each grammatical system is a content system of meaningful contrasts that is marked by the regular morphological and distributional contrasts of the paradigm.

Figure 3. The two chronogenetic stages of the Ruhaya verbal system (expanded)



(i) Left pointing arrows represent Descending Time; right pointing arrows represent Ascending Time.
(ii) Aspectual contrasts are represented vertically, because they are con-trasts of Event Time. The prototypical form is given above the line of time, and the derived forms listed below in order of morphological complexity.
(iii) Tense contrasts are listed horizontally because they are contrasts of Universe Time.
(iv) X marks the position of the subject involved in the event; x marks a relative position of the same subject that may be the focus of a related form.
(v) Forms given are phonemic (except for tone marking): high vowels become glides when followed by a non-high vowel.

The role of the morphosyntax is to mark the content system which, by itself, is purely mental and not directly observable. It is indirectly observable (a) through the corresponding contrasts marked in the morphosyntax, and (b) through the distribution of the derived surface meanings in discourse.

(26) Although grammatical systems are primarily content systems, they cannot be separated from their morphological markers or from the data of their syntactic distribution. This is the correlation of (23) and (24).

(27) Grammatical systems are mental constructs, mental mechanisms for representing bodily and mental experience. Such mechanisms may be staged, i.e., they may have different interactive levels, with each level leading to a more complex representation. The universality of such staging is immediately observable in the

vast data of derivation, as in the two stages of derivation that allow us to derive wonderfully from wonder or rethinking from think.

8.2 Questions of historical trajectory. Given the quasi-universality of certain kinds of aspectual distinctions, such as Imperfective, Perfective, and Retrospective (see 3.2 above), it often happens that if one of these is reinterpreted, levelled, or otherwise lost, a new form will be created to take its place. Elsewhere in Bantu languages, for example, the suffix *-*aga* is a common marker for the Imperfective or Iterative, and *-*ile* a common marker for Perfective or Retrospective. Of these, Ruhaya has kept only *-*ile*, in the reflex *-ire*, the Imperfective being unmarked, and distinguished distributionally from the unmarked Performatives of Stage 2 by restricting the representation of Descending Time (of which the Imperfective is normally the unmarked member) to Stage 1, and the representation of Ascending Time (of which the unmarked member is the Performative), to Stage 2. The only fully functional aspectual suffix in Ruhaya is, therefore, *-ire*, since the reflex of *-*aga* is not used in the present and seems to have been distributionally restricted to the two forms in which it still occurs (see Table 1).

There is much interesting historical work to be done in tracing the loss or reinterpretation of the aspectual suffixes (i.e., synthetic aspect) of Bantu languages, and the development of compensating compound forms (i.e., analytic aspect) to represent aspectual distinctions.

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From the edge:

A sketch of Ongota, a dying language of Southwest Ethiopia

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A SKETCH OF ONGOTA
A DYING LANGUAGE OF SOUTHWEST ETHIOPIA*

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The article provides a grammatical sketch of Ongota, a language on the brink of extinction (actively used by eight out of an ethnic group of nearly one hundred) spoken in the South Omo Zone of Southwestern Ethiopia. The language has now been largely superseded by Ts'amakko, a neighboring East Cushitic language, and code-switching in Ts'amakko occurs extensively in the data. A peculiar characteristic of Ongota is that tense distinctions on the verb are marked only tonally. Ongota's genetic affiliation is uncertain, but most probably Afroasiatic, either Cushitic or Omotic; on the other hand, it must be noted that certain features of the language (such as the almost complete absence of nominal morphology and of inflectional verbal morphology) point to an origin from a creolized pidgin.

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CONTENTS

1. Introduction[1]

The extreme southwestern corner of Ethiopia is well-known as an ethnic and linguistic mosaic. What was formerly the western part of Gemu-Gofa and is now the Southern Omo Zone (Amharic: *yä-däbub omo zon*) of the "Southern Peoples, Nations and Nationalities Region" comprises peoples speaking Cushitic and Omotic languages of the Afroasiatic family, as well as Nilotic and Surmic languages of the Eastern Sudanic branch of Nilo-Saharan. But there is at least another enigmatic people, mostly known in the area as Birale, but whose ethnic selfname is rather Ongota (*ʕongota* [ʕoŋgóta]). One would search in vain for either the Birale or the Ongota in the Ethiopian census (Federal Democratic Republic of Ethiopia 1998). The state of our knowledge about this people and their language (*iifa ʕongota* 'language ["mouth"] of the Ongota') is well summarized in *Ethnologue*'s entry, quoted here below:

> Birale (Ongota, Birelle, Ifa'Ongota, "Shanqilla") [BXE] 20 speakers out of an ethnic group of 70 (SIL 1990). One village on the west bank of the Weyt'o River, southeast Omo Region. Afroasiatic, Unclassified. All the speakers are old. The others conduct their affairs in Tsamai. 18% lexical similarity with Tsamai, but from borrowing. Typology: SOV; postpositions; genitives follow noun heads; suffixes indicate noun case; verb affixes mark subject person, number, and gender; passive; causative. Agriculturalists, hunters. Nearly extinct. [Grimes 1996: 260]

The entry itself represents a decisive improvement over previous reports, such as, for example, *Ethnologue*'s 11th edition, where the language was said to be spoken '[O]n Lake Weyto, north of the Cushitic-speaking Tsamay' [Grimes 1991: 218]. At least at the present time, no such thing as a (permanent) "Lake Weyto" exists, and Ongota is spoken to the east of Ts'amakko,[2] rather than to the north. The improvement is mostly the result of a single article, published in 1992/93 in

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[1] The following abbreviations are used:

Amh	Amharic	NPST	Non-Past
CAUS	Causative verbal extension	O	Ongota
F	Feminine	PST	Past
IMPV	Imperative	P	Plural
INF	Infinitive	PROG	Progressive
INT	Interrogative	S	Singular
INTR	Intransitive verbal extension	SING	Singulative
ISP	Impersonl Subject Pronoun	Ts	Ts'amakko
M	Masculine		
MID	Middle verbal extension	-	Morpheme boundary
NEG	Negative	=	Clitic boundary

[2] The denomination of Tsamay or Ts'amay, although common in the area (and in the literature) is unknown in the language itself. The ethnic selfname is rather Ts'amakko (corresponding to S'aamakko of Hayward [1989]).

the short-lived *Journal of Afroasiatic Languages*. The article, entitled 'Ongota or Birale: A moribund language of Gemu-Gofa (Ethiopia)', was co-authored by Harold C. Fleming, Aklilu Yilma, Ayyalew Mitiku, Richard Hayward, Yukio Miyawaki, Pavel Mikeš, and J. Michael Seelig [Fleming et al. 1992/93] and presented the first real data on the Ongota language. Actually, as well-argued in the article itself, there are reasons to believe that the Ongota were first mentioned by the American explorer Donaldson Smith [1896], when he spoke of a "Borali" people in connection with other yet unidentified tribes, especially a mysterious group of pygmies, the "Dume".

Fleming et al. [1992/93] is particularly interesting for its rich vocabulary (with comparative notes), but it also presented much grammatical data, al-though only incompletely analysed. A year later it was followed by a precious 320-item wordlist of Ongota, Arbore, and Ts'amakko, published by the "Survey of Little-Known Languages of Ethiopia" [Dinota & Siebert 1994]. Although the words were carefully transcribed, no phonological analysis was attempted, and grammatical data was missing. In the following years, Aklilu Yilma, a linguist at Addis Ababa University (and one of the authors of Fleming et al. [1992/93]) collected additional sociolinguistic data on the people, visiting their settlement on various occasions. But no new linguistic data has been provided.

Differently from previous researchers, we more or less stumbled on Ongota while working on another language. On August 18, 2000, in the course of a fieldwork campaign aimed at various Dullay varieties, we stopped in the small town of Weyt'o, just after the bridge on the Weyt'o river, along the road leading from Arba Minch to the Omo. We had heard that a few Ongota were working at the Birale Agricultural Development Corp., a successful cotton company whose head-quarters are located just out of town, and had decided to enquire into the subject with the local manager. Although he could not be of great help (to his knowledge, no Ongota was found among the workers), he had us taken to somebody who arranged to have a few Ongota brought to us. On the following day we were introduced to three ethnic Ongota[3] and began interviewing them. It soon became apparent that the three had a limited command of the language (although they could remember much of its vocabulary). Finally, we were promised a much better speaker for the following day, and on August 20 we were introduced to Mole Sagane, of the *baritto* clan.

Mole was the informant who provided Dinota & Siebert's [1994] word-list (where he is referred to as Moyle Sagane). A short interview convinced us that he was the man we were looking for; Mole agreed to follow us to Jinka (the provincial capital of South Omo), where we worked full-time on Ongota from August 21 to 29. The present article contains the result of that work.

Mole claimed once to be 48 years old (but later denied knowing his age); he is a well-known and much respected elder, as well as a brave hunter; a native speaker of Ongota, he speaks like all his people a perfect Ts'amakko, masters well Hamar-

[3] Their names are: Geta K'awla, Muda K'awla, and Gename Wa'do.

Banna, and has also a working knowledge of both Amharic and Borana Oromo.[4] He soon proved to be a good linguistic informant, intelligent, cooperative and, above all, patient towards our endless questioning and our first clumsy attempts at speaking his language.

According to Mole, there are eight speakers of Ongota left: apart from himself, his older brother Aburre Sagane, and four brothers: Dulo Korayo, Oydalle Korayo, Guya'o Korayo and Iida Korayo (of the *ʕamaɗɗo* clan). They all live in Muts'e, a good hour's walk upstream of the bridge upon the Weyt'o river; most Ongota live there, together, we were told, with a few Ts'amakko. Two other Ongota speakers not living in Muts'e are Mole's older brother Tabba Sagane, and Gacco Olle (of the *ħizmakko* clan). According to Mole, the eight speakers actively use the language among themselves (on one occasion, we witnessed a conversation between Mole and one of his brothers).

Mole also claimed that four Ongota women speak the language, but since they are married to Ts'amakko men and have been living among the Ts'amakko for many years, it is probable that their active knowledge of the language is limited. We could not have their names.

The number of the ethnic Ongota is only slightly larger: according to Mole's mental count, they do not exceed one hundred. This accords well with Aklilu Yilma's (p.c.) personal count of 75 Ongota in Muts'e alone, and with the figure of 89 given in Fleming et al. [1992/93: 186]. Many, according to Mole, understand Ongota, some of them also speak it a little bit (such as the three Ongota we met on August 19), but for all practical purposes Ongota is a dead language and the Ongota are Ts'amakko speakers.

Still according to Mole, the Ongota abandoned their language and ceased teaching it to their children in order to avoid being teased by the Ts'amakko and the Banna. But he had to admit that their pastoral neighbors still look upon them in scorn, since the Ongota do not possess cattle and mainly live on fishing, hunting and honey.

We do not take a position on questions of classification in this descriptive sketch; different hypotheses have been put forward about the genetic affiliation of Ongota: that it is an autonomous branch of Nilo-Saharan [Blažek 1991]; that it is a separate branch of Afroasiatic (Harold Fleming), or that it makes a separate branch within South Omotic (Christopher Ehret, p.c.). While either a Cushitic or Omotic affiliation makes sense, one must note that the almost complete absence of inflectional morphology makes Aklilu Yilma's (p.c.) idea of a creolized pidgin attractive, if only, at the present state of our know-ledge, unverifiable. This creole would involve Nilotic, Omotic, and Cushitic elements (Lionel M. Bender, p.c.), because, as Bender [1994] has shown, any statistical test on the basic lexicon does not support aligning Ongota with any single Ethiopian language family. A further element pointing in the direction of a creole is possibly provided by the oral traditions of the Ongota, who speak of themselves as originally a collection of clans from

[4] Due to Mole's insufficient knowledge of Amharic, we were partially helped by Olle Fattale, a Ts'amakko policeman servicing in Jinka.

different ethnic and linguistic origins (ranging, for example, from the North Omotic Maale to the South Omotic Banna, to the East Cushitic Borana and Dishina).

2. Phonology

2.1. Segments. As noted by Fleming et al. [1992/93: 190], any account of the phonology of Ongota (henceforth: O) is hampered by the huge amount of free variation which is found in the data. This variation is most probably the result of the obsolescence of the language and of the pervasive influence of Ts'amakko (henceforth: Ts), which, as anticipated, is the true living language of the Ongota. Even when speaking in O, code-switching with Ts is the norm. Also, most phonological processes of O find an exact parallel in Ts (e.g., the Final Height Neutralization of Vowels, the Glottal Onset Insertion, and many others).

The O vowels are the five cardinals. Their quality is relatively stable and unaffected by neighboring consonants. As for the consonants, O operates with the 26 phonemes charted in Table 1.

Table 1. The consonant phonemes of Ongota

	bilab.		lab-dent.		(post) alv.		palato-alv.		velar		uvular		pharyn.		glottal	
voice (±)	−	+	−	+	−	+	−	+	−	+	−	+	−	+	−	+
Plosives oral		*b*			*t*	*d*			*k*	*g*	*q*					*ʔ*
glottalized						*ɗ*				*ɠ*						
nasal		*m*				*n*										
Affricates					*ʦ*		*ʧ*	*ʤ*								
Fricatives			*f*		*s*	*z*	*ʃ*				*χ*		*ħ*	*ʕ*	*h*	
Trill						*r*										
Approximant central		*w*						*j*								
lateral						*l*										

The following spelling conventions are used: IPA /ʃ/ = *š*; /ʤ/ = *j*; /ʧ/ = *c*; /j/ = *y*; /χ/ = *x*.

2.2. Allophonic variation

2.2.1. Voicing opposition. As for Ts'amakko and other Dullay varieties, as well as the Konsoid languages, the status of the voice-voiceless opposition is doubtful (cf. Hayward [1989: 7-8] for Ts'amakko and Amborn, Minker & Sasse [1980: 73] for Dullay in general). Voice alternations have been found extensively for /ħ/ and /ʕ/ and, in one case only, between /d/ and /t/, as in (1). A word-initial /t/ is often voiced into [d] when it comes to be found between vowels, for example, in cliticization, as in (2).

(1) *gaddaʕuni* [gaddaħħúni ~ gaddaʕúni] 'big'
gidata [gidáta ~ gitáta] 'you (P)'

(2) *midʻitte* 'clitoris' but *midʻitti=du* (an insult; from *midʻitte=tu*)

2.2.2. Labial alternation. In a few cases [p^h] is in free alternation with /f/.

(3) *oxoni faʔo* [p^{h}áʔo] 'to kindle the fire'

Word-internally /bb/ is optionally devoiced to [pp^h]: [bb] → [pp^h] / X __ X

(4) *dʻibba* [dʻípp^{h}a] 'hundred'
abba [app^{h}a] 'good'

In Ts, too, /p/ is in free alternation with /p^h/, /f/ or /ɸ/ in all positions, except when geminated or postnasal [Hayward 1989: 5]: for example, *pari* [pari ~ fari] 'to die' and *poolo* [poːlo ~ p^{h}oːlo ~ ɸoːlo] 'cloud'.

2.2.3. Fricativization. The palato-alveolar voiced affricate optionally loses its stop component, becoming a fricative. Again, this process occurs also in Ts: [dʒ] → [ʒ] (optional).

(5) *janta* [dʒánta ~ ʒánta] 'you' (S)

2.2.4. Glottalization. There is no plain (non-glottalized) /ts/ in Ts; the phoneme Hayward [1989] transcribes /s'/ "is usually an affricated (but occasionally a fricative) ejective" ([Hayward 1989: 6]; hence Hayward's "S'aamakko" for the more common "Ts'aamakko" or "Ts'amakko"). In O, on the contrary, /ts/ is plain; glottalization is frequently heard in Ts loans (e.g., *tsoonako* [ts'oːnáko] 'honeybee') and sporadic elsewhere, for example, *nitsina* [nits'ína] 'many').

Likewise, the phonemic status of glottalized /c'/ [tʃ'] vs. plain /c/ is doubtful: both phonemes are found in Ts (although the latter is rare [cf. Hayward 1989: 5]); in O, /c'/ has been recorded only in a few Ts loans, such as *cayde* [tʃ'ájde] 'pen, enclosure', but also in the possibly native word *conqorte* [tʃ'ɴqórte] 'mud'.

2.3. Phonological processes

2.3.1. Final Height Neutralization. Word-finally only three vowels are in opposition, the high vowels /i, u/ being optionally lowered to mid /e, o/:

$$V_{[+high]} \rightarrow V_{[-high,\ -low]} / \_\_\_ \#$$ (optional).

(6) *ki=* [ki ~ ke] '3S.M' (3rd Singular Masculine, Subject Clitic)

The same neutralization is common in Ts, not only in final position, for example, *geʕe* [géʕ'e ~ géʕ'i] 'belch' and *kuttonko* [kuttóŋko ~ kottóŋko] 'mountain'.

2.3.2. Final-Vowel Dropping. A final /a/ is often dropped in connected speech and before clitics. Other final vowels are not apparently affected. This process is reminiscent of similar rules dropping a "Terminal Vowel" (generally, a lexicalized former gender marker) in neighboring Cushitic languages (cf. Tosco [2001: 65f.] for Dhaasanac).[5]

(7) *barama* [baráma ~ barám] 'tomorrow'
caʕawa [tʃaʕáwa ~ tʃaʕáw] 'water; river'

2.3.3. Glottal-Onset Insertion. The phonemic status of /h/ is doubtful: on the one hand, a handful or so of words are consistently pronounced with an initial /h/; a few examples are: *handʃura* 'navel', *hobat-* 'to wash', and the Ts loan *hokam-* 'to exchange'. In all these cases, /h/ is considered phonemic. On the other hand, vowel-initial words are optionally provided with a glottal onset, and (possibly as a result of the uncertainties in voicing opposition [cf. 2.2.1.]) this is realized either as a glottal stop [ʔ] or as a voiceless laryngeal [h] in free variation:

Ø → [ʔ ~ h] / # __ (optional).

(8) *ayma* [áyma ~ ʔájma ~ hájma] 'woman'

In Ts, too, apparently there is free alternation between Ø and /ʔ/ word-initially, for example, *arre* [ʔarre ~ arre] 'donkey', although the phonemic status of /h/ is beyond doubt.

2.3.4. Final-Glottal Deletion. The presence of /ʔ/ in word-initial position is due to the operation of Glottal Onset Insertion (cf. 2.3.3); /ʔ/ is, nevertheless, phonemic in word-internal position (although attested in very few words only, such as *iiʔa* 'arm'). A glottal stop is deleted word-finally, but it is recovered in affixation, for example, [ki=ʤí] 'he killed, hit' will be interpreted and transcribed *ki=jíʔ*, on the basis of such forms as the IMPV.S: *jiʔá* 'kill!' and the IMPV.P: *jíʔta* 'kill! (P)'. Final Glottal Deletion (/ʔ/ → Ø / __#) is particularly relevant in Middle verbs, whose extension *=iʔ* is realized as [i], except when further followed by an affix, as shown by the examples in (9).

[5] The label "Terminal Vowel" itself is taken from Hayward's [1987] discussion of Ometo nominals, where it is used in a different technical meaning.

			IMPV.S:	IMPV.P:
(9)	*faʔ-*	'to kindle; add; put into'	*faʔá*	*fáʔta*
	compare also the derived forms:			
	faʔiʔ-	'to add for oneself'	*faʔiʔá*	*faʔiʔtá*
	faʔsan-	'to make add'	*faʔsaná*	*faʔsánta*
	moromiʔ- [moromi]	'to converse'	*moromiʔá*	*moromíʔta*
	taʔ-	'to take, catch'	*taʔá*	*táʔta*
	tuʔ-	'to put into (sth. solid)'	*tuʔá*	*túʔta*
	xoʔ-	'to beat, hit'	*xoʔá*	*xóʔta*
	zooʔ-	'to take honey'	*zooʔá*	*zóoʔta*

2.3.5. Final Devoicing. Voiced plosives are devoiced word-finally.

(10) *ki=šúb* [kiʃúb̥] 'he killed'
šubá [ʃubá] 'kill!'

The voiced affricate is devoiced, not only word-finally, but also, optionally, word-internally: /dʒ/ → /tʃ/ (optional).

(11) *ka=báaj* [kabá:tʃ] 'I carried'
báajjo [bá:tʃ:o] 'to carry'

The same optional devoicing occurs in Ts, too, for example, *jiʕʕo* [dʒiʕ':o ~ ʒiʕ':o] 'a sp. of bird'.

2.3.6. Final Non-release. Final voiceless plosives are unreleased.

(12) *ki=cák* [kitʃák˺] 'he ate' compare: *caká* 'eat!'

A particular application of Final Non-release is the dropping of a word-final glottal stop (Final Glottal Deletion, cf. 2.3.3).

2.3.7. Uvular Spirantization. The uvular stop is generally voiced and fricativized intervocalically: q → [ʁ] / V___V, as in (13). Word-finally, it can be affricated (14).

(13) *kata kara ka=qáfi* [kaʁáfi] 'I fished'
I fish 1S=catch.PST

(14) *ki=cóq* [kitʃóq͡χ] 'he shot'
3S.M=shoot.PST

Intervocalic uvular spirantization occurs in Ts, too, as, for example, in *soqo* [soʁo] 'salt'.

2.4. Assimilations

2.4.1. Assimilation to a dental. The Imperative Plural suffix *-ta* induces progressive voicing assimilation of an immediately preceding voiced plosive.

			IMPV.P
(15)	*yeqaɗá*	'hiccup!'	*yeqaɗtá* [yeqattá]
	sugá	'sniff!'	*súgta* [súkta]

2.4.2. Nasal Assimilation. A nasal assimilates to the articulation point of a following plosive.

(16)	*ki=ífam*	'he married'
	ayma=ko kita ífan=ta	'the woman he married'

(17)	*tagamá*	'sleep!'	*tagánta* (IMPV.P)

2.4.3. Sibilant harmony. /s/ of the Causative suffixes *=san*, *=as*, *=is* becomes a palato-alveolar /š/ when following a palatal consonant in the stem.

(18)	*ka=cóq*	'I shot'	*ka=cóqšan* 'I made shoot'

In Ts, /s/ of the causative suffixes *-is*, *-as* and the rarely attested *-os* is affected by the same kind of sibilant harmony (19).

(19)	*jooq-i*	'I/he ground'	*jooq-aš-i*	'I/he made grind'
	šoɦ-i	'I/he washed'	*šoɦ-iš-i*	'I/he wade wash'
	šiggar-i	'I/he stopped'	*šiggar-oš-i*	'I/he made stop'

In O., the same rule has been sporadically found in other cases, as in (20).

(20)	*šijju*	'by us, chez nous'	(**sijju*)

2.5. Syllables. The syllable structure of O can be expressed as (C)V(V)(C). This allows the following syllable types:

V	as in:	*á.xa.co*	'sun'
CV		*ca.ta*	'meat'
CVV		*zoo.ba*	'beeswax'
VC		*ip.pa*	'door'
VVC		*iiš.te*	'neck'
CVC		*(ka=)cóq*	'I shot'
CVVC		*(ka=)tíid*	'I put' (past)

2.6. Clusters and epenthesis. Clusters are limited to two elements and to word-internal position. A three-element cluster arising from affixation processes is

avoided through epenthesis of /i/ after the second member. That the affricates /ts/, /č/ (=[tʃ]), and /j/ (=[dʒ]) are single segments and not sequences of a plosive and a fricative is shown by the fact that a following segment does not yield epenthesis.

(21) *tuuts-*'to push' IMPV.S: *tuutsá*
IMPV.P: *túutsta* (**túutsita*)

2.7. Length. Vowel length and intervocalic consonant gemination (both marked by doubling of the relevant symbol) are phonemic.

(22) *aka* 'foot, leg' *aaka* 'women, females'
aka 'foot, leg' *akka* 'grandfather'
ame- 'to suck' *aame-* 'to rest'

Certain affixes involve the gemination of a preceding consonant, such as the infinitive affix *=Co* (23). Again, the same rule affects the infinitive suffix *-o* in Ts, as in (24).

(23) *ɗim-* 'to plunge' > *ɗímmo* 'to plunge' (Infinitive)
kat- 'to come out' > *kátto* 'to come out' (Infinitive)

(24) *koʔ-i* 'I/he burned'; *koʔ-ʔo* 'to burn' (Infinitive) (Ts)
deħ-i 'I/he gave'; *deħ-ħo* 'to give' (Infinitive) (Ts)

2.8. Suprasegmentals. Accent is defined here as an abstract property of morphemes to be able to carry high pitch. The presence of accent is marked by /ˊ/ and is contrastive.

(25) *yooba* [yóːba] 'men, males' *yoobá* [yoːbá] 'see!' (IMPV.S)

(in the first case, accent is placed upon the first mora by default (see below); in *yoobá*, the stem *yoob-* is followed by the morpheme of the Imperative Singular (Positive) *-á*, which bears inherent accent.)

The accent-bearing unit is the syllable, but, on long vowels, accent may fall either on the first or the second mora. A sequence /ˊvv/ is phonetically realized as a long falling tone; conversely, a sequence /vˊv/ is phonetically realized as a long rising tone. Falling and rising tones, being predictable, are not marked in the transcription.

Opposition between a falling and a rising tone may be seen in the Past vs. Non-Past of verbal stems of shape CVVC (cf. 3.9.3).

(26) *ka=xáab* 'I scratched' vs *ka=xaáb* 'I'll scratch'
[kaχáàb̥] [kaχàáb̥]

Accent may be lexically or morphologically defined, or may be assigned by default. In this case, it affects the penultimate syllable. Default-assigned accent is not marked in the phonological transcription.

(27) *gitata* [gitáta] 'you (P)'
kara [kára] 'fish'

Penultimate position is the rule for accent placement also in plurimorphemic words resulting from the affixation/cliticization of accentless morphemes.

(28) *ayma* [ájma] 'woman' *ayma=ko* [ajmáko] 'the woman'
ʕongota [ʕoŋgóta] 'Ongota' *ʕongotitta* [ʕoŋgotítta] 'one Ongota'

Morphologically-assigned accent is found in verbs (cf. 3.9.3), where past is expressed by accent on the first (in the following example, the only) stem vowel, while non-past is expressed by absence of accent on the stem vowel, which induces high pitch on the subject clitic *ka*.

(29) *ka=cóq* [katʃóq] 'I shot' *ká=coq* [kátʃoq] 'I'll shoot'

Accent may be assigned lexically, either on the antepenultimate (for example, *ʕádaba* 'tongue') or on the last mora (for example, *barám* 'tomorrow' in alternation with *barama* [baráma]).

Accent may also be assigned lexically to specific morphemes, such as the Imperative Singular *-á* or the Imperative Plural *-ta* (which induces accent on the preceding vowel).

(30) *coqá* 'shoot!' *cóqta* 'shoot!' (P)

2.9. Treatment of Ts'amakko loans. Borrowings from Ts are often left unchanged. However, a final /o/ of Ts is often changed into /a/ in O, especially in the Singulative suffixes (cf. 3.2.1.1), as in (31). There are, nevertheless, many exceptions, as in (32), which are perhaps to be regarded as unassimilated loans. A similar change of Ts final /e/ to O /a/ is also common, shown in (33).

(31) Ts'amakko	Ongota	
irgaʕo	*irgaʕa*	'axe'
orgo	*orga*	'Hamer-Banna'
baaro	*baara*	'armpit'
barlo	*barla*	'white-browed sparrow weaver'
ħeko	*ħooka*	'chest' (note the irregular vowel change)
rummaʕtitto	*rummaʕtitta*	'an Arbore man/woman'
orgitto	*orgitta*	'a Hamer-Banna man/woman'
konsitto	*konsitta*	'a Konso man/woman'
kaykitto	*kaykitta*	'male guest'

	Ts'amakko	Ongota	
(32)	*borahho*	*boorahho*	'seed'
(33)	*atole*	*atolla*	'pigeon'
	dige	*diga*	'owlet'
	ɗonke	*ɗonka*	'hornbill'
	ħezze	*ħizza*	'root, vein'
	biye	*biya*	'earth, land'
	kirince	*kirinca*	'ankle'
	kurrube	*kurruba*	'crow'

In a few cases a Ts noun extended with a lexicalized Singulative suffix has been taken into O in its bare form, possibly from an earlier stage of Ts; in most such cases the O word ends in /a/ (34); a few end in /o/ (35). There are a few cases of irregular change in the final vowel or the suffix (36).

(34)	*berko*	*bera*	'season'
	doʔosko	*doʔosa*	'waterbuck'
	dullayko	*dullaya*	'the Weyt'o river'[6]
	gereʕko	*gereʕa*	'thief'
	gibilko	*gibila*	'knee'
	gubusko	*gibisa*	'femur'
	gaarakko	*gaara*	'monkey'
	damʕatto	*damʕa*	'giraffe'
	qalatte	*qalaya*	'hyena'
(35)	*ħalte*	*ħalo*	'calabash'
	balgitto	*balgo*	'ostrich'
(36)	*gogɗile*	*gogɗa*	'white-headed buffalo weaver'
	tokonko	*tokoma*	'heel'
	kormicco	*korome*	'fishing hook'

The /ʕ/ of Ts loanwords is sometimes devoiced to /ħ/ (cf. 2.2.1. for Voicing Opposition in O) (37). A cluster /ʕt/ in a Ts loan is shifted to /tt/ in O (38).

(37)	*ʕaaško*	*ħaaše*	'grass'
	ʕangararo	*ħangararo*	'worm'
(38)	*oršaʕte*	*oršatte*	'rhinoceros'
	muqoʕte	*muqotte*	'frog'

[6] From the local name of the Weyt'o river Amborn, Minker & Sasse [1980] originally proposed to call "Dullay" an East Cushitic dialect cluster spoken on both sides of the river (with Ts'amakko being spoken on the west side, and all the other dialects on the highlands to the east).

Finally, the following kinship names are extended in O with *-ne*.

(39) Ts'amakko	Ongota	
ʕazo	*ʕazane*	'younger brother'
šaʕalko	*šaʕalkune*	'older brother'

2.10. Words, affixes and clitics. A word is defined here phonologically as the domain of accent placement (cf. 2.8). A word may be mono-morphemic (as is most commonly the case of nouns), or it may be formed by a root morpheme followed by one or more affixes (for example, verbal forms, which are always at least bimorphemic), or, still, by a stem preceded and/or followed by one or more clitics:

Word = (Clitic_n) + Stem + (Affix_n) + (Clitic_n)

A few examples displaying different word-compositional possibilities are shown in (40).

(40) *ayma*	'woman' (monomorphemic)
sugá	'sniff!' (stem *sug-*'to sniff' + IMPV.S. Suffix *-á*)
coqšaná	'make shoot!' (stem *coq-*'shoot' + Causative suffix *-san* + IMPV.S. Suffix *-á*)
ayma=ko	*ayma* + Determinative clitic *=ko*
ka=cóq	'I shot' (*ka=* '1st Sing. Subject Clitic' + stem *coq-*'shoot' + Past */ˊ/*)

3. Morphology

3.1. Word-classes. Nouns and verbs may be clearly defined in O in terms of their different morpho-syntactic behavior. Other categories of less certain status are the adpositions, the pronouns, the adjectives, and the numerals.

3.2. Nouns. Native nouns are uninflected, apart from the occasional use of Ts number (both Singulative and Plural) suffixes. In one case, from the native noun *caʕa* 'stone' a diminutive has been provided through a change in vowel quality: *ceʕe* 'pebble'.

Nouns always end in a vowel (verbal stems, on the contrary, are generally consonant-ending); the preferred word shapes are (C)V(V).CV or (C)V(V).CV. CV. The final vowel is subject to deletion when a Ts number suffix is added.

A few nouns are apparently related to verbal stems, in a few cases through the addition of a vowel copying the (last) stem vowel of the verb. *ɗayte* 'firestick' is apparently a borrowing from Ts *ɗayte*, but compare the verb *ɗay-*'to twist'.

(41)	*ame-*	'to suck'	*ama*	'breast'
	axay-	'to rise'	*áxaco*	'sun'
	ʕad-	'to lick'	*ʕádaba*	'tongue'
	caʕaw-	'to drink'	*caʕawa*	'water; river'
	naʕ-	'to give'	*náʕana*	'food' (?)
	šoxe-	'to have sex'	*šoxo*	'blood'
	zooʔ-	'to collect honey'	*zóoba*	'beeswax'

3.2.1. Number

3.2.1.1. Singulative. Names of peoples (all of them apparently Ts loans, except *fuga* 'Amhara') have a collective meaning; from them singulative forms are built through the suffixes *-itta* (M) and *-itte* (F), corresponding to Ts *-itto* (M) (cf. 2.9) and *-itte* (F), respectively.

(42)	*fuga*	S.M *fugitta*		'Amhara'[7]
	orga	S.M *orgitta*	S.F *orgitte*	'Hamar-Banna'
	(cf. Ts *orgo*	S.M *orgitto*	S.F *orgitte*)	
	rummatte	S.M *rummattitta*		'Arbore'
	(cf. Ts *rummaʕte*	S.M *rummaʕtitto*)		
	ʕale	S.M *ʕalitta*	Gawwada and other Dullay-speaking groups of the highlands	
	(cf. Ts *ʕalle*	S.M *ʕallatto*)		
	konso	S.M *konsitta*	'Konso'	
	ʕongota	S.M *ʕongotitta*	'Ongota'	
	(cf. Ts *ʕongota*	S.M *ʕongotitto*)		

Examples of the use of the singulative forms (43)-(44) vs. plural (45):

(43) *kata ʕongotitta* 'I am *Ongota*' (focalized; cf. 4.11)
I Ongota-SING

(44) *ayma=ko ʕongotitta* 'the woman is *Ongota*'
woman-DET Ongota-SING

(45) *juta ʕongota* 'we are *Ongota*'
we Ongota

The Ts singulative suffixes *-(ak)ko* (M), *-(at)te* (F), as well as the Plural suffix *-ayke* are used with derived adjectives, as in (46) (cf. 3.6.2). In one case, the same

[7] The term is widespread in Ethiopia for depressed or outcaste clans. Its use for the Amhara is probably derogatory.

suffix *-te* has been used with the O word *ceʕe* 'pebble' with a diminutive meaning, yielding *ceʕete* 'pebble'.

(46) Masculine Singular	Feminine Singular	Plural	
zaarakko	*zaaratte*	*zaarayke*	'fool, crazy'
kamurko	*kamurte*	?	'rich'
daafakko	*daafatte*	*daafayke*	'blind'
arrakko	*arratte*	*arrayke*	'dark grey'
tonnakko	*tonnatte*	*tonnayte*	'lame'

3.2.2.2. Plural and Collective. A common way to express plurality is through the use of the adjective *baɗɗe* 'all' or *nitsina* 'many' (47). Occasionally, the Ts plural affix *=aɗɗe* is used with O nouns. A frequent case is *ʕádiba* 'elder', which is often provided a plural form *ʕadibaɗɗe*, perhaps because other nouns referring to groups of people express number distinctions through the use of different stems, as in (48).

(47) *ayma=ko baɗɗe* 'all the women'
woman-DET all

(48) Singular	Plural or Collective	
ayma	*aaka*	'woman; female; wife'
inta	*yooba*	'man; male; husband'
jaaka	*eela*	'child, baby'
juuka	*igire*	'girl; daughter'
maara	*eela*	'boy; son'

In a few cases (49), the element *-wa* has been observed with a plural function. It might be an old Plural marker fallen out of use.

(49) *ʕongotawa*	'Ongota' (P)
karawa	'fishes'
juukawa	'girls'

3.2.2. Gender. Apart from the occasional use of different gender-sensitive Singulative suffixes, gender is not formally expressed on O nouns. Nominal gender has nevertheless relevance in the pronominal system and in verbal accord. In the Personal Pronouns different forms for the 3rd Sing. Masculine and Feminine are used. Gender accord with subject nouns denoting humans is natural; with subject nouns denoting things the Subject clitic is in the 3S.F, and the same applies to most animals, especially little and socially unimportant ones (for example, most wild animals).

(50) *uke ki=tíb* 'an/the elephant died'
elephant 3S.M-die.PST

vs.

(51) *karbo ku=tíb* 'a/the bird died'
bird 3S.F-die.PST

3.3. Pronouns. The Personal Pronouns of O follow the usual Cushitic seven-members system, with separate Masculine and Feminine elements for the 3rd Singular.

Six series of personal pronominal elements have been identified: Emphatic, Subject Clitic, Object, Postpositional, and Possessive; a sixth series, the Indirect Clitics, has separate forms for the singular persons only. They are shown in Table 2, together with their glosses.

Table 2. Personal Pronouns

EMPHATIC (INDEPENDENT)		SUBJECT CLITIC		OBJ / INDIRECT / POSTPOS				POSSESSIVE	
kata	I	*ka*	1S	*ka*	*na*	*ka*	me	*sinne*	my
janta ~ jaama	you	*i*	2S	*jami*	*jata*	*jan*	you	*siidu*	your
kita	he	*ki*	3S.M	*ki*	*wana*	*ki*	him	*seena*	his
kuta	she	*ku*	3S.F	*ku*	*wata*	*ku*	her	*suu?u*	her
juta	we	*ju*	1P	*ju*	—	*ju*	us	*sijju*	our
gitata	you	*gita*	2P	*gita*	—	*gita*	you.Obj	*sigida*	your
ki?ita	they	*ki?i-a*	3P	*ki?i ~ ki?a*	—	*ki?i*	them	*suwaya*	their

3.3.1. Emphatic Pronouns. Emphatic pronouns may occur in whatever syntactic role but do not replace members of the other series. They may be regarded as extrasentential. In the following sentence the Emphatic pronoun is underlined.

(52) *juta ħanca ju=ɠád* 'we cut the tree'(past)
we tree 1P-cut.PST

3.3.2. Subject Clitics. The Subject Clitics obligatorily precede the verbal form in declarative clauses. The Impersonal Subject Pronoun *a* (ISP), which is used in the Passive (cf. 4.3.3), also belongs here. In the following sentence the Subject Clitic is underlined.

(53) *janta ħanca i=ɠád* 'you cut the tree'(past)
you tree 2S-cut.PST

3.3.3. Object Pronouns. The Object Pronouns (underlined in the following examples) are used in the role of direct objects; they may appear before the Subject Clitic but may also be cliticized after a verbal form.

(54) *kata ki ka=ɠóhis* 'I made him grow'
I him 1S-make_grow.PST

(55) *kata šuʔuna=me ka=šúguc=ki* 'I smeared him with butter'
I butter-with 1S-smear.PST-him

3.3.4. Indirect Pronouns. A series of Indirect Pronouns is proposed on the basis of a few sentences only, in which the 3S.M and 3S.F have irregular forms *wana*, *wata* (reported also by Fleming et al. [1992/93: 198]), 1S *na*, and 2S *jata*. *na* and *ta* as markers of 3S.M and 3S.F, respectively, are found in relative clauses (see 4.7).

For the plural persons the Object Pronouns are used followed by the postposition *=ku* 'for'. The Indirect Pronouns can appear either before or after the verbal form, as in (56)-(57).

(56) *ħálo=ke ʕari uccé wana* 'fill the container with coffee for him!'
container-in coffee put.IMPV.S him

(57) *barama tora ká=naʕ jata* 'tomorrow I'll give you my spear'
tomorrow spear 1S-give.NPST you

3.3.5. Possessives. As expounded in 3.3.6, the Possessive pronominal series may possibly be analyzed as containing the preposition *se* 'of' followed by a special series of pronominals, also occurring with the preposition *uku=* 'on'. The Possessives act as nominal modifiers but may also occur alone.

(58) *ayma sinni seena=tu abba* 'my wife is more beautiful than his'
woman my his-from good

3.3.6. Postpositional series and other pronominals used with adpositional elements. The Postpositional Pronouns are used with a following postposition (see 3.5). With the preposition *uku=* 'on', which is apparently used only with pronominals, the pronominal element follows in a special form. This same form is also found in the Possessives, which may be analyzed as formed with the preposition *se* (found, albeit not regularly, in nominal phrases; see 4.2).

The pronominal series used with all the postpositions, the one used with *uku=* 'on', and the Possessives are shown in Table 3. Use of the preposition *uku=* is shown in (59)-(65).

(59) *uku=ni ki=ɗéhaɗ* 'he came near ("upon") me'
on-me 2S.M.come_near.PST

Table 3. Postpositional Pronouns

	Pronouns + *=tu* 'from'	*uku=* 'on' + Pronouns	Possessives (*se* 'of' + Pronouns)
1S	*ka=tu*	*uku=ni*	*sinni*
2S	*jan=tu*	*ugu=du*	*siidu*
3S.M	*kii=tu*	*eke=na*	*seena*
3S.F	*kuu=tu*	*uku=ʔu, uku=wi*	*suuʔu*
1P	*ju=tu*	*uku=šijja*	*sijju*
2P	*gida=tu*	*uku=gida*	*sigida*
3P	*kiʔi=tu*	*uku=waya*	*suwaya*

(60) *kata ka=ɗehád ugu=du* 'I am coming near ("upon") you'
I 1S-come_near.NPST on-you

(61) *eke=na ɗehaɗá* 'go near him!'
on-him come_near.IMPV.S

(62) *uku=ʔu ɗehaɗá* 'go near her!'
on-her come_near.IMPV.S

(63) *janta uku=šijja ~ uku=šijji i=ɗéhaɗ* 'you came near us'
you on-us 2S.come_near.PST

(64) *kata uku=gida ka=ɗéhaɗ* 'I went near you (P)'
I on-you.OBJ 1S.come_near.PST

(65) *kata uk[u]=waya ka=ɗéhaɗ* 'I went near them'
I on-them 1S.come_near.PST

The following sentences show the use of the Postpositional Clitics with the postposition *=ki* 'in, to'.

(66) *kata gida=ki ka=ɗéhaɗ* 'I went near you (P)'
I you.OBJ-to 1S-come_near.PST

(67) *janta ju=ki i=ɗéhaɗ* 'you came close to us'
you us-to 2S-come_near.PST

When one leaves out of consideration the irregular and defective Indirect Object series, it becomes obvious that the pronominal series share a common set of forms, and that this series actually coincides with the Postpositional Series. In particular, both the Subject and the Object Clitic series are actually identical to the Post-

positional series, with the exception of the 2S Subject Clitic *i* and the 2S Object Clitic *jami*, while the Emphatic pronouns may be analyzed as formed through affixation of an invariable element *-ta* of unclear value.[8]

3.4. Deictics and Determiners. The deictic system of O is still far from clear. The elements *=ko* and *=nki* (the former very possibly borrowed from Ts'amakko; cf. 3.2.1.1. on Singulatives) are frequently found, with no apparent difference in meaning. Both *=ko* and *=nki* will be glossed "Det" (for Determiner); an alternative analysis could account for these elements as connectors, as they are generally found with nouns which are further followed by a modifier, following the pattern common in Ts'amakko and generally in Dullay:

(68) *ayma=ko, inta=nki* 'the woman, the man'
woman-DET, man-DET

More clearly deictic is *inda* 'this', which follows the noun, either in its bare form or, more commonly, with the Determiners *=ko* and *=nki*.

(69) *cawo inda ka=ħéeni* 'I like this gun'
gun this 1S-like.PROG

(70) *ayma=nki inda abba* 'this woman is beautiful'
woman-DET this beautiful

Other deictic words are *áddate* 'there' (implying a considerable distance from the speaker and the hearer) and *inkena* 'here (for Masculine nouns)/*inkona* (for Feminine nouns — females, animals, and things), possibly to be analyzed as plurimorphemic: *in=ke/ko=na*, with *=ke*, *=ko* being the 3S.M and 3S.F Object Clitics, respectively. Both *áddate* and *in=ke=na/in=ko=na* follow a noun, generally with the Determiners *=ko* and *=nki*.

(71) *maara=nki áddate sae* 'whose is that (faraway) child?'
child-DET there whose

(72) *maara=ko inkena sae* 'whose is this child (nearby)?'
child-DET here.M whose

(73) *tagara inda áddate ka=ħéeni* 'I like that place' ("shade")
shade this there 1S-like.PROG

(74) *tagara inda in=ko=na ka=ħéeni* 'I like this place ("shade") here'
shade this here-F 1S-like.PROG

[8] It is noteworthy that a similar element is found in Omotic languages, most notably in the 1S *ta, which Bender [2000: 197 ff) proposes to explain on the basis of an old affixed copula; in due time the original pronominal element was dropped and its function was taken over by the erstwhile copula itself.

3.5. Adpositions. Adpositions are clitics to a preceding element, either a noun, a noun modifier, or a pronoun.

=tu 'from'

(75) *haw=tu éeni* 'where do you come from?'
where-from come.PROG

(76) *ʕongot=tu ka=éeni* 'I came from Ongota'
Ongota-from 1S-come.PROG

(77) *kata caʕáw=tu katto ka=ħáabini* 'I want to come out of the water'
I water-from come_out.INF 1S-want.PROG

(78) *ka=tu eefi ku=kúm* 'I finished the milk'
me-from milk 3S.F-finish.PST

The postposition *=tu* may also follow a Possessive pronominal with a spatial meaning ('by', Fr. 'chez').

(79) *sijji=tu maara xódi* 'a *boy* was born to us'
our-from child be_born.PST

Noteworthy is also the use of *=tu* in insults, such as in *sorra=du* from *sorra* 'anus' (see also the lexicon; note also the intervocalic voicing of *=tu* to *=du* ; see 2.2.1).

=ki 'to, in' (movement):

(80) *haw=ki i=róota* 'where are you going?'
where-to 2S-go.PROG

(81) *ʕongot=ki ka=róota* 'I am going to Ongota'
Ongota-to 1S-go.PROG

(82) *kata caʕáw=ki réeħu ka=ħáabini* 'I want to go in the water'
I water-to go_down.INF 1S-want.PROG

(83) *ħalo=ke ʕari uccé=ju=ku* 'fill the container with coffee for us!'
container-in coffee put.IMPV.S-us-for

=me 'with' (instrumental and comitative)

(84) *hak=me gida=éeni* 'who did you (P) come with?'
who-with 2P-come.PROG

(85) *kata cawo=me binta ka=ħát* 'I shot the animal with the gun'
I gun-with animal 1S-shoot.PST

(86) *inta gúlbata=mi ki=dángadi* 'the man is strong' ["works with
man strength-with 3S.M-work.PROG strength"]

=ku 'for' (also used to express an indirect object with nominals and, as anticipated in 3.3.4., with plural pronouns)

(87) *ħalo=ke ʕari ka=úcci gida=ku*
container-in coffee 1S-put.PST you.P-for
'I filled the container with coffee for you (P)'
["I put coffee in the container for you"]

(88) *ħalo=ke ʕari uccé ju=ku*
container-in coffee put.IMPV.S us-for
'fill the container with coffee for us!'

=na 'with, and'

(89) *caʕáw=na eefi ella ki=ʕángata* 'he mixed water with milk'
water-and milk together 3S.M-mix.PST

(90) *ħalo=ke ʕari uccé na* 'fill the container with coffee for
container-in coffee put.IMPV.S me me!'

(91) *ħalo=ke ʕari uccé waya=ku* 'fill the container with coffee for
container-in coffee put.IMPV.S them-for them!'

(92) *ħalo=ke ʕari ka=úcci ja=ta* 'I filled the container with coffee
container-in coffee 1S-put.PST you-for for you'

(93) *ħalo=ke ʕari ka=úcci=wa=ta* 'I filled the container with coffee
container-in coffee 1S-put.PST-her-for for her'

3.5.1. Spatial relations. A few items, possibly nouns, which follow a noun to which the postposition *=tu* 'from' is affixed, are used to express and further delimit various spatial relations.

galla 'under' (from Ts *gallo*)

(94) *inta ħanca=tu galla ki=ída* 'the man was under the tree'
man tree-from under 3S.M-be_there.PST

ippa=tu 'out of' ("door.from")

(95) *janta wura=tu ippa=tu i=kát* 'you came out of the house'
you house-from out 2S-go_out.PST

gúskuto 'in, within' (*gusku* ? + *=tu* 'from')

(96) *karbo wura=tu gúskuto ku=ɠáyya* 'the bird is flying in the house'
bird house-from within 3S.F-fly.PROG

rúggitu 'above, over, upon' (*ruggi* ? + =*tu* 'from')

(97) *karbo wura=tu rúggitu ku=róota* 'the bird is flying over the house'
bird house-from over 3S.F-go.PROG

bagáttu 'behind' (*baga* ? + =*tu* 'from')

(98) *inta wura=ko=tu bágattu ki=ída* 'the man is behind the house'
man house-DET-from behind 3S.M-be_there.PST

balʕastu 'in front of' (*balʕas* ? + =*tu* 'from')

(99) *inta wura sinni=tu balʕastu ki=ɗehéni*
man house my-from front 3S.M-stop.PROG
'the man is sitting in front of my house'

(100) *inta juuka=tu balʕastu ki=yáwa*
man girl-from front 3S.M-stand.PROG
'the man is standing in front of the girl'

3.6. Adjectives. There is not a unitary category "Adjective": many adjectival concepts are expressed by verbs, a minority of others by true adjectives.

3.6.1. Basic adjectives. A few adjectives have different endings for Masculine and Feminine, or for Singular and Plural, but most are invariable. A few native adjectives end in =*uni*, which is also used in derived adjectives from verbs (see below). A list of basic adjectives is given below.

(101)

gaddaʕuni; P: *giddeʕeta*	'big; large; wide; fat, old (of people and animals)'
munnuʕuni; P: *minʕeta*	'small, little; young (of people and animals)'
abba	'nice, beautiful; good; sweet'
ʕádala	'ugly; bad'
ʕádiba	'old' (for Masculine nouns only)
geccate; P: *geccayke*	'old' (for Feminine nouns only; from Ts)
kamurko; F: *kamurte*	'rich' (from Ts)
carba	'thin'
ɦólbatuni	'short'
órma	'tall' (from Ts)
zaarakko; F: *zaaratte*; P: *zaarayke*	'fool; crazy' (from Ts)
mekente	'sterile' (from Ts; subj: woman; for men the expression *moolo tiibto* ["the penis died"] is used

3.6.2. Derived adjectives. A few adjectives are derived from verbs; an ending *-ni* has been noted in a few cases. Compare (102) with (103)-(104), (105) with (106), (107) with (108), and (109) with (110).

(102) *inta=ko šaʕatuni* 'scared, fearful man'
man-DET afraid

(103) *kata ka=šaʕatí* 'I am afraid'
I 1S-be_afraid.NPST

(104) *inta=ko juta ju=ma=šaʕáti=ʔi* 'we are not afraid of that man'
man-DET we 1P-NEG-be_afraid-NEG

(105) *caʕáw tsántuni* 'cold water'
water cold

(106) *sibila=ko ku=tsán* 'the iron is (became) cold'
iron-DET 3S.F-be_cold.PST

(107) *ayma=ko ereħte* 'pregnant woman'
woman-DET pregnant

(108) *ku=éreħi* 'she is pregnant'
3S.F-be_pregnant.PST

(109) *inta daafakko* 'blind man'
man blind

(110) *kata ka=dáaf* 'I became blind'
I 1S-be_blind.PST

3.6.3. Verbs with adjectival meaning. Other adjectival concepts are expressed through verbs.

(111) *kata ka=malál* 'I am tired, weak' (from Ts)
I 1S.be_tired.NPST

(112) *ħanca ki=šóoni* 'the wood is (became) hot'
wood 3S.M-be_hot.PST

(113) *caʕa ku=bóʕi* 'the stone is (became) hard'
stone 3S.F-be_hard.PST

(114) *naʕana=ko ku=tsáqami* 'the food is (became) salty'
food-DET 3S.F-be_salty.PST

3.6.4. Colors. Like other languages of the area (cf. Tosco [2001: 582ff.] for Dhaasanac), the color system of O has five basic colors:

áttomuni	'white'
ɗákkamuni	'black'
róomini	'red'
cárkamuni	'green'
silbe	'yellow'

The following non-basic colors have been recorded; note the use of *silbe* 'yellow' in these compounds.

silbe áttomuni	'light blue' ("yellow+white")
silbe cárkamuni	'dark green' ("yellow+green")
silbe ɗákkamuni	'blue' ("yellow+black")
silbe róomini	'pink; violet' ("yellow+red")
moora	'light gray' (from Ts)
arrakko; F: *arratte*; P: *arrayke*	'dark gray' (from Ts)

3.6.5. Adjectival phrases. The adjective follows the noun it modifies. Both the noun and the adjective may be followed by a determiner.

(115) *ayma=nki gaddaʕuni=nki (sinni)* 'the big woman (is my wife)'
woman-DET big-DET my

(116) *juuka=ko abba=ko (ka=ħáabini)* '(I want) a beautiful girl'
girl-DET nice-DET 1S-want.PROG

3.6.6. Comparatives and superlatives. In comparatives the adjective does not change; the subject may either precede or follow the element against which the comparison is made, which is followed by the postposition *=tu* 'from'. The same construction, which is common in the area, is used in Ts.

(117) a. *inta=nki ayma=ko áddate=tu gaddaʕuni*
man-Det woman-Det there-from big
'the man is taller than that woman'

b. Ts:
qawko kutta gaant=issa kaysa=nu ko ɗamma
man this woman-that there-to CONN big
'this man is taller than that woman'

(118) a. *ayma=nki=tu inta=nki gaddaʕuni*
woman-DET-from man-DET big
'the man is taller than the woman'

b. Ts:
gaante=nu qawko ɗamma
woman-to man big
'the man is taller than the woman'

(119) a. *inta=nki inda ayma=ko áddade=tu abba*
man-DET this woman-DET there-from beautiful
'this man is more beautiful than the woman'

b. Ts:
qawko=kutta gaante kaysa=nu ko qayya
man-this woman that-to CONN beautiful
'this man is more beautiful than the woman'

(120) a. *ayma=nki=tu inda áddate abba*
woman-DET-from this there beautiful
'that (woman) is more beautiful than this one'

b. Ts:
gešant=itta=nu kissa abba
woman-this-to that beautiful
'that (woman) is more beautiful than this one'

(121) a. *ħanca=nki baɗɗi=tu inda gaddaʕuni*
tree-DET all-from this big
'this tree is the biggest of all'

b. Ts:
gar=e xumbi=nu kutta ko ɗamma
tree-P all-to this CONN big
'this tree is the biggest of all'

Other sentences:

(122) *ayma=nki inda=tu inta áddate gaddaʕuni*
woman-DET this-from man there big
'that man is taller than this woman'

(123) *wura siidi=tu wura sinni gaddaʕuni*
house your-from house your big
'my house is bigger than yours'

For the equative comparative, the Ts structure with the Ts word *gura* 'like' following the second element is used.

(124) a. *ħanca=nki ħanca=nki áddate gura gaddaʕuni*
tree-DET tree-DET there like big
'this tree is as big as that one'

b. Ts:
garko kutta garko kaysa gura ko ɗamma
tree this tree there like CONN.M big
'this tree is as big as that one'

Sometimes *=tu* appears also after the second element in an equative comparison.

(125) *inta=nki ayma=ko aɗɗate=tu gura abba*
man-DET woman-DET there-from like beautiful
'this man is as beautiful as that woman'

3.7. Numerals

3.7.1. Cardinals. The following numerals have been recorded:

kálbano ~ akkálbano	'one'[9]
lama	'two' (Cushitic)
zaħa	'three' (Ts *zéħ*)
tálaħa	'four' (Ts *tálaħa*)
xubbi	'five' (Ts *xobín*)
tsanafa	'six'
taħanke	'seven' (Ts *taħán*)
ista	'eight'
gollanke	'nine' (Ts *gollán*)
coma	'ten'[10]

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[9] The form *akala* mentioned by Fleming et al. [1992/93: 203] has not been found. On the other hand, *kálbano ~ akkálbano* apparently contains a formative *-bano* which is also found in the special forms for 'two' and 'three' used in numeral phrases (see 3.7.2).

[10] When counting or mentioning numbers, the oral expression of the numbers is usually accompanied by a conventional manipulation of the fingers; the numbers up to ten are expressed as follows:
1: little finger curled by the other hand, other fingers extended;
2: little finger and ring finger curled by the other hand, other fingers extended;
3: little finger, ring finger and middle finger curled by the other hand, other fingers extended;
4: all fingers except the thumb curled by the other hand, thumb extended;
5: all fingers clenched over the thumb;
6: thumb of left hand held between the thumb and the forefinger of right hand; other fingers of left hand extended;

continued on next page

Teens are formed with *coma* 'ten' followed by the unit, for example:

coma akkálbano 'eleven'

ɗibba (*[~ ɗippa]*) 'hundred'
(cf. Dullay *ɗippá* [Amborn, Minker & Sasse 1980: 96])

3.7.2. Numeral phrases. The numeral always follows the head noun. The following special forms used in phrases have been recorded (see also fn. 9).

lámbano 'two'
zéħbano 'three'

(126) *wura=ko* *áddate* *zéħbano* *ku* *sinni* 'those three houses are mine'
house-DET that three 3S.F my

The other numerals are used in phrases without changes.

(127) *wura=ko* *áddate* *xubbi* *ku* *sinni* 'those five houses are mine'
house-DET that five 3S.F my

3.8. Adverbs. A few elements have been tentatively classified as adverbs; they can precede or follow a noun or an emphatic subject pronoun, but always precede the verb and the pronominal clitics.

Adverbs of time:

barám ~ *barama* 'tomorrow':

(128) *barama* *kata* *ka=kolí* 'I will return tomorrow'
tomorrow I 1S-return.NPST

7: thumb and forefinger of right hand inserted between the thumb and the forefinger of the left hand; the forefinger of the left hand is curled, while the other fingers are extended;
8: thumb, forefinger and middle finger of the right hand inserted between the thumb and the forefinger of the left hand; the fingers of the left hand are extended;
9: all fingers of the right hand except the little finger inserted between the thumb and the forefinger of the left hand; the fingers of the left hand are extended;
10: both hands as for 5.; the two fists knocked together.
This system is, in a way, the reverse of the one used among the Dhaasanac [cf. Tosco 2001: 108]; in particular, the Dhaasanac start from the forefinger and proceed toward the little finger, while the Ongota start from the little finger; among the Dhaasanac, extension of one or more fingers expresses the counted number, while the other fingers are kept curled, while for the Ongota it is the curling of one or more fingers which expresses the counted number. For example, among the Dhaasanac 1. is expressed extending the forefinger and keeping the other fingers curled; for 2. the forefinger and the middle finger are extended, and so on.

naxani 'yesterday':

(129) *kata naxani ka=gáʕi* 'yesterday I ran'
I yesterday 1S-run.PST

burinki 'this morning':

(130) *burinki ka=málal baram ka=danʃád*
this_morning 1S-be_tired.PST tomorrow 1S.work.NPST
'this morning I was tired, I will work tomorrow'

wuuni 'today':

(131) *wuuni ka=róo* 'I went today'
today 1S-go.PST

a*yke* 'now':

(132) *ayke ka=róota* 'I am going now'
now 1S-go.PROG

qarra 'before':

(133) *qarra ku=bóʕi=ba ayke cárqamuni*
before 3S.F-be_fresh.PST-and now green
'before it was fresh and now is yellow'

sidda 'before':

(134) *juuka=ko sidda abba ayke ʕádala*
girl-DET before nice now ugly
'the girl before was nice, now she is ugly'

kolba 'again' has been found only in the sentence:

(135) *ayma ka=išéeni=ba kolba ka=ħáabini*
woman 1S-bring.PROG-and again 1S-want.PROG
'I have a woman and I want another one'

Adverbs of quantity and intensity

ekkete 'much':

(136) *ekkete caká* 'eat a lot!'
much eat.IMPV.S

(137) *ekkete riirá* 'scream loudly'
much scream.IMPV.S

iccama 'a little bit; slowly':

(138) *iccama caká* 'eat a little!'
little eat.IMPV.S

(139) *iccama rootá* 'go slowly!'
little go.IMPV.S

The adjective *abba* 'good' is used as an adverb with the meaning 'well, properly':

(140) *kita cata abba ki=ǧáďi* 'he is cutting the meat properly'
he meat good 3S.M-cut.PROG

The following adverbial phrases have been noted:

qane qane 'sometimes' and *qane baďďe* 'always' (Lit. "all day". A calque of Ts *qane xumbi*. Cfr. Amh *k'ʌn* 'day').

(141) *qane baďďe kara ka=cákini* 'I am always eating fish'
day all fish 1S-eat.PROG

kanna kanna 'quickly' (Ts *kanna kanna*):

(142) *kanna kanna ki=róota* 'he is going quickly'
quickly 3S.M-go.PROG

3.9. Verbs. The following categories find expression in verbal inflection:
— tense: Past (: PST), Non-Past (: NPST);
— aspect: unmarked vs. Progressive (: PROG);
— mood: Main, Imperative (: IMPV), Jussive, Verbal Noun or Infinitive (: INF);
— polarity: Positive vs. Negative (the latter tagged NEG).

It will be noted that the person, number, and gender of the subject of the sentence is not indexed on the verb itself, although a few verbs use different stems for Singular and Plural Subjects and/or Objects. Other categories find their expression in verbal derivation; the simplest form of a stem, both morphologically and semantically, is the Basic stem. From a Basic stem one or more derived stems are derived through suffixation.

Inflection may be suffixal or suprasegmental (tonal); derivation is exclusively suffixal.[11]

[11] It is difficult to decide whether the extreme reduction in inflectional categories expressed on the verb is exclusively a function of the obsolescence of the language; other Cushitic languages, all of them spoken in close contact with non-Cushitic languages, show similar, although perhaps not so radical, reduction: Dhaasanac, Elmolo, and Yaaku are the most evident examples. But two

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3.9.1. Basic stems. In the following discussion and in the Lexicon, verbs will be given under their stem forms, which never surface as such; for most verbs the stem is actually identical to the form found in the Past and Non-Past, but without accent (cf. 3.9.3); this is also the form to which suffixes (both derivational and inflectional) are added. This applies to the consonant-ending verbs, which are the vast majority of all verbs. Among the consonant-ending verbs, most are monosyllabic and have the shape CV(V)C; a minority are bi- and pluri-syllabic.

A good number of verbs are vowel-ending; the final vowel is *-i* in the tensed forms, but *-e* before the inflectional suffixes. Finally, no final vowel is generally found before the derivational suffixes. For example, one finds the following forms:

Past:	*ka=múxi*	'I laughed'
Non-Past:	*ka=muxí*	'I laugh, will laugh'
but		
Imperative Singular:	*muxé*	'laugh!'
Imperative Plural:	*muxéta*	'laugh! (P)
and		
Causative, Past:	*ka=múxsan*	'I made laugh'

Considering that only */e/* or Ø are found before suffixes, and taking into account Final Height Neutralization (cf. 2.3.1), it is possible to consider these verbs as ending in *-e* in their stem-form. As shown above, both */i/* and */e/* appear word-finally; now, while it is tempting to hypothesize that a final accented */e/* avoids raising, thereby accounting for, for example, the Past *ka=múxi* 'I laughed' vs. the Imperative Singular *muxé* 'laugh!', this would leave unexplained the Non-Past *ka=muxí* 'I laugh, will laugh'. It is tentatively assumed here that */e/* is the final stem-vowel and that raising to */i/* is morphologically determined; all the basic vowel-ending verbs are therefore reported with a final */e/* in the following discussion and in the Lexicon. A few examples are: *aame-*'to rest', *ame-*'to suck', *ee-*'to come', *išee-*'to bring', *ʕebeʃe-*'to vomit', *baʃce-*'to carry on the back', *beʔe-*'to give', *berre-*'to touch', *boye-*'to cry', *goxe-*'to put out', *mayye-*'to kiss', *muxe-*'to laugh'

3.9.1.1. Plural stems. A few verbs have different stems for Singular and Plural Subject and/or Object. These verbs are the following:

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of these (Elmolo and Yaaku) were recorded in their terminal stages, too. Derivation has been on the whole more resistant to decay than inflection.

Singular stem	Plural stem		
ʃay-	*baʃat-*	'to run'	Cfr. Ts *sor* (S), *baʃad* (P)
xoʔ-	*kuše-*	'to hit'	
ʃad-	*qits-*	'to cut'	Cfr. Ts *qits*
?	*xot-*	'to put down'	
ʃehe-	*aame-*	'to stop (intr.)'	
dat-	?	'to make fall'	
kat-	*foof-*	'to leave'	
reex-	?	'to go down'	

(143) *kita ħanca kí=ʃad* 'he'll cut the tree'
he tree 3S.M-cut.NPST

(144) *kiʔita ħanca kiʔa=qits* 'they'll cut the tree'
they tree 3P-cut.P.NPST

Other verbs seem to be used only with plural subjects, without a corresponding singular stem.

—	*ħadi-*	'to collect, pick up'
—	*hokam-*	'to exchange'

3.9.2. Derived stems. The productive derivational system consists of a Causative (CAUS) extension and of a Reflexive-Middle (MID) extension (whose productivity is unclear).

3.9.2.1. Causative. The most common extension is *-san*; possibly this was, at least originally, a compound Causative-Passive extension, since a scarcely productive extension *-am* is found with an Intransitive meaning (cf. 3.9.2.3).

The Causative in *-san* is completely productive. Basic vowel-ending verbs (cf. 3.9.1) delete their final *-e* before the extension.

Basic Stem		Causative	
coq-	'to hit'	*coqsan-*	'to make hit'
caʃaw-	'to drink'	*caʃawsan-*	'to make drink'
lool-	'to be angry'	*loolsan-*	'to make angry'
muxe-	'to laugh'	*muxsan-*	'to make laugh'

A second Causative derivation, apparently of less productivity, is *=is*. This is the same suffix used in Ts, and is frequent with Ts loans, but not limited to them.

Basic Stem		Causative	
baʃat-	'to run' (P subj.)	*baʃtis-*	'to make run' (P subj.)
gutal-	'to jump, dance, sing'	*gutalis-*	'to make jump, dance, sing'
ʃoh-	'to grow' (from Ts)	*ʃohis-*	'to make grow'
kox-	'to leak'	*koxis-*	'to make leak'

In a few cases, both *-san* and *-is* have been recorded, with apparently no difference in meaning:

Basic Stem		*-is* Causative	*-san* Causative	
magʃ-	'to take another road'	*magʃis-*	*magʃsan-*	'to cause to take..
morom-	'to speak'	*moromis=*	*moromsan-*	'to make speak'
sal-	'to wait' (from Ts)	*salis-*	*salsan-*	'to make wait'
tiid-	'to put, store'	*tiid-is-/-as-*	*tiidsan-*	'to make put'

A few verbs have, possibly as a variant of *-is*, a Causative extension *-as* (or *-aš*, very possibly a variant of *-as*):

Basic Stem		Causative	
ucce-	'to pour, fill' (from Ts)	*uccaš-*	'to make pour'
ʕad-	'to lick'	*ʕadas-*	'to make lick'
diig-	'to pour' (from Ts)	*diigas-*	'to make pour'

Finally, the following shows a Causative *-os*, apparently borrowed from a Dullay variety other than Ts together with the Basic stem:

Basic Stem		Causative	
daggab-	'to arrive'	*daggabos-*	'to make arrive'

3.9.2.2. Middle. The usual Cushitic Reflexive-Middle (or Auto-benefactive) extension is found in O with the unusual shape *-iʔ*, which has been recorded for a substantial number of verbs.

Basic Stem		Middle	
boš-	'to pick up, collect'	*bošiʔ-*	'to pick up for o.s.'
coq-	'to spear, sting'	*coqiʔ-*	'to spear for o.s.'
ɠad-	'to cut'	*ɠadiʔ-*	'to cut for o.s.'
ɠes-	'to shave'	*ɠesiʔ-*	'to shave o.s.'
hobat-	'to wash'	*hobatiʔ-*	'to wash o.s.'

In *filiʔ-*'to comb', the Middle extension has been added to a loan verb (Ts *fil*) without a Basic correspondent. Other verbs, such as *ɠoiʔ-*'to take, get' and *ʕiqqišiʔ-* 'to sneeze', are found only in their Middle forms without a Basic stem.

3.9.2.3. Intransitive. An Intransitive extension in *-am* has been recorded for a few verbs. It is evidently connected to the Passive East Cushitic extension of the same form, and, as anticipated, could be the origin of the common Causative extension *-san*.

Basic Stem		Intransitive	
bul-	'to pull out'	*bulam-*	'to be pulled out'
lax-	'to mix' (tr.)	*laxam-*	'to mix' (intr.)
šud-	'to cover, dress' (Ts)	*šudam-*	'to wear'
xot-	'to put down'	*xotam-*	'to go down'

At least the following has an irregular double Intransitive extension *-mam*.

Basic Stem		Intransitive	
caq-	'to hide'	*caqmam-*	'to hide oneself'

A few Intransitive-extended verbs have been recorded without a corresponding Basic stem, such as *ʔifam-*'to marry', *hokam-*'to exchange (P. subj.; from Ts). Maybe also *morom-*'to speak' belongs here.

The opposition between a Basic transitive stem and its Intransitive derivate may be seen in the following sentences:

(145) *kuta eefi=na caʕáw ella=ki ku=láx*
she milk-and water together-to 3S.F-mix.PST
'she mixed the milk with water'

(146) *eefi=na caʕáw ella=ki ku=láxam*
milk-and water together-to 3S.F-mix.INTR.PST
'the milk mixed with water'

The complete series of (regular) derivational possibilities is illustrated, for example, in the following:

Basic Stem		Middle	Intransitive	Causative
bul-	'to pull out'	*buliʔ-*	*bulam-*	*bulsan-*
diig-	'to pour into' (from Ts)	*diigiʔ-*	*diigam-*	*diigas-*

3.9.2.4. Frozen derivational extensions? A few verbs appear with a dental ending in their Basic stem; while for a few of them a Ts origin is evident, this is not always the case. They can act as the base of further, "true" derivation:

Basic Stem	
ʕangat-	'to mix' (tr.)
hobat-	'to wash'
nabad-	'to hate' (from Ts)
noqot-	'to look, aim at' (from Ts)

3.9.3. Tense. A twofold opposition Past vs. Non-Past is found. The Non-Past is used for an incomplete action, either present or future. The Past tense is marked by tone on the first (or only) mora of the verbal form. If the verb stem is a long monosyllabic one (CVVC), the sequence High-Low yields a falling tone. The Non-

Past tense is marked by absence of tone on the mora of the stem if this is monomoraic (CVC). In this case, the Subject Clitic gets High tone; a certain amount of non-phonological lengthening of the stem vowel is occasionally heard.

(147) a. *(kata) ka=búɗ* '(me,) I spat'
I 1S-spit.PST

b. *(kata) ká=buɗ [buːɗ̥]* '(me,) I'll spit'
I 1S-spit.NPST

(148) a. *ka=cíg* 'I sewed'
1S-sew.PST

b. *ká=cig* 'I'll sew'
1S-sew.NPST

(149) a. *ka=cóq* 'I hit'
1S-hit.PST

b. *ká=coq* 'I'll hit'
1S-hit.NPST

(150) a. *tampo ka=súg* 'I sniffed tobacco'
tobacco 1S-sniff.PST

b. *tampo ká=sug* 'I'll sniff tobacco'
tobacco 1S-sniff.NPST

(151) a. *ka=ħéd* 'I tied'
1S-tie.PST

b. *ká=ħed* 'I'll tie'
1S-tie.NPST

If the verb is at least bimoraic, the verbal form gets a Tone on the last mora and the Subject Clitic does not get High tone. If the stem is a long monosyllabic one (CVVC), the sequence Low-High yields a rising tone.

(152) a. *ka=xáab* [xáàb̥] 'I scratched'
1S-scratch.PST

b. *ka=xaáb* [xàáb̥] 'I'll scratch'
1S-scratch.NPST

(153) a. *ka=zíi?* 'I farted'
1S-fart.PST

b. *ka=zii?* 'I'll fart'
1S-fart.NPST

If the stem is bi- or pluri-syllabic the Non-Past has High tone on the last mora.

(154) a. *naxani ju=íški* 'we played yesterday'
yesterday 1P-play.PST

b. *barám ju=iškí* 'we'll play tomorrow'
tomorrow 1P-play.NPST

(155) a. *kata ka=ʃíkkiši* 'I sneezed'
I 1S-sneeze.PST

b. *kata ka=ʃikkiší* 'I'll sneeze'
I 1S-sneeze.NPST

Native verbs and loans do not differ in their treatment, as shown by the following verbs from Ts.

(156) a. *ka=géʃ* 'I belched'
1S-belch.PST

b. *ká=geʃ* 'I'll belch'
1S-belch.NPST

(157) a. *ka=gúfaʃ* 'I coughed'
1S-cough.PST

b. *ka=gufáʃ* 'I'll cough'
1S-cough.NPST

3.9.4. Aspect. An on-going action is expressed through the Progressive ending *-i/-ni*. The verb receives the accent on the first vowel. Verb stems ending in a consonant (cf. 3.9.1) add *-i*; verbs ending in a vowel add *-ni*. Compare the following sentences.

(158) a. *barám kata ka=dangád* 'tomorrow I'll work'
tomorrow I 1S-work.NPST

b. *inta gúlbata=mi ki=dángadi* 'the man is working hard'
man strength-with 3S.M-work.PROG

(159) a. *naxani narfe=me ka=cíg* 'yesterday I sewed with the needle'
yesterday needle-with 1S-sew.PST

b. *barám narfe=me ká=cig* 'I'll sew with the needle tomorrow'
tomorrow needle-with 1S-sew.NPST

c. *ayki narfe=me ka=cígi* 'I am sewing with the needle now'
now needle-with 1S-sew.PROG

(160) a. *naxani kata kara ka=qáfi* 'yesterday I fished'
yesterday I fish 1S-catch.PST

b. *barám kata kara ka=qafí* 'I'll fish tomorrow'
tomorrow I fish 1S-catch.NPST

c. *ayki kara ka=qáfini* 'I am fishing now'
now fish 1S-catch.PROG

(161) a. *naxani kata ka=hóbi* 'yesterday I washed'
yesterday I 1S-wash.PST

b. *barám kata ka=hobí* 'I'll wash tomorrow'
tomorrow I 1S-wash.NPST

c. *kata ka=hóbini* 'I am washing'
I 1S-wash.PROG

(162) a. *naxani na i [ne]= xá* 'what did you do yesterday?'
yesterday what 2S do.PST

b. *barám na í=xa* [= néχa] 'what will you do tomorrow?'
tomorrow what 2S-do.NPST

c. *ayki na i [ne]= xáni* 'what are you doing now?'
now what 2S do.PROG

The verb *roo*-'to go' has an irregular Progressive in *-ta*.

(163) *caʕáw=ki ka=róota* 'I am going to the river'
river-to 1S-go.PROG

The Progressive may be used for an on-going action in the present or in the past.

(164) *caʕáw=to ka=éeni* 'I am coming from the river'
river-from 1S-come.PROG

(165) *naxani ka=áxay=ba ka=qáfini=ba ku=gírib*
yesterday 1S-get_up.PST-and 1S-catch.PROG-and 3S.F-be_night.PST
'yesterday I woke up and spent the day fishing until it became night'

(166) *kita ki=éeni na=tu kata ka=yób*
he 3S.M-come.PROG what-from I 1S-see.PST
'I saw him as he was coming from over there'

(167) *kita ki=éeni na=tu juta ju=yób*
he 3S.M-come.PROG what-from we 1P-see.PST
'we saw him as he was coming from over there'

(168) *caʕáw=ki ki=róota na=tu kata ka=yób*
water-to 3S.M-go.PROG him-from I 1S-see.PST
'I saw him as he was going (there) to the river'

3.9.5. Negative paradigms. For both the Past and the Non-Past a single Negative form is used, marked on the verb by a suffix *-ʔi* and by a negative marker *ma* (both glossed NEG) preceding the verbal form.

(169) *barama kata ka=ma=éeni-ʔi* 'I won't come tomorrow'
tomorrow I 1S-NEG-come.PROG-NEG

(170) *kata ku=mi ka=ma=móromi-ʔi* 'I don't speak with her'
I 3S.F-with 1S-NEG-speak-NEG

3.9.6. Imperative. The Positive Imperative (: IMPV) Singular of consonant-ending verbs (cf. 3.9.1) is marked by final High-toned *-á*; the Plural by *-ʔta*.

(171) *buɗá* 'spit!' *búɗta* 'spit (P)!'
spit.IMPV.S spit.IMPV.P

(172) *gufaʕá* 'cough!' *gufáʕta* 'cough! (P)'
cough.IMPV.S cough.IMPV.P

Vowel-ending stems (cf. 3.9.1) end in their Imperative Singular in High-toned *-é*, while for the Plural the same *-ʔta* ending of all other verbs is used.

(173) *muxé* 'laugh!' *muxéta* 'laugh (P)!'
laugh.IMPV.S laugh.IMPV.P

3.9.6.1. Irregular imperatives. The Imperative of *roo-* 'to go' is built from the irregular Progressive (cf. 3.8.3) *róota*: S *rootá*, P *róotta*. The verb *xaʔ-* 'to do' extends its stem in the Imperative: S *xaašá*, P *xáašta*. As in many Ethiopian languages, the verb *ee-*'to come' has a suppletive Imperative: S *háy*, P *háyta*.

3.9.6.2. Negative imperative. The Negative Imperative uses the special Negative element *intima* (composed with *ma*?).

(174) *intima qáfi* 'don't fish!' *intima gida qáfi* 'don't (P) fish!'
NEG fish NEG 2P fish

3.9.7. Jussive. A separate Jussive form has been found for the 1st Plural only and is built with the suffix *-ítu* (after consonant) or *-tu* (after vowel; but a few irregular forms have been found).

(175)	*axay-*	*axáytu*	'let's stand up!'	
	boye-	*bóytu*	'let's cry!'	
	caʃaw-	*caʃawítu*	'let's drink'	
	jiʔ-	*jíʔtu*	'let's kill!'	(note the idiom *cáxma jíʔtu* 'let's eat!' ["let's kill meat!"]
	faʔ -	*faʔítu*	'let's kindle!'	
	ɠad-	*ɠadítu*	'let's cut!'	
	muxe-	*muxítu*	'let's laugh!'	
	roo-	*róoytu*	'let's go!'	
	tagam-	*tagamítu*	'let's sleep!'	
	tiid-	*tiidítu*	'let's put!'	
	tsuɠ-	*tsuɠítu*	'let's lie down!'	
	yaw-	*yawítu*	'let's stop!'	
	yawsan-	*yawsanítu*	'let's make stop!'	

3.9.8. Infinitive. Verbs in the basic stem, both monosyllabic and bisyllabic, make their Infinitive with the suffix *-Co* (where *C* is the last stem consonant); the accent falls on the first syllable. The Infinitive is used in object and subject clauses (cf. 4.8).

(176) *kata kara šúbbo ka=ħáabini* 'I want to kill fish'
I fish kill.INF 1S-want.PROG

(177) *rotto ka=ħáabini* 'I want to go'
go.INF 1S-want.PROG

(178) *jami xóʔʔo ka=ħáabini* 'I want to hit you'
you.OBJ hit.INF 1S-want.PROG

(179) *caʃáw báʔco ka=ħáabini* 'I want to carry water (on the back)'
water carry.INF 1S-want.PROG

(180) *laalbe šúdammo ka=ħáabini* 'I want to put on the dress'
dress wear.INF 1S-want.PROG

(181) *oxoni ɠúyyo ka=ħáabini* 'I want to kindle the fire'
fire kindle.INF 1S-want.PROG

(182) *kata tágammo ka=ħáabini* 'I want to sleep'
I sleep.INF 1S-want.PROG

(183) *kuta šuʔuna šúgucco ku=ħáabini* 'she wants to smear butter'
she butter smear.INF 3S.F-want.PROG

(184) *kata ʕikkišaɗɗo ka=ħáabini* 'I want to sneeze'
I sneeze.INF 1S-want.PROG

(185) *kata jan=tu bine fíllo ka=ħáabini* 'I want to comb you'
I you.OBJ-from head comb.INF 1S-want.PROG

(186) *inta wora=ki gíššo ki=ħáabini* 'the man wants to enter the house'
man house-to enter.INF 3S.M-stop.PROG

Vowel-ending stems have a suffix *-le*; again, the accent falls on the first syllable.

(187) *bóyele ka=ħáabini* 'I want to cry'
cry.INF 1S-want.PROG

(188) *qáaɗile ka=ħáabini* 'I want to lie down'
lie_down.INF 1S-want.PROG

(189) *šóxele ka=ħáabini* 'I want to have sex'
have_sex.INF 1S-want.PROG

(190) *gidata kúšile ka=ħáabini* 'I want to hit you (P)'
you.P.OBJ hit.INF 1S-want.PROG

3.9.9. 'to have'. "to have" is expressed by the construction "from me X is", widely found in Ethiopian languages. It has a parallel also in Ts.

(191) a. *ka=tu darbo ku=ida* 'I have a skin'
me-from skin 3S.F-there_is

b. Ts:
eeta ɗoolte ʕagay
to-me skin there_is

(192) a. *gida=tu darbo ku=ida* 'you (P) have a skin'
you(P)-from skin 3S.F-there_is

b. Ts:
ineta ɗoollo ʕagay
to-you (P) skin there_is

The negative form employs the negative of *ba* 'to be', which is a borrowing from Ts.

(193) a. *ka=tu ba* 'I do not have'
me-from not_be

b. Ts:
eta ba
to-me not_be

'to have' is also expressed through the Progressive form of the verb *išee-* 'to bring'.

(194) *kata ayma ka=išeeni* 'I have a woman'
I woman 1S-bring.PROG

(195) *kita ɦugu ki=išeeni* 'he is itching'
he itching 3S.M-bring.PROG

(196) *kata bor=mi jata ka=išeeni* 'I remember you'
I stomach-with you 1S-bring.PROG ("I bring you in the stomach")

(197) *inta iifa ki=ma=išeeni* 'a man who has no mouth'
man mouth 3S.M-NEG-bring.PROG (i.e. a dumb man)

4. Syntax

O is an SOV, dependent-marking language. The verb is the last element of a sentence, but a pronominal object often follows the verbal form (v. 4.3.2).

4.1. Noun Phrases. The Noun is the first element of the phrase; a Possessive immediately follows the head, but the relative order of other modifiers is apparently free.

(198) *wura sinni lama* 'my two houses'
house my two

(199) *wura sinni lama giddeʕeta* 'my two big houses'
house my two big.P

but:

(200) *wura sinni minʕeta lama* 'my two little houses'
house my little.P two

(201) *ayma=ko maar ku=ma=xódi(=ʔi)*
woman-DET child 3S.F-NEG-generate.PST(-NEG)
'a woman who did not gave birth to a child'

4.2. Genitival phrases. The Possessed precedes the Possessor; in closed, possibly frozen, expressions, no element intervenes.

(202) *íifa ʕongota* 'the Ongota language ["mouth"]'
mouth O.

Generally, the Possessor is further followed by an element *=te*:

(203) *iiʔa inta=te* 'the man's hand'
hand man-?

(204) *cawo inta=te* 'the man's gun'
gun man-?

(205) *wura inta=te/ayma=te/yooba=te* 'the man's, woman's, people's house'
house man-?, woman-?, people-?

(206) *ippa wura=te* 'the door of the house'
door house-?

The possessed may be followed by *se*, glossed 'of', which is also found in the Possessive pronominal elements. Its use is sporadic; it could also result from the transfer into O of the common Ts Determinative or connector *-se*.

(207) *ii?a se inta=te* 'the man's hand'
hand of man-?

Frequently the first element is followed by the Determiners *=ko* or *=nki*.

(208) *ii?a se inta=nki=te* 'the man's hand'
hand of man-DET-?

A reverse Possessor-Possessed is possible but, apparently, less used. In this case, the Possessor precedes, followed by the eventual Determiners and the case-marker *=tu* 'from'; the Possessed is, in its turn, followed by the Possessive pronominal referring to the Possessor following the possessed.

(209) *inta=nki tu ii?a seena* 'the man's hand'
man-DET from hand his ("from the man, his hand")

(210) *ayma=nki tu ii?a suu?u* 'the woman's hand'
woman-DET from hand her ("from the woman, her hand")

This order is instead normal when further modifiers are present.

(211) *wura sinni tu ippa* 'the door of my house'
house my from door ("from my house, the door")

(212) *wura ayma=ko tu ippa* 'the door of the woman's house'
house woman-DET from door ("from the woman's house, the door")

4.3. Sentences. Although verbs are the prototypical predicates, also nouns, adjectives, possessives, and numerals may act as predicates in nominal sentences (see 4.6).

4.3.1. Subjects. A nominal subject is normally found in sentence-initial position; there are reasons to believe that such nouns do not act as the syntactic subjects of the sentence, a function which is rather filled by a Subject Clitic; only the presence of a Subject Clitic is mandatory for any declarative clause, while a noun may

appear in the first position in the clause or also (possibly as a right-dislocated topic?) at the end, or may be altogether absent.

4.3.2. Objects. The only element that can intervene between the Subject Clitic and the Verb is the Negative marker *ma*. An Object Pronoun can take the position of a corresponding object noun before the Subject Clitic.

(213) *kata uke ka=jíʔ* 'I shot an elephant'
I elephant 1S-shoot.PST

and:

(214) *kata ki ka=jíʔ* 'I shot him'
I 3S.M 1S-shoot.PST

Sentence (214) above may be analyzed as having the structure:

$[\text{kata}]_{\text{Top}}$ $[[\text{uke}]_{\text{O}}$ $[[\text{ka}]_{\text{S}}$ $[\text{jíʔ}]_{\text{V}}]_{\text{VC}}]_{\text{S}}$
I elephant 1S shoot.PST

More commonly, an Object Pronoun is affixed after the verbal form. It can also be introduced with an Emphatic Pronoun or repeated after the verb.

(215) *kita cata ki=ǧáʕ* 'he bit the meat'
he meat 3S.M-bite.PST

vs.

(216) *gabare ki=ǧáʕ=ki* 'a snake bit him'
snake 3S.M-bite.PST-him

An indirect object precedes the direct object.

(217) *šiggi=tu maara xódi* 'a boy was born to us'
us-to boy generate.PST

4.3.3. Passive (Impersonal construction). A passive construction is expressed through the use of the Impersonal Subject Pronoun *a* (ISP); the object follows the verbal form:

(218) (*kata*) *a=xódi=ka* 'I was born' ("me, they generated me")
I ISP-generate.PST-me

(219) (*janta*) *a=xódi=jámi* 'you (S) were born'
you ISP-generate.PST-you

(220) (*kita*) *a=xódi=ki* 'he was born'
he ISP-generate.PST-him

(221) (*kuta*) *a=xódi=ku* 'she was born'
she ISP-generate.PST-her

(222) (*juta*) *a=xódi=ju* 'we were born'
we ISP-generate.PST-us

(223) (*gidata*) *a=xódi=gita* 'you (P) were born'
you ISP-generate.PST-you.OBJ

(224) (*ki?ita*) *a=xódi=ki?i* 'they were born'
they ISP-generate.PST-them

The Negative Paradigm involves the (optional?) use of the Negative particle *ma* (NEG), which is often missing, and, obligatorily, of the suffix *=?i* at the end of the verbal form:

(225) (*kata*) *a=(ma) xódi=ka=?i* 'I was not born'
I ISP-(NEG) generate.PST-me-NEG

(226) (*janta*) *a=(ma) xódi=jámi=?i* 'you (S) were not born'
you ISP-(NEG) generate.PST-you-NEG

4.3.4. Reciprocal and Reflexive. Both a Reciprocal and a Reflexive are expressed through the use of *ella* or *elella* 'self' and 'together' (from Ts) and the clitic *=na* 'and' after the first element:

(227) *ka=na jami ju=šúb ella* '1S-and 2S 1P-kill.PST self' 'we (me and you) killed each other'

(228) *ki=jí? ella* '3S.M-kill.PST self' 'he killed himself'

(229) *ka=ǧád ella* '1S-cut.PST self' 'I cut myself'

(230) *juta elella ju=éeni* 'we together 1P-come.PROG' 'we come together'

Followed by a postposition:

(231) *caʕáw=na eefi ella=ki reekisá* 'water-and milk self-in mix.IMPV.S' 'mix milk with water!'

4.4. Questions

4.4.1. Content questions. Content questions ("Wh-questions") do not have fronting of the question word. When the question word is subject of the sentence, no Subject Clitic is found, a fact that can be assumed to imply that the question word is always focalized.

haka 'who?':

(232) *haka ée* 'who came?'
who come.PST

Note the following idiom:

(233) *meša=ko siidu haka* 'what's your name?'
name-DET your.S who

sae 'whose?':

(234) *wura=nki sae* 'whose is the house?'
house-DET whose

A possible elliptical answer is:

(235) *se ayma=te* 'It is the woman's'
of woman-of

na 'what?':

(236) *na ki=xá* 'what did he do?'
what 3S.M-happen.PST

haw= 'where?':

The element *haw=* 'where' is always followed by a postposition:

(237) *haw=ki i=áskam* 'where did you go?'
where-to 2S-go.PST

(238) *haw=tu i=éeni* 'where are you coming from?'
where-from 2S-come.PROG

bari 'when?':

(239) *bari i=ée* 'when did you come?'
when 2S-come.PST

ayta 'which?':

(240) *cawo ayta i=ħéeni* 'which gun do you like?'
gun which 2S-like.PROG

miʔa 'how much/many?':

(241) *kara miʔa i=jíʔ* 'how many fish did you catch?'
fish how-many 2S-catch.PST

na=ku 'why?' ("what-for"):

(242) *na=ku i=éeni* 'why are you coming?'
what-for 2S-come.PROG

ašana 'how?':

(243) *ašana ki=ɗángat* 'how did he do it?'
how 3S.M-do.PST

4.4.2. Polar questions. Polar questions are marked by a final *=ʔí* (INT) on the verb and by a rising intonational contour.

(244) *janta naxani kara i=qáfi=ʔí* 'did you go fishing yesterday?'
you yesterday fish 2S-fish.PST-INT

When the question relates to the subject of the sentence, no Subject Clitic is present on the verb; as in the case of content question words (cf. 4.4.1), it can be assumed that this is because a questioned nominal is inherently focused.

(245) *mole=mu aburre ée* 'was it Mole or Aburre who came?'
M.-or A. come.PST

4.4.3. Greetings

(246) a. *ášana i=tag* 'how did you sleep?'
how 2S-sleep.PST

b. *janta nágayko tág=í* 'did you sleep in peace?'
you peace sleep.PST-INT

answer:

(247) *abba ka=tág* 'I slept well'
good 1S-sleep.PST

or simply *nágayko* 'peace' (from Ts).

4.5. Direct speech. The quoted speech follows the main clause.

(248) *kita ku=tu ki=gísi=na caʕáw laxá*
he her-to 3S.M-tell.PROG-and water mix.IMPV.S
'he told her: "mix the water!"'

4.6. Nominal sentences. In nominal sentences no verb appears and the role of predicate is fulfilled by an adjective or a noun, introduced by a Subject Clitic. Absence of the latter is found in focalized nominal sentences (see 4.11), in which

the subject noun (or an Emphatic pronoun) is followed directly by the nominal predicate.

(249) *kata munnuʕuni* 'I am small'
I small

In negative nominal sentences the usual negative markers *ma* and *=ʔi* (affixed to the noun or adjective in predicative position) appear. *ʔi* and *ma* can also both follow the predicate.

(250) a. *kata gaddaʕuni ʔi=ma* 'I am not big'
I big NEG-NEG

b. *kata ma gaddaʕuni=ʔi* 'I am not big'
I NEG big-NEG

(251) *kata gaddaʕuni ʔi=ma munnuʕuni* 'I am not big, I am small'
I big NEG-NEG small

(252) *ayma sinni wura=tu* 'my wife is at home'
woman my house-from

For the past, the verb *ida* 'to be' is used.

(253) *ayma sinni wura=tu ku=ída* 'my wife was at home'
woman my house-from 3S.F-be_there.PST

(254) *kata ʕongotitta* 'I am *Ongota*'
I O.SING

(255) *kiʔita ʕongota* 'they are *Ongota*'
they O.

(256) a. *kata ʕongota=ʔi* 'I am not *Ongota*'
I O.-NEG

b. *kata ʕongotitta=ʔi* 'I am not *Ongota*'
I O.SING-NEG

(257) *wura=ko áddate giddeʕeta lámbano ku sinni*
house-DET there big.P two 3S.F my
'those two big houses are mine'

4.7. Relative clauses. The following rules apply:
— relative clauses precede the matrix clause;
— the end of the clause is marked by the Indirect Clitics of third person *=na* 'him' if its head is masculine, and *=ta* 'her' if feminine (cf. 3.3.4).

— the relative verb is generally not preceded by a Subject Clitic; this is especially the case when the subject of the relative is also the subject of the main clause.

(258) *naxani inta=nki áddate kara qáfini=na aza sinni*
yesterday man-DET there fish fish.PROG-him sibling my
'that man who yesterday caught the fish is my brother'

(259) *inta kara qáfini=na ka=yób*
man fish fish.PROG-him 1S-see.PST
'I saw the man who caught the fish'

(260) *ayma=ko janta ifan=ta ka=tsíini*
woman-DET you marry.PST-her 1S-know.PROG
'I know the woman you married'

(261) *ayma=ko kita ífan=ta ka=tsíini*
woman-DET he marry.PST-her 1S-know.PROG
'I know the woman he married'

(262) *ayma maara xódi=ta aza sinni*
woman child generate.PST-her sibling my
'the woman who gave birth to a child is my sister'

(263) *ayma=ko janta ifan=ta maara ku=xódi*
woman-DET you marry.PST-her child 3S.F-generate.PST
'the woman you married gave birth to a child'

The presence of the Object Clitic representing the head is excluded if the relative clause contains an Object Clitic.

(264) *inta kimiša cák=ta ki=tíb*
man crocodile eat.PST-her 3S.M-die.PST
'a man who eats a crocodile dies' (crocodile is feminine)

not: **inta kimiša cák=ta=na ki=tíb*
eat.PST-her-him

(265) *inta kara ji=ta aza sinni*
man fish shoot.PST-her (= it) brother my
'the man who caught fish is my brother'

(266) *inta=ko burinki caʕáw=ki ki=róota aza sinni*
man-DET today river-to 3S.M-go.PST brother my
'the man who today went to the river is my brother'

In negative relative clauses:

— the Subject Clitic is present, followed by the Negative marker *ma*, which, evidently, cannot stay alone before the verb;

— the suffixed negative marker *=ʔi* generally does not appear after a relative verb;

— the end of the clause is not marked by *=na* 'him' if its head is masculine, and by *=ta* 'her' if feminine.

(267) *inta cata ki=ma=cák aza sinni*
man meat 3S.M-NEG-eat.PST brother my
'the man who did not eat meat is my brother'

(268) *inta=nki kara ki=ma=jí=ta aza sinni*
man-DET fish 3S.M-NEG-shoot.PST-her (= it) brother my
'the man who did not catch fish is my brother'

(269) *inta ayma ki=ma=ífam aza sinni*
man woman 3S.M-NEG-marry.PST brother my
'the man who didn't marry the woman is my brother'

4.8. Object and subject sentences. The Infinitive (cf. 3.9.8) is used in the object or subject clause, which precedes the matrix clause:[12]

(270) *kata jami šuʔuna=me šúgucco ka=ħáabini*
I you.OBJ butter-with smear.INF 1S-want.PROG
'I want to smear you with butter'

(271) *kata tora=me binta cóqqo ka=ħáabini*
I spear-with animal hit.INF 1S-want.PROG
'I want to hit the animal with the spear'

(272) *wákko kata ka=ma=ħáabini=ʔi* 'I don't want to fall'
fall.INF I 1S-NEG-want-NEG

(273) *múxele abba* 'to laugh is good'
laugh.INF good

4.9. Sentence embedding. The embedded clause always precedes the matrix clause.

(274) *hawki ki=róo ka=ma=tsíi[ni=ʔi]*
where 3S.M-go.PST 1S-NEG-know(.PROG-NEG)
'I don't know where he went'

(275) *haw=to ki=ée ka=ma=tsíi[ni=ʔi]*
where-from 3S.M-come.PST 1S-NEG-know(.PROG-NEG)
'I don't know where he came from'

---

12 Ts also uses this infinitive construction.

(276) *haw=tu ki=éeni ka=ma=tsíi[ni=ʔi]*
where-from 3S.M-come.PROG 1S-NEG-know(.PROG-NEG)
'I don't know where he comes from'

(277) *yooba=ko miʔa ée káta ka=ma=tsíi[ni=ʔi]*
people-DET how-many come.PST I 1S-NEG-know(.PROG-NEG)
'I don't know how many men came'

(278) *báre ki=áskam ka=ma=tsíi[ni=ʔi]*
when 3S.M-go.PST 1S-NEG-know(.PROG-NEG)
'I don't know when he went'

(279) *haka ée ka=ma=tsíi[ni=ʔi]*
who come.PST 1S-NEG-know(.PROG-NEG)
'I don't know who came'

(280) *kata ku=mi mórommo ka=ħáabini*
I 3S.F-with speak.INF 1S-want.PROG
'I want to speak with her'

(281) *kata ku=mi mórommo ka=ma=ħáabini=ʔi*
I 3S.F-with speak.INF 1S-NEG-want.PROG-NEG
'I don't want to speak with her'

(282) *haka i=yób ʕále na=ku* 'tell me whom you saw'
who 2S-see.PST tell.IMPV.S 1S-for

(283) *barama ku éeyo ka=ħáabini* 'I want her to come tomorrow'
tomorrow 3S.F come.INF 1S-want.PROG
(note the irregular Infinitive of *ée* 'to come' with epenthetic /y/)

(284) *na i=yób ʕále na=ku* 'tell me what you saw'
what 2S-see.PST tell.IMPV.S 1S-for

(285) *barama i=róota=na ʕále na=ku*
tomorrow 2S-go.PROG-and tell.IMPV.S 1S-for
'tell me if you are going tomorrow'

Specific sentence-subordinating (or coordinating?) devices are *=na* 'and' and *=ba* 'if' (possibly borrowed from Ts.).

(286) *ayki šera i=ma=náʕ na=ku=na barama tora ka=ma=náʕ=i*
today knife 2S-NEG-give me-for-and tomorrow spear 1S-NEG-give-NEG
'if today you don't give me your knife, tomorrow I won't give my spear'

(287) *kimiša inta ki=ħáʕ=ba ki=ji[=ni]*
crocodile man 3S.M-bite-and 3S.M-kill(.PROG)
'if a crocodile bites a man, it kills (will kill) him'

4.10. Coordination. Sentences are often linked without marking:

(288) *janta rootá ħanca=ko ɠadá* 'go and cut the tree!'
you go.IMPV.S tree-DET cut.IMPV.S

Apart from *=na* 'and' and *=ba* 'if' (cf. 286, 287), a partial list of coordinating elements—all of them clitics—follows here below.

=ʔi 'also'

(289) *kí=ʔi gaddaʕuni* 'he too is big'
3S.M-too big

=ma 'but'

(290) *kata gaddaʕuni=ma kata munnuʕuni* 'I am not big; instead, I am small'
I big-but I big

=mu 'or'

(291) *caʕawa=mu eefi ħáabini* 'do you want water or milk?'
water-or milk want.PROG

4.11. Focus. As far as one can tell from our data, the absence of the Subject Clitics in declarative sentences is a focus-marking device, as shown above in nominal sentences (v. 4.6), and in:

(292) *gabare ɠáʕ ki* 'a snake bit him'
snake bite.PST 3S.M

No specific focus-marking element has been identified, except for the following contrastive-marking repetition of a Subject Clitic.

(293) *ka=ʔi ki=ki=ám* 'not me; *he* was (to do it)!'
I-NEG 3S.M-3S.M-be

As anticipated, the absence of the Subject Clitics in Content and Polar Questions (cf. 4.4.1., 4.4.2) is probably to be explained on the basis of the inherently focalized status of the word on which the question bears.

5. Ongota lexicon

Words are arranged in alphabetical order; vowel-initial words are listed all together at the beginning, followed by /ʕ/-initial words. Ts'amakko and a few other loans are underlined. Verbs are reported under their stem-form; the Imperative Singular and Plural forms are given whenever available.

aaka women; females

aame- to rest
IMPV.S: *aamé*; IMPV.P: *aaméta*

abba good; beautiful; well

abun- to embrace, to lull (Ts)
IMPV.S: *abuná*, IMPV.P: *abúnta*

áddate that (faraway); there

afa eye; *afa axay ka=tu* — 'the eye hurts me' (calque from Ts)

aħ- to lose
IMPV.S: *aħá*; IMPV.P: *áħta*;
CAUS *aħsan* to make lose
IMPV.S: *aħsaná*; IMPV.P: *aħsánta*

aka foot; leg

akka grandfather (both father's father and mother's father)

(ak)kálbano one

akkuyte father's older brother/sister

algas- can, to be able (Ts)

am- to be

ama breast; *ama=to iifa* — nipple ("breast's mouth"; calque from Ts)

amate white sorghum (Ts)

ame- to suck
IMPV.S: *amé*, IMPV.P: *améta*
CAUS *amsan* to make suck
IMPV.S: *amsaná*, IMPV.P: *ansánta*

andulle heron (cf. *bargada*)

ard'o ox

arka hartebeest (Ts)

ármata catarrh, mucous

arrakko; F: *arratte* dark gray (Ts)

árre donkey (Ts)

aryitta friend (Ts)

askam- to go
IMPV.S.: —; IMPV.P: *askánta*

ašana how?

ašawa earring (Ts)

ášinkuni sister's son

áttomuni white

átolla pigeon (Ts *atole*)

áxaco sun

axay- to rise, stand up
IMPV.S: *axayá*; IMPV.P: *axáyta*

ayki now

ayma woman, wife; female (P: *aaka*)

ayta which?

ayyane mother

aza sibling

ázole sp. of edible grass (Ts)

ee- to come (irr. IMPV.: *háy/háyta*); IMPV.NEG: *ínti ma éa* — 'don't come!'

eeda relative (Ts)

eefi milk; tear

eela children

ekkešad- sad, to be (Ts)
IMPV.S: *ekkešadá*

ékkite loud; a lot (Ts)

ella, elella oneself

erangolle necklace of white and red beads (Ts)

ereħa foetus; *ereħa ku=áħ* 'she had a miscarriage'; *kuta ereħa ka=aħsan* 'I make her have a miscarriage'

ereħi?- to become pregnant
IMPV.S: *ereħi?á*, IMPV.P: *ereħí?ta*;
CAUS *ereħsan-* to make pregnant
IMPV.S: *ereħsaná*,
IMPV.P: *ereħsánta*

ereħte P: *ereħiwa* pregnant (a Ts loan?)

íccama (=*ícca=ma* ?) slowly; a little bit; softly; *ícca=ma caká* — 'eat a little bit!'

ifam- to marry
IMPV.S: *ifamá*, IMPV.P: *ifánta*

igire daughters; girls

ii?a arm; hand; finger

iida there is/are

iifa mouth; language; *íifa ʕongota* — the Ongota language; *inta iifa ki ma išéeni* — dumb ("man who doesn't have a mouth")

iila sons; boys

iište neck (cf. also *denge*)

ílaša bushpig (Ts *ilaaša*)

inkena so; this

innakko spider (Ts)

inta man; husband; male (P: *yooba*)
inta akkálbano twenty ('one man'; calque from Ts *qawko mume* 'a whole man')

ippa door

irgaʕa axe (Ts *irgaʕo*)

irmatte termite (Ts *irmatte*)

ista eight

išee- to bring; to have
IMPV.S: *išée*, IMPV.P: *išéeta*

iške- to play
IMPV.S: *išké*, IMPV.P: *iškéta*

išma play (n.)

itima tooth; *itima miintite* incisor (calque from Ts *ilge miinate*)

olla village, settlement

oobde son's daughter (Ts?)

oofe beans (Ts)

oofko son's son (Ts?)

orga SING: *orgitta* Hamar (Ts)

orma tall (Ts)

oršatte rhinoceros (Ts)

ottako calf (Ts)

óxaya lion

oxoni fire

ucce- to pour, fill (Ts)
IMPV.S: *uccé*, IMPV.P: *uccéta* CAUS *uccaš* to make fill
IMPV.S: *uccašá*, IMPV.P: *uccášta*

uke elephant

úkubu sister's husband

ukubu sp. of gray fish with many scales

uppatte amniotic fluid (Ts)

ʕabuya uncle

ʕabuyte grandmother (both father's mother and mother's mother or father's/mother's older sister)

ʕad- to lick
IMPV.S: *ʕadá*, IMPV.P: *ʕádta*
CAUS *ʕadas* to make lick

ʕádaba tongue

ʕádala bad, ugly

ʕadda father's older brother's wife or son (Ts *ʕadda* 'friend, brother')

ʕádiba elder, old man; husband

ʕaħaye bird

ʕálala kind of dove or pigeon (Ts *xalle*)

ʕale Gawwada (and other Dullay-speaking groups of the highlands; Ts)

ʕale- to tell
IMPV.S: *ʕalé*, IMPV.P: *ʕaléta*

ʕangaba big acacia umbrelliphera

ʕangat- to mix
IMPV.S: *ʕangatá*, IMPV.P: *ʕangátta*

ʕango wisdom tooth

ʕar- to stink
IMPV.S: *ʕará*, IMPV.P: *ʕárta*

ʕari coffee (Ts)

ʕázane younger brother (Ts *ʕazo*)

ʕebeʕe- to vomit

ʕiqqiši?- to sneeze
IMPV.S: *ʕiqqiší?a*, IMPV.P: *ʕiqqiší?ta*

ʕiqaɗ- to hiccough (Ts)
IMPV.S: *ʕiqaɗá*, IMPV.P: *ʕiqáɗta*

ʕizza root, vein (Ts *ħezze*)

ʕongóta SING: *ʕongotítta* Ongota (the people and the area); *ʕongót=to* from Ongota

=ba and

baaħante bow (Ts)

baara armpit (Ts *báaro*)

baaxa dirty

baaye father
báaye munnuʕuni father's younger brother ["little father"]

ba?, ba?ate there is not (Ts); neg. of *ida*

baʕatuni poor

baʕce- to carry (on the back)

badio pelican (Ts)

baɗɗe all

bagaye small portable container for water

baɠada back (body part)

baɠat- to run (P subj.)
IMPV.P: *baɠátta*;
CAUS *baɠtis* to make run (P obj.)
IMPV.P: *baɠtísta*

balʕasa face

balgo ostrich (Ts *balgitto*)

balo shrew

bannáɗɗa beetle (Ts)

baq- to die (P stem?)
IMPV.P: *báqta*

baqa excrement

baqas- to divide, share (Ts)

barám, barama tomorrow

bárgada heron (Ts)

bargadde collar-bone (Ts)

bari when?

barla white-browed sparrow weaver (Ts *barlo*)

báyaʕa buffalo

beʔe- to give
IMPV.P: *beʔé*, IMPV.P: *beʔéeta*

beħatto left (Ts)

bera year (Ts *berko*)

berre- to touch (Ts)
IMPV.S: *berré*, IMPV.P: *berréta*

bia land (Ts *bie*)

biħ- to lose
IMPV.S: *ɓiħé*, IMPV.P: *ɓiħéta*
CAUS *biħsan* to cause to lose
IMPV.S: *ɓiħsaná*, IMPV.P: *ɓiħsánta*

biibe- to chase, send away
IMPV.S: *biibé*, IMPV.P: *biibéta*

bine head; hair

binta wild animal

boʕ- to be hard, strong; to be dry

boɗa saliva

bor chest, stomach (Ts *borko*); *kata bor=mi jata ka=išéeni* — 'I remember you' ("I carry/have you in the chest")
IMPV.S: *bor=mi išée*
IMPV.P: *bor=mi išéeta*

boraħo seed (Ts *boraho*)

bositte pubic hair (Ts)

boš- to pick up, collect
IMPV.S: *boošá*, IMPV.P: *bóošta*;
MID *boše* to pick up, collect
IMPV.S: *boošé*, IMPV.P: *boošéta*;
CAUS *bošisan* to make collect

bote wild peas (Ts)

boye- to cry
IMPV.S: *boyé*, IMPV.P: *boyéta*

buʃ- to dry up, become dry
IMPV.S: *ɓuʃá*, IMPV.P: *ɓúʃta*

buɗ- to spit
IMPV.S: *buɗá*, IMPV.P: *búɗta*

buhaɗ- to bark (subj.: dog)

bul- to pull out
IMPV.S: *bulá*, IMPV.P: *búlta*
PASS *bulam* to be pulled out
MID *buli?* to pull out
CAUS *bulsan* to make pull out

burinki today

buusa belly (Hamar *busa* 'lower belly' [Fleming et al. 1992/93: 210]); *buusa=mi ku=iséeni* pregnant ('she has a belly')

buute sp. of snake (Ts)

caʃa (*masc.*) stone; grinding stone (below)

caʃaw- to drink
IMPV.S: *caʃawá*, IMPV.P: *caʃáwta*
CAUS *caʃawšan-* to make drink;
IMPV.S: *caʃawšá*, IMPV.P: *caʃáwšta*

caʃawa water; river; *caʃaw=to ki=šáb* 'he crossed the river'; *caʃaw=to gúskuto ki=zóguy* 'he swam in the river'

cak- to eat
IMPV.S: *caká*, IMPV.P: *cákta*; *bine cáki=ka* 'my head hurts ("eats") me'
CAUS *cakšan-* to make eat
IMPV.S: *cakšaná*, IMPV.P: *cakšánta*

caq- to hide
IMPV.S: *caqá*, IMPV.P: *cáqta*
MID *caqi-* to hide for oneself
IMPV.S: *caqiʔá*, IMPV.P: *caqíʔta*
caqmam- to hide oneself
IMPV.S: *caqmamá*, IMPV.P: *caqmánta*
CAUS *caqšan-* to make hide
IMPV.S: *caqšaná*, IMPV.P: *caqšánta*

carba thin

cárkamuni green

carke dew (Ts)

cata meat

cawo gun, rifle (cf. Ts *qawa*?)

caxtiʔ- to ask
IMPV.S: *caxtiʔá*, IMPV.P: *caxtíʔta*

cayde pen, enclosure (Ts)

ciʕi little stone, pebble (cf. *caʃa*)

cig- to sew
IMPV.S: *cigá*, IMPV.P: *cígta*

cikila elbow (Ts *tsekila*)

cincaqe ant (cf. Ts *shinshalle*?)

coma ten; *coma akkálbano* eleven; *coma lama* twelve; *coma zeha* thirty

comba lung (Ts *somba*)

conqorte mud

coq- to hit, pierce, spear, sting; *káta tóra=me ka=cóq* 'I speared with the spear'; *ka=cóq ba ka=jí* 'I speared and I killed'
IMPV.S: *coqá*, IMPV.P: *cóqta*
coqiʔ- to hit for oneself (w/spear)
IMPV.S: *coqiʔá*, IMPV.P: *coqíʔta*
CAUS *coqšan-* to make hit (w/spear)
IMPV.S: *coqšaná*, IMPV.P: *coqšánta*

corkoto sp. of fish, not eaten

cuutta red-fronted tinkerbird (Ts *suutta*)

daaf- to become blind (Ts)
IMPV.S: *daafá*, IMPV.P: *dáafta*

daafakko F: *daafatte*; P: *daafayke* blind (Ts)

daafis- to make be blind (Ts)
IMPV.S: *daafisá*, IMPV.P: *daafista*

dábarsa genet

dábaša baboon

dabb- to miss the target (Ts)
IMPV.S: *dabbé*, IMPV.P: *dabbéta*

daggab- to arrive (Ts)
IMPV.S: *daggabá*, IMPV.P: *daggábta*
dággabos- to make arrive

dakkakko F: *dakkatte*; P: *dakkayke* deaf; stupid (Ts)

damʕa giraffe (Ts)

dambalaʕitte sp. of snake (Ts *dambalaʕe*)

dangadangaco porcupine (Ts)

danɠaɗ- to plough; to do, make, work
IMPV.S: *danɠaɗá*, IMPV.P: *danɠáɗta*

daqse [daqša] long-crested eagle

darbo skin; hide

dat- to make fall
IMPV.S: *datá*, IMPV.P: —

deela hole

denge neck (Ts; cf. also *iište*)

dibita cat

diga owlet (Ts *ɗige*)

diig- to add water (and other liquids) (Ts); *caʕáw cata=ki ki=diíg* 'he added water to the meat'
IMPV.S: *diigá*, IMPV.P: *ɗiigta*
diigam- to be poured (?)
MID *diigiʔ-* to pour into
IMPV.S: *diigiʔá*, IMPV.P: *diigíʔta*
CAUS *diigas-* to make pour
IMPV.S: *diigasá*, IMPV.P: *diigásta*
cf. also *tuʔ* -'to add (things, one by one, or other liquids)' and *faʔ* 'to add salt (sand, earth)'

diira sp. of small fish, with many spines

dizza klipspringer (Ts)

doʔosa waterbuck (Ts *doʔosko*)

doore sp. of fish

dúbaza mongoose (Ts)

dullaya the Weyt'o river (Ts *dullayko*)

dunko pupil of the eye (Ts)

ɗákkamuni black

ɗay to twist the firesticks
IMPV.S: *ɗáya*, IMPV.P: *ɗáyta*

ɗayte firesticks (together)

ɗeʕse kidney (Ts)

ɗeeša poison; medicine

ɗehaɗ- to reach (someone) (Ts)
IMPV.S: *ɗehaɗá*, IMPV.P: *ɗeháɗta*

ɗehe- to stop (intr.); P stem: *aame-*
IMPV.S: *ɗehé*, IMPV.P: *aaméta*

ɗibba hundred (Dullay)

ɗiim- to plunge (Ts *ɗiim*)
IMPV.S: *ɗiimá*, IMPV.P: *ɗíinta*

ɗonka hornbill (Ts *ɗonke*)

ɗugate truth (Ts)

faʔ- to kindle; to add (salt, sand, earth), to put into; *kita soqo ki=faʔ* 'he added salt'
IMPV.S: *faʔá*, IMPV.P: *fáʔta*
faʔam- to be added
faʔi- to add for oneself
IMPV.S: *faʔiʔá*, IMPV.P: *faʔíʔta*
CAUS *faʔsan-* to make add
IMPV.S: *faʔsaná*, IMPV.P: *faʔsánta*
cf. *diig-* 'to add water (and other liquids)' and *tuʔ-* 'to add (things, one by one)'

faɗ- to put down; IMPV.P: *fáɗta*

fálde [pálde] arrow's point (Ts *pálde*)

farat- to send away
IMPV.S: *faratá*, IMPV.P: *farátta*
CAUS *faratsan-* to cause to send away
IMPV.S: *farsaná*, IMPV.P: *farsánta*

fiʔ- to milk
IMPV.S: *fiʔá*, IMPV.P: *fiʔta*

fidis- to whistle (Ts *fidis*)
IMPV.S: *fidisá*, IMPV.P: *fidista*

filiʔ- to comb (Ts *fil*)
IMPV.S: *filiʔá*, IMPV.P: *filíʔta*

filma comb (Ts)

foof- to leave; to emerge (P. stem)
IMPV.P: *fóofta*
CAUS *foofsan-* to make leave (P. obj.)

foolo cloud (Ts *poolo*)

fuga SING: *fugitta* Amhara

fulfula [pulpula] sacrum *(anat.)*

gaba bush duiker (Ts)

gabare snake

gaddaʕuni P: *giddeʕeta* big; old

gallabdi evening (Ts *gallawʔ*; or areal word?)

game corn (Ts)

garaboko shin (Ts *garaboko*)

gats- to climb; to come out
IMPV.S: *gatsá*, IMPV.P: *gá[t]sta*

gawarsa bateleur (Theratopius ecaudatus; Ts *gawarakko*)

gawšo chin (Ts *gawso*)

geʕ- to belch (Ts)
IMPV.S: *geʕá*, IMPV.P: *géʕta*

geccate P: *geccayke* old (Ts) (not used for S.M)

gereʕ- to steal (Ts)
IMPV.S: *gereʕá*, IMPV.P: *geréʕta*

gereʕa thief (Ts)

gergitto enemy (Ts)

gešante firestick (horizontal) (cf. Ts *gešante* 'woman'?)

gibila knee (Ts *gibilko*)

gibisa femur (Ts *gubusko*)

gidana hair

gillata fish eagle (Ts *giloto*)

gira [ħaji ki...] to lighten

girib- to become night

gis- to say; *ɗugate ka=gisi=jantu* 'I tell you the truth'
IMPV.S: *gisá*, IMPV.P: *gísta*;
MID *gisiʔ-* to say
IMPV.S: *gisiʔá*, IMPV.P: *gisíʔta*

giš- to enter; to understand

goɠa white-headed buffalo weaver (Ts *goħile*)

gola beer

gollanke nine (Ts)

gorgora beehive

gosa tribe (Amh)

goxe to put out

goyangoyo a sp. of fish, not eaten

gúbale rabbit (Ts)

gufaʕ- to cough (Ts)
IMPV.S: *gufaʕá*, IMPV.P: *gufáʕta*

gula a sp. of lizard (?) (Ts)

gúlbata strength; *inta gúlbata=mi ki=dáŋɠaɗi* 'the man worked with strength'

gulma kind of big calabash (Ts)

gúmara throat

gunture hartebeest (Ts)

gura such as, like (Ts)

gurbaʕa little swift (Ts *gurbaʕakko*)

gure hunting dog

gurtulla galago; bush baby? (Ts *gurtullo*)

gúskutu inside

gusunte navel (cf. also *handura*)

gutal- to jump; to dance, sing
IMPV.S: *gutalá*, IMPV.P: *gutálta*
CAUS *gutalis-* to make jump, dance, sing
IMPV.S: *gutalisá*, IMPV.P: *gutalísta*

gutula stump (Ts *gutsunko*)

gaʃ- to bite
IMPV.S: *gaʃá*, IMPV.P: *gáʃta*

gad- to cut
IMPV.S: *gadá*; P. stem: *gits-* (Ts)
gadiʔ- to cut for oneself
IMPV.S: *gadiʔá*, IMPV.P: *gadíʔta*
CAUS *gadsan-* to make cut
IMPV.S: *gadsaná*, IMPV.P: *gadsánta*

gar- to be happy
CAUS *garsas-* to cause to be happy;
IMPV.S: *garsasá*, IMPV.P: *garsásta*

gas- to hunt (see also *qoš*) (Ts *gaasi* 'to fish')

gay- to run
IMPV.S: *gayá*; P stem: *bagat-*
CAUS *gaysan* to make run
IMPV.S: *gaysaná*

geʃe side

ges- to shave
IMPV.S: *filiʔá*, IMPV.P: *filíʔta*
gesiʔ to shave oneself
IMPV.S: *gesiʔá*, IMPV.P: *gesíʔta*

ginaʃa rib (Ts)

ginano mosquito

goh- to grow (Ts)
IMPV.S: *gohá*, IMPV.P: *góhta* CAUS *gohis* to make grow
IMPV.S: *gohisá*, IMPV.P: *hohísta*

goiʔ- to take, get
IMPV.S: *goiʔá*, IMPV.P: *goíʔta*

guy- to kindle the fire
IMPV.S: *guyá*, IMPV.P: *gúyta*

haka who

handura navel (Ts *handurte*; cf. also *gusunte*)

haš- to hear, listen
IMPV.S: *ašá*, IMPV.P: *ášta*

hat- to clap the hands

hawki to where?

hawtu from where?

háy P: *háyta* 'come!' (irregular IMPV of *ée* 'to come')

hobat-, hobe- to wash
IMPV.S: *hobatá*, IMPV.P: *hobátta*
hobatiʔ- to wash oneself
IMPV.S: *hobatiʔá*, IMPV.P: *hobatíʔta*

hokam- to exchange (P. subject) (Ts *ooki*))
IMPV.P: *hokánta*

haabi- to want (always as *háabini* PROG)

haaši leaf; grass (Ts *ʃaaško* 'grass')

habura wind (Ts *háburko*)

had- to collect (stem)
IMPV.S: *hadá*, IMPV.P: *hádta*
MID *hadi-* to collect, pick up (P. stem)
IMPV.P: *hadíta*
CAUS *hadsan-* to make collect
IMPV.S: *hadsaná*, IMPV.P: *hadsánta*

hágalo edible leaves

hagun- smell good, to
IMPV.S: *haguná*, IMPV.P: *hagúnta*

haji rain

halo calabash (Ts *halte*)

hanca tree; wood

hangararo worm (Ts)

hat- to hunt, shoot; *kata cawo=me binta ka=hát* 'I shot an animal with the rifle'
IMPV.S: *hatá*, IMPV.P: *hátta*; *binta noqótta=ba gída hátta* 'you (P) take aim and shoot the animal!'

ħed- to close, tie
IMPV.S: *ħedá*, IMPV.P: *ħétta*

ħee- to like, love (always PROG: *ħéeni*)

ħizge star (Ts *ħezge*)

ħólbatuni short

ħooka chest (Ts *ħeko*)

ħugu itching

jaaka child, baby (P: *eela*)

janta ~jaami you

jiʔ- to kill; to hit; to extinguish (fire) (see also *šúb*); *kata uke ka=jí* 'I killed an elephant'
IMPV.S: *jiʔá*, IMPV.P: *jíʔta*

juuka daughter; girl (P: *igire*)

kaada rope

kaanna since long ago (Ts)

káasala molar (Ts)

kab- to wait

kacce shoulder (Ts)

káfaʕa sp. of snake

kala bead

kamurre, kamurko, kamurte rich (Ts, areal)

kanna kanna in a hurry (Ts)

kano vagina; *kanu=du* an insult

kara fish (general term); sp. of big black fish (cf. Ts *xarre*?)

kara power, authority (?); used in the sentence: *inta kara ki=roota* 'he is powerful'

karawa colobus (Ts *karawko*)

karbo bird

kat- to leave; to come out, emerge
IMPV.S: *katá*; P stem: *foof-*

kawlal cheek

kaykitta bridegroom (Ts)

kaykitte bride (Ts)

keesa other

kere headrest (Ts)

kermayle zebra (Ts?)

kidisa cooking stones

kimiša crocodile

kirde testicle (Ts)

kirinca ankle (Ts)

kiti road

kobis- to pinch (Ts)
IMPV.S: *kobisá*, IMPV.P: *kobísta*

kol- to come back, return (Ts)
IMPV.S: *kolá*, IMPV.P: *kólta*
MID *kola-* to come back, return
IMPV.S: *kolé*, IMPV.P: *koléta*
CAUS *kolsan-* to make return
IMPV.S: *kolsaná*, IMPV.P: *kolsánta*

kolba another time, again

kolokolfo hamerkop (or cormorant, or bishop bird?; cf. Ts *qolaqolfo*)

komba beads necklace (Ts)

konqayle goose

koola wing (Ts *koolo*)

koom- to dig
IMPV.P: *koomá*, IMPV.P: *kóonta*

kórkiša [=sa] francolin or spurfowl (Ts *korkiša*)

kórome fishing hook (Ts *kormicco*)

kox- to leak
CAUS *koxis-* to make leak

kubis flower (cf. Ts *bisko*?)

kufe tortoise (Ts)

kuħħen fruit

kúlula guinea-fowl (Ts *kulule*)

kum- to finish (intr.) (Ts *kum*)
IMPV.S: *kumá*, IMPV.P: *kúnta*

kunkumitte cheek (Ts)

kúrruba crow, raven (Ts *kúrrube*)

kuskuso hyena (cf. Ts *kuškušo* cock's mane'?)

kuše- to beat, hit (obj.: P)
IMPV.P: *kušé*, IMPV.P: *kušéta*

kutsa [kutša] vulture (Ts *kutso*)

kuttunko mountain (Ts *kuttunko*)

laaħko arrow (Ts)

laalbe dress

laale oribi (Ts)

laamaxode twins ('2nd-born')

láʕakko plain (Ts *láʕakko*)

lama two (Cushitic)

lattu soft (Ts)

lax- to mix (tr.) (Dullay)
IMPV.S: *laxá*, IMPV.P: *láxta laxam-* to mix (intr.)
IMPV.S: *laxamá*, IMPV.P: *laxámta*

leeʕa moon; month (Ts *leeʕo*)

leeleʕa uvula

lool- to be, get angry
IMPV.S: *loolá*, IMPV.P: *lóolta*
CAUS *loolsan-* to cause to be angry
IMPV.S: *loolsaná*, IMPV.P: *loolsánta*

luqqa cuckoo or coucal (Ts *lukkale*)

maaqa sp. of lizard (Ts *maaqa*)

maara 1. son, child (male), boy; 2. sunbird (Ts, this meaning only)

mac'e sp. of edible grass (Ts)

maɠ- to go away; to take a different road (Ts)
IMPV.S: *maɠá*, IMPV.P: *máɠta*
MID *maɠɠiʔ-* to go away
IMPV.S: *maɠɠé*, IMPV.P: *maɠɠéta*
CAUS *maɠis-* to cause to take a different way
IMPV.S: *maɠisá*, IMPV.P: *maɠísta*
CAUS *maɠsan-* to chase away; to cause to take a different way
IMPV.S: *maɠsaná*, IMPV.P: *maɠsánta*

malal- to be tired (Ts)
IMPV.S: *malalá*, IMPV.P: *malálta*
malalsi- to tire
IMPV.S: *malalisá*, IMPV.P: *malalísta*

marraħe sp. of edible grass(Ts)

marróte forearm bracelet (Ts)

marte she-calf; *marte ordə* he-calf

martsa little acacia umbrelliphera (Ts)

maš- to cut with a knife, slice; to slaughter (for 'to cut' in general see *ħadʔ-*); *kata šera=me barama kara ká=maš* 'tomorrow I'll cut the fish with a knife
IMPV.S: *mašá*, IMPV.P: *mášta*

mayye- to kiss (Ts)
IMPV.S: *mayyé*, IMPV.P: *mayyéta*

meeʕ- to shout (subj.: animal)

mekente sterile (F; Ts); for male: *moolo tiibto*

merja antelope (Ts)

meša name

miʔa how much/many?

mic'a bone

middo wrist bracelet (Ts)

midisa grinding stone

midʔitte clitoris; *midʔitti=du* an insult

milmille sp. of fish, not eaten

mirʔamatte intestine (Ts *mirmaʔatte*)

mirila cheetah; leopard (Ts *moralle*)

mizigitte right (Ts)

moolo penis; *moolo siidu* an insult; *moolo tiibto* sterile (said of male; 'the penis is dead')

moora light gray (Ts)

moqotte frog (Ts *muqoʕte*)

morom- to speak
IMPV.S: *moromá* IMPV.P: *morónta*
MID *moromiʔ-* to converse
IMPV.S: *moromiʔá*, IMPV.P: *moromíʔta*

CAUS *moromis-* to make speak
IMPV.S: *moromisá*, IMPV.P: *moromísta*
CAUS-MID *moromsan-* to make speak
IMPV.S: *moromsaná*,
IMPV.P: *moromsánta*

moyle gerenuk (Ts *moyle*)

munnuʃuni P: *minʃeta* little, small; young

múralla kori bustard (Ts *múrale*)

muta crane (Ts *mute*)

muusko sorghum; *muusko roomini* red sorghum

muuts- to answer; to give back
IMPV.S: *muutsá*, IMPV.P: *múutsta*

muxe- to laugh
IMPV.S: *muxé*, IMPV.P: *muxéta*
CAUS *muxsan-* to make laugh
IMPV.S: *muxsaná*, IMPV.P: *muxsánta*

naʃ- to give
IMPV.S: *naʃá*, IMPV.S: *náʃta*
CAUS *naʃsan-* to cause to give

naʃana food

nabad- to hate (Ts)
IMPV.S: *nabadá*, IMPV.P: *nabádta*

nágayko peace; a greeting (Ts)

naħ- to be surprised, shocked
IMPV.S: *naħá*, IMPV.P: *náħta*
CAUS *naħsan-* to surprise, to be a cause of surprise
IMPV.S: *naħsaná*, IMPV.P: *naħsánta*

na=ku why? ("what-for")

narfi needle (Amh)

naxani yesterday

nilla little fish used for bait

nitsina many

noqot- to look, aim at (Ts)
IMPV.S: *noqotá*, IMPV.P: *noqótta*
noqotiʔ- look, aim at, to
IMPV.S: *noqotiʔá*, IMPV.P: *noqotíʔta*

qaabakko sp. of fly (tse-tse?; Ts)

qaaɗe- to lie down
IMPV.S: *qaaɗé*, IMPV.P: *qaaɗéta*

qaara monkey (Ts *qaarakko*)

qaba saucepan

qafe- to fish
IMPV.S: *qafé ~ qappé*,
IMPV.P: *qaféta ~ qappéta*

qalaya golden cat; hyena (Ts *qalate*)

qalte sp. of big white fish

qane day (Amh); *qane baɗɗe* always; *qane qane* sometimes (calque from Ts)

qaqayo little frog

qaqqe bark (Ts *qaqqatte*)

qaske dog

qaw- to burn (intr.); to catch fire; *qawad-* to burn (intr.)

qawte pumpkin (Ts)

qoba finger (Ts *qobakko*)

qode snail (Ts)

qola animal (domestic) (Ts *qole*)

qolo goat

qooš- to hunt (see also *ħas*) (Ts *qooši*)

qumu container (general term)

raaw- to finish (tr.) (Ts *raawi*)
IMPV.P: *raawá*, IMPV.P: *ráawta*

rakke- to hang (Ts)
IMPV.S: *rakké*, IMPV.P: *rakkéta*
CAUS *rakkis-* to make hang

reekis- to mix (Ts)
IMPV.S: *reekisá*, IMPV.P: *reekísta*

reex- to go down
IMPV.S: *reexá*; P stem: ?

renta hippopotamus (Ts *rento*)

rewa sp. of edible grass

rig- to smooth a skin with a stone (Ts?)
IMPV.S: *rigá*, IMPV.P: *rígda*

riir- to shout (Ts *riir*)
IMPV.S: *riirá*, IMPV.P: *ríirta*

roo- to go
IMPV.S: *rootá*, IMPV.P: *róotta*

róomini red

roqinta heart

ruggi=tu in front of

rummahte SING: *rummattitta* Arbore (Ts)

saalta oryx (Ts *šaalto*)

sáamule ibis

sagayto wrist

sal- to wait (Ts *sál*)
IMPV.S: *salá*, IMPV.P: *sálta*
CAUS *salis-* to make wait (CAUS)
IMPV.S: *salisá*, IMPV.P: *salísta*
CAUS-MID *salsan-* to make wait
IMPV.S: *salsaná*, IMPV.P: *salsánta*

sarba calf (body part) (Ts *sarba*)

sayra dikdik (Ts *sawro*; cf. also *séngere*)

séngere dikdik (cf. also *sayra*)

sey flea (Ts)

sibila iron (areal word)

sídda before

siibde bow string (Ts *siibde*)

siida eyebrow (Ts *sido*)

síina nose

siinsad- to smell
IMPV.S: *siinsadá*, IMPV.P: *siinsádta*

silbe yellow
silbe áttomuni light blue ('yellow+white')
silbe cárkamuni dark green ('yellow+green')
silbe ɗákkamuni blue ('yellow+black')
silbe róomini pink; violet ('yellow+red')

sippa [tsippa] sweat (Ts *sippo*)

sira?a sp. of very small fish

sodda sister (Ts 'brother/sister-in-law')

sonon- to blow the nose
IMPV.S: *sononá*, IMPV.P: *sonónta*

sonqitte fingernail

soorto umbilical cord (Ts)

soqo salt (Ts)

sorra anus; *sorra=du* an insult

sug- to sniff (obj.: *tampo* 'tobacco')
IMPV.S: *sugá*, IMPV.P: *súgta*

suude flank

ša?at- to be afraid
IMPV.S: *ša?atá*, IMPV.P: *ša?átta*

šaaɦa urine; sperm

ša?alkuni older brother (Ts *ša?alko*)

šab- to cross
IMPV.S: *šabá*, IMPV.P: *šábta*

šamma?ši?- to yawn (Ts)
IMPV.S: *šamma?ši?á*,
IMPV.P: *šamma?ší?ta*

šanne- to rest (on the headrest) (Ts *šánni*)
IMPV.S: *šanné*, IMPV.P: *šannéta*

šeera knife

šompola namaqua dove (Ts *šumpulo*)

šona bongo (or kudu?) (Ts)

šóokaya honey

šoon- to be hot; to be feverish, ill
IMPV.S: *šooná*, IMPV.P: *šóonta*

šoqta male; bull; firestick (vertical)

šoxe- to have sexual intercourse (subj.: male; female: passive)
IMPV.S: *šoxé*, IMPV.P: *šoxéta*

šoxo blood

šu?una butter

šu?a to anoint
IMPV.S: *šu?á*, IMPV.P: *šú?ta*

šub- to kill (see also *jiʔ*); *kiʔita šúb ella* 'they killed each other'; *kata barám kara šúbbo ka=róota* 'I go fishing tomorrow'; *korome=me kara ka=šúb* 'I fished with the fish hook'

šud- to cover; to dress (tr.) (Ts)
IMPV.S: *šudá*, IMPV.P: *šútta*
šudam- to dress oneself
IMPV.S: *šudamá*, IMPV.P: *šudánta*;
CAUS *šudas-* to make dress, cover
IMPV.S: *šudašá*, IMPV.P: *šudášta*

šuguc- to anoint oneself
IMPV.S: *šugucá*, IMPV.P: *šugúcta*

šumaħa sand (Ts *šumaħto*)

taʔ- to take, catch
IMPV.S: *taʔá*, IMPV.S: *táʔta*
MID *taʔam-* to take, catch
IMPV.S: *taʔamá*, IMPV.S: *taʔánta*
CAUS *taʔsan-* to make take, catch
IMPV.S: *taʔsaná*, IMPV.S: *taʔsánta*

taʕanta very

taba thorn

tafo thigh (Ts *tapo*)

tag-, tagam- to sleep
IMPV.S: *tagamá*, IMPV.P: *tagánta*
CAUS *tagsan-* to make sleep
IMPV.S: *tagsaná*, IMPV.S: *tagsánta*
CAUS *tagansan-* to make sleep
IMPV.S: *tagansaná*,
IMPV.P: *tagansánta*

tágara shadow; *met.* place

tagats- to make go up
IMPV.S: *tagatsá*, IMPV.P: *tagátsta*

taħanke seven (Ts *taħħan*)

talaħa four (cf. Ts *salaħ*?)

tamar- to learn (Amh)
IMPV.S: *tamará*, IMPV.P: *tamárta*

tampo tobacco (areal word)

taw- to build
IMPV.S: *tawá*, IMPV.P: *táwta*

ta[w]i- to build for oneself
IMPV.S: *tawiʔá*, IMPV.P: *tawíʔta*

taxay- to raise
IMPV.S: *taxayá*, IMPV.P: *taxáyta*

tereħ- to make go down
IMPV.S: *tereħá*, IMPV.P: *teréħta*

terekko dust (Ts *teerikko*)

tib- to die
IMPV.S: *tibá*, IMPV.P: *tíbta*

tiid- to put, store
IMPV.S: *tiidá*, IMPV.P: *tíitta*
CAUS *tiidis-ʔ*, *tiidas-* to cause to put
IMPV.S: *tiidisá*, IMPV.P: *tiidísta*
CAUS *tiidsan-* to cause to put
IMPV.S: *tiidsaná*, IMPV.P: *tiidsánta*

tilďo paradise flycatcher (Ts *tílďa*)

tilile black kite (Ts)

tinniša potato (Amh)

tira liver (Ts *tire*)

tókoma heel (Ts *tókonko*)

tonnakko F:*tonnatte*; P:*tonnayke* lame; hump-backed (Ts)

toonte frankincense

toollo stick (Ts *toolingo*)

tora spear; *tora ki=náʕ=na* 'he gave me the spear'

tuʔ- to add (things, one by one); *naxani caʕa ki=túʔ* 'yesterday he added a stone'
IMPV.S: *tuʔá*, IMPV.P: *túʔta*
tuʔa- to be added
MID *tuʔi-* to add for oneself
IMPV.S: *tuʔiʔá*, IMPV.P: *tuʔiʔta*
CAUS *tuʔsan-* to make add (sth. solid)
IMPV.S: *tuʔsaná*, IMPV.P: *tuʔsánta*
cf. *diig-* 'to add liquid' and *faʔ-* 'to add salt (sand, earth)'

=tuʔi also, too

tule buttocks (cf. Ts *turďe*?)

tunaw- to be blunt (Ts *tunay*)

tuuts to push (Ts *tuuts*)
IMPV.S: *tuutsá*, IMPV.P: *túutsta*

tsáamitsa louse

tsal- to curse
IMPV.S: *tsalá*, IMPV.P: *tsálta*
MID *tsali?-* to curse
CAUS *tsalsan-* to make curse

tsan- 1. to be cold; 2. to heal (intr.), to recover
IMPV.S: *tsaná*, IMPV.P: *tsánta*

tsanafa six

tsaqam- to be salty, bitter

tsii- to know
IMPV.S: *tsiiá*, IMPV.P: *tsíita*

tsuf- to lie down

tsuub- to suck (Ts)
IMPV.S: *tsuubá*, IMPV.P: *tsúubta*

tsoonako honeybee (Ts *ts'oonako*)

waaga bat

wáala generic name for various species of colored weavers

waaqa African hoopoe (Ts *wáaqo*)

wáara forest

waga god

wak- to fall
IMPV.S: *waká*, IMPV.P: *wákta*

wal- to forget (Ts)
IMPV.S: *walá*, IMPV.P: *wálta*

wale panga (Ts)

was- to spend the day
IMPV.S: *wasá*, IMPV.P: *wásta*

wuyam- to call (Ts *wuyá*)
IMPV.S: *wuyamá*, IMPV.P: *wuyánta*

wohara he-goat

woki there

wowa ear

wunki here

wura house

xa?- to do (irregular)
IMPV.S: *xaašá*, IMPV.P: *xáašta*

xaab- to scratch
IMPV.S: *xaabá*, IMPV.P: *xáabta*

xalle sp. of fish

xam- to become
IMPV.S: *xamá*, IMPV.P: *xánta*

xarat- to divide

xaraw [haji ki...] to thunder

xasod- to rejoice (Ts)

xibte lip (Ts)

xo?- to beat, hit; P stem: *kuše-*
IMPV.S: *xo?á*, IMPV.P: *xó?ta*

xobbi five (Ts *xobin*)

xod- to generate; to be born (with ISP *a*)
IMPV.S: *xodé*, IMPV.P: *xodéta*

xoona sheep

xot- to put down (P. stem)
IMPV.P: *xótta*
xotam- to go down (P. stem)
IMPV.P: *xotánta*

xur- to leave
IMPV.S: *xurá*, IMPV.P: *xúrta*

yaw- to stop, stand
IMPV.S: *yaawá*, IMPV.P: *yáawta*
CAUS *yawsan-* to make stop, stand
IMPV.S: *yawsaná*,
IMPV.P: *yawsánta*

yaayo jackal

yob- to see
IMPV.S: *yobá*, IMPV.P: *yóbta*

yooba men; males; people

zaarakko F: *zaaratte*; P: *zaarayke* crazy, stupid (Ts)

zabarna lie, falsehood

zanitte palm lines (Ts)

zaqe cotton (Ts *záqe* "cotton thread")

zax- to grind
IMPV.S: *zaxá*, IMPV.P: *záxta*
MID: *zaxiʔ-* to grind for oneself
IMPV.S: *zaxiʔá*, IMPV.P: *zaxíʔta*
CAUS *zaxsan-* to make grind
IMPV.S: *zaxsaná*, IMPV.P: *zaxsánta*

zeħa three (Ts *zeħ*)

zii?- 1. to pull; 2. to fart
IMPV.S: *ziiʔá*, IMPV.P: *zíiʔta*

zilanqa sp. of lizard (Ts *zilanqa*)

zoborko worm (Ts)

zoguy- to swim (Ts *zoguy-*)
IMPV.S: *zoguyá*, IMPV.P: *zogúyta*

zooʔ- to collect honey
IMPV.S: *zooʔá*, IMPV.P: *zóoʔta*
MID *zooʔiʔ-* to collect honey
IMPV.S: *zooʔé*, IMPV.P: *zooʔéta*

zooba beeswax

6. English-Ongota index

to add (things, one by one) *tuʔ-*; (obj. water and other liquids) *diig*
to be afraid *šaʔat-*
all *baɗɗe*
also, too *=tuʔi*
Amhara *fuga*; SING: *fugitta*
amniotic fluid *uppatte*
and *=ba*
to be, get angry *lool-*
animal (domestic) *qola*; (wild) *binta*
ankle *kirinca*
to anoint *šuʔa*; (obj. oneself) *šuguc-*
another time, again *kolba*
to answer; to give back *muuts-*
ant *cincaqe*
antelope *merja*
anus *sorra*
Arbore *rummatte*; SING: *rummattitta*
arm; hand; finger *iiʔa*
armpit *baara*
to arrive *daggab*
arrow *laaħko*
arrow's point *falde [palde]*
to ask *caxtiʔ-*
axe *irgaʕa*
baboon *dábaša*
back (body part) *baħada*
bad, ugly *ʕádala*
bark *qaqqe*
to bark (subj.: dog) *buħaɗ-*
bat *waaga*
to be *am-*
bead *kala*; beads necklace *komba*
beans *oofe*

to beat, hit *xoʔ-*; (obj.: P) *kuše-*; *coq-*
to become *xam-*
beehive *gorgora*
beer *gola*
beeswax *zooba*
beetle *bannáɗɗa*
before *sídda*
to belch *geʕ-*
belly *buusa*
big; old *gaddaʕuni*; P: *giddeʕeta*
bird (general term) *karbo*; *ʕaħaye*
to bite *ɠaʕ-*
black *ɗákkamuni*
blind *daafakko* ; F: *daafatte* ; P: *daafayke*; to become blind *daaf-*; to make be blind *daafis* -
blood *šoxo*
to blow the nose *sonon-*
to be blunt *tunaw-*
bone *mic'a*
bow *baaħante*
bow string *siibde*
bracelet (forearm) *marrote*; (wrist) *middo*
breast *ama*
bride *kaykitte*
bridegroom *kaykitta*
to bring; to have *išee-*
brother (older) *šaʕalkuni*; (younger) *ʕázane*
buffalo *báyaʕa*
to build *taw-*
to burn (intr.); to catch fire *qaw-*
bush duiker *gaba*
bushpig *ílaša*
butter *šuʔuna*
buttocks *tule*
calabash *ħalo*
calf *ottako*; she-calf *marte*
calf (body part) *sarba*
to call *wuyam-*
can, to be able *algas*
to carry (on the back) *baʕce-*
cat *dibita*
catarrh, mucous *ármata*
to chase, send away *biibe-*
cheek *kawlal*; *kunkumitte*
cheetah; leopard *mirila*
chest *ħooka*
chest, stomach *bor*
child, baby *jaaka*; P: *eela*
chin *gawšo*
to clap the hands *hat-*
to climb; to come out *gats-*
clitoris *miɗitte*
to close, tie *ħed-*
cloud *foolo*
coffee *ʕari*
to be cold *tsan-*
collar-bone *bargadde*
to collect *ħaɗ-*(P. stem); (obj. honey) *zooʔ-*
to comb *filiʔ* -
comb *filma*
to come *ee-*
to come back, return *kol-*
container *qumu*
cooking stones *kidisa*
corn *game*
cotton *zaqe*
to cough *gufaʕ-*
to cover; to dress (tr.) *šud-*
crane *muta*

crazy, stupid *zaarakko*; F: *zaaratte*; P: *zaarayke*

crocodile *kimiša*

to cross *šab-*

crow, raven *kúrruba*

to cry *boye-*

to curse *tsal-*

to cut *ʄaɗ-*

to cut with a knife, slice; to slaughter *maš-*

daughter; girl *juuka*; P: *igire*; son's daughter *oobde*

day *qane*

deaf; stupid *dakkakko*; F: *dakkatte*; P: *dakkayke*

dew *carke*

to die *tib-*; (P stem?) *baq-*

to dig *koom-*

dikdik *sayra* ; *séngere*

dirty *baaxa*

to divide *xarat-*

to divide, share *baqas* -

to do *xaʔ-*; *danʄaɗ-*

dog *qaske*

donkey *arre*

door *ippa*

dress *laalbe*

to drink *caʕaw-*

to dry up, become dry *buʕ-*

dust *terekko*

ear *wowa*

earring *ašawa*

to eat *cak-*

edible leaves *ħágalo*

eight *ista*

elbow *cikila*

elder, old man; husband *ʕádiba*

elephant *uke*

to embrace, to lull *abun-*

enemy *gergitto*

to enter; to understand *giš-*

evening *gallabdi*

to exchange *hokam-* (P. subject)

excrement *baqa*

eye *afa*

eyebrow *siida*

face *balʕasa*

to fall *wak-*; to make fall *dat-*

to fart *ziiʔ-*

father *baaye*; father's older brother/ sister *akkuyte*

femur *gibisa*

finger *qoba*

fingernail *sonqitte*

to finish (intr.) *kum-*; (tr.) *raaw-*

fire *oxoni*

firestick *gešante*; *ɗayte*

to fish *qafe-*

fish (general term) *kara*

eagle (fish eagle) *gillata*; (long-crested eagle) *daqse* [daqša]

fishing hook *kórome*

five *xobbi*

flank *suude*

flea *sey*

flower *kubís*

foetus *ereħa*

food *naʕana*

foot; leg *aka*

forest *waara*

to forget *wal-*

four *talaħa*

frankincense *toonte*

friend *aryitta*

frog *moqotte*

fruit *kuhhen*

Gawwada (and other Dullay-speaking groups of the highlands) *ʕale*

to generate *xod-*

giraffe *damʕa*

to give *naʕ-*; *beʔe-*

to go *roo-*; *askam-*; to go away; to take a different road *maħ-*; to go down *reex-*; to make go up *tagats-*; to make go down *tereħ-*

goat *qolo*; he-goat *wohara*

god *waga*

golden cat; hyena *qalaya*

good; beautiful; well *abba*

goose *konqayle*

grandfather *akka*

gray (light) *moora*; (dark) *arrakko*; F: *arratte*

green *cárkamuni*

to grind *zax-*

grinding stone *midisa*

to grow *ħoh-*

guinea-fowl *kúlula*

gun, rifle *cawo*

hair *gidana*

Hamar *orga*; SING: *orgitta*

to hang *rakke-*

to be happy *ħar-*

to be hard, strong; to be dry *boʕ-*

to hate *nabad-*

head; hair *bine*

headrest *kere*

to heal (intr.), to recover *tsaan-*

to hear, listen *haš*

heart *roqinta*

heel *tókoma*

here *wunki*

heron *andulle*; *bárgada*

to hiccough *ʕiqaɗ*

to hide *caq-*

hippopotamus *renta*

hole *deela*

honey *šóokaya*

honeybee *tsoonako*

hornbill *ɗonka*

to be hot; to be feverish, ill *šoon-*

house *wura*

how? *ašana*

how much/many? *miʔa*

hundred *ɗibba*

to hunt, shoot *ħas-*; *qooš-*; *ħat-*

hunting dog *gure*

hyena *kuskuso*

ibis *sáamule*

intestine *mirʔamatte*

iron *sibila*

itching *ħugu*

jackal *yaayo*

to jump; to dance, sing *gutal-*

kidney *ɗeʕse*

to kill; to hit; to extinguish (fire) *jiʔ-*; *šub-*

to kindle; to add (salt, sand, earth), to put into *faʔ-*

to kindle the fire *ħuy-*

to kiss *mayye-*

klipspringer *dizza*

knee *gibila*

knife *šeera*

to know *tsii-*

lame; hump-backed *tonnakko*;

F: tonnatte; P:tonnayke
land bia
to laugh muxe-
leaf; grass ħaaši
to leak kox-
to learn tamar-
to leave xur-
to leave; to come out, emerge kat-; (P subj.) foof-
left beħatto
to lick ʕad-
lie, falsehood zabarna
to lie down qaaɗe-; tsuɠ-
like, love, to ħeeni-
lion óxaya
lip xibte
little, small; young munnuʕuni; P: minʕeta
liver tira
to look, aim at noqot-
to lose aħ-; biħ-
loud ékkite
louse tsáamitsa
lung comba
male; bull; firestick šoqta
man; husband; male inta, P: yooba
many nitsina
to marry ifam-
meat cata
milk; tear eefi
to milk fiʔ-
to miss the target dabb -
to mix ʕangat-; lax-; reekis-
molar káasala
mongoose dúbaza
monkey qaara
moon; month leeʕa
mosquito ħinano
mother ayyane
mountain kuttunko
mouth; language iifa
mud conqorte
name meša
navel gusunte; hanɗura
neck iište; denge
needle narfi
to become night girib-
nine gollanke
nose síina
now ayki
old geccate; P: geccayke
one akkálbano
oneself ella, elella
oryx saalta
ostrich balgo
other keesa
owlet diga
ox arɗo
palm lines zanitte
peace nágayko
pelican badio
pen, enclosure cayde
penis moolo
to pick up, collect boš-
to pierce, spear, sting coq-
pigeon átolla
to pinch kobis-
plain láʕakko
to play iške-
play išma
to plough; to do, make danħaɗ-
to plunge ɗiim

poison; medicine *ɗeeša*
poor *baʕatuni*
porcupine *dangadangaco*
potato *tinniša*
to pour, fill *ucce*
pregnant *ereħte*; P: *ereħiwa*; to become pregnant *ereħiʔ-*
pubic hair *bositte*
to pull *ziiʔ-*
to pull out *bul-*
pumpkin *qawte*
pupil of the eye *dunko*
to push *tuuts*
to put, store *tiid-*
to put down *faɗ-*; *xot-*
to put out *goxe-*
rabbit *gúbale*
rain *ħaji*
to raise *taxay-*
to reach (someone) *ɗehaɗ*
red *róomini*
to rejoice *xasod-*
relative *eeda*
to rest *aame-*; (on the headrest) *šanne-*
rhinoceros *oršatte*
rib *ħinaʕa*
rich *kamurre*, SING.M *kamurko*, SING.F *kamurte*
right *mizigitte*
to rise, stand up *axay-*
road *kiti*
root, vein *ʕizza*
rope *kaada*
to run *ħay-*; (P subj.) *baħat-*
sacrum (anat.) *fulfula* [pulpula]
to be sad *ekkešad*
saliva *boɗa*
salt *soqo*
to be salty, bitter *tsaqam-*
sand *šumaħa*
saucepan *qaba*
to say *gis-*
to scratch *xaab-*
to see *yob-*
seed *boraħo*
to send away *farat-*
seven *taħanke*
to sew *cig-*
to have sexual intercourse *šoxe-*
shadow, place *tágara*
to shave *ħes-*
sheep *xoona*
shin *garaboko*
short *hólbatuni*
shoulder *kacce*
to shout *riir-*; *meeʕ-*
sibling *aza*
side *ħeʕe*
sister *sodda*; sister's husband *úkubu*; sister's son *ášinkuni*
six *tsanafa*
skin; hide *darbo*
to sleep *tag-, tagam-*
slowly; a little bit; softly *íccama*
to smell *siinsad*; (good) *ħagun-*
to smooth (a skin with a stone) *rig-*
snail *qode*
snake *gabare*
to sneeze *ʕiqqiši?-*
to sniff (obj.: *tampo* 'tobacco') *sug-*
soft *lattu*

son, child (male), boy *maara*; P: *iila*; son's son *oofko*
sorghum *muusko*
to speak *morom-*
spear *tora*
to spend the day *was-*
spider *innakko*
to spit *bud-*
star *ħizge*
to steal *gereʕ-*
sterile (F) *mekente*
stick *toollo*
to stink *ʕar-*
stone; grinding stone *caʕa*
to stop (intr.) *ɗehe-*
to stop, stand *yaw-*
strength *gúlbata*
stump *gutula*
to suck *ame-*; *tsuub-*
sun *áxaco*
to be surprised, shocked *naħ-*
sweat *sippa* [tsippa]
to swim *zoguy-*
to take, get *ħoiʔ -*
to take, catch *taʔ-*
tall *orma*
to tell *ʕale-*
ten *coma*
termite *irmatte*
testicle *kirde*
that (faraway) *áddate*
there *woki*
thief *gereʕa*
thigh *tafo*
thin *carba*
thorn *taba*
three *zeħa*
throat *gúmara*
to thunder *xaraw* [ħaji ki...]
to be tired *malal-*
tobacco *tampo*
today *burinki*
tomorrow *barám, barama*
tongue *ʕádaba*
tooth *itima*
tortoise *kufe*
to touch *berre-*
tree; wood *ħanca*
tribe *gosa*
truth *ɗugate*
twins *laamaxode*
to twist the firesticks *ɗay*
two *lama*
umbilical cord *soorto*
uncle *ʕabuya*
urine; sperm *šaaħa*
uvula *leeleʕa*
vagina *kano*
very *taʕanta*
village, settlement *olla*
to vomit *ʕebeʕe-*
vulture *kutsa [kutša]*
to wait *kab-*; *sal*
to want *ħaabi-*
to wash *hobat-*
water; river *caʕawa*
waterbuck *doʔosa*
Weyt'o river *dullaya*
when? *bari*
(to) where? *hawki*; from where? *hawtu*
which? *ayta*
to whistle *fidis* -

white *áttomuni*
who *haka*
why? *na=ku*
wild peas *bote*
wind *ħabura*
wing *koola*
wisdom tooth *ʕango*
woman, wife; female *ayma*; P: *aaka*
worm *ħangararo*; *zoborko*
wrist *sagayto*
to yawn *šammaʕši?-*
year *bera*
yellow *silbe*
yesterday *naxani*
zebra *kermayle*

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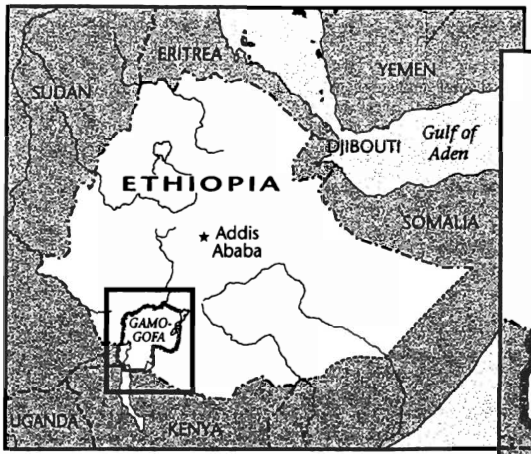
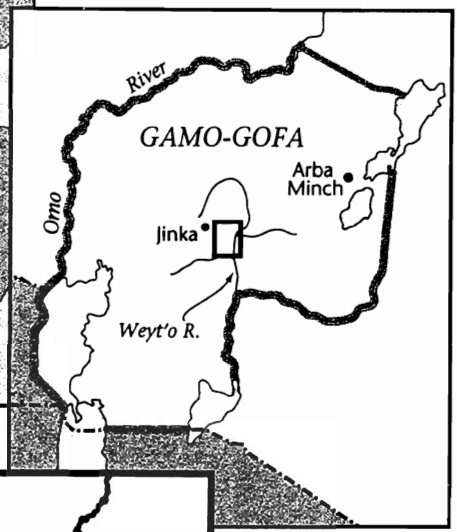
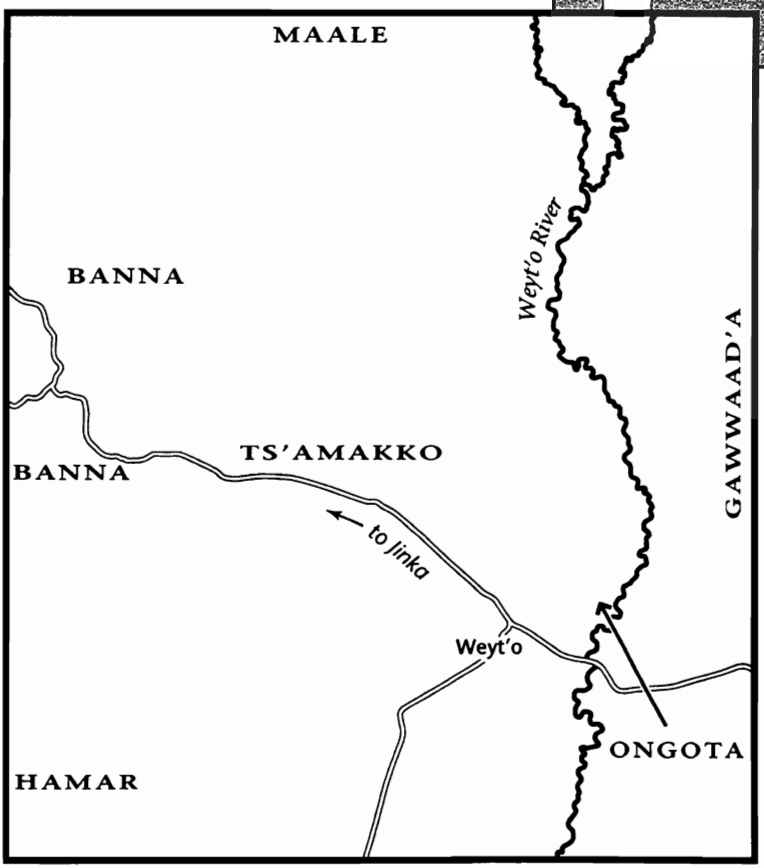


Ethiopia



Gamo-Gofa province, Ethiopia



Weyt'o River area in Gamo-Gofa province, Ethiopia.

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PUBLICATIONS RECEIVED

Rubongoya, L. T. *A Modern Runyoro-Rutooro Grammar* (East African languages and dialects, vol. 9). Köln: Rüdiger Köppe Verlag. 1999. Pp. xix, 334. ISBN 3-89645-023-9. Paper. DM 88.00.

Runyoro-Rutooro—really two dialects of one language—are spoken in Uganda, where the author works as a linguist and language teacher. The book has, as its primary goal, the teaching of the grammar of this language to native speakers in local secondary schools and possibly the first years of university study. The book is divided into two parts: Preliminaries and Particulars. The first part consists of six chapters. The first three address issues of orthography and syllabification of words. Chapters 4-6 address issues of terminology related to parts of speech and grammatical roles, grammatical properties such as agreement, and the formation of locatives. The second part—comprising 11 chapters—describes in detail the noun class system (Ch. 7), genitive formation (Ch. 8), the form and function of nouns (Chs. 9-10), the verb and its moods and tenses (Chs. 11-15), adjectives and adverbs (Ch. 16), and co-ordination (Ch. 17). An index is provided.

Boyeldieu, Pascal. *Identité tonale et filiation des langues sara-bongo-baguirmiennes (Afrique centrale)* (SUGIA Supplement 10, ISSN 0720-0986). Köln: Rüdiger Köppe Verlag. 2000. Pp. 318, 1 folding map, 5 maps. ISBN 951-41-0864-7. Paper. € 34.77 (DM 68.00).

This book constitutes a comparative study of the Sara-Bongo-Baguirmian languages that stretch across Chad, the Central African Republic, Sudan and the northern part of Zaire (now the Democratic Republic of Congo). The author focuses specifically on similarities and differences in tonal phenomena in an effort to explain certain properties of the current systems and, ultimately, to determine genetic relationships among the languages. The book consists of ten chapters. The first outlines the linguistic environment and previous classifications, the second the principles and methods employed in the analysis. Chapters 3 to 6 investigate correspondences among consonants (Ch. 4) and tones: tonal systems (Ch. 5), tones in nouns (Ch. 6), and tones in verbs (Ch.7). Chapter 7 discusses the relationship among the languages based on the findings; Chapter 8 focuses specifically on the marginal position of Kresh. Chapters 9 and 10 discuss tonal phenomena diachronically and the expansion of the S-B-B group, respectively. Following the main text, the book provides the relevant correspondence series: nominal, verbal, and one devoted to Kresh. Six maps are included along with numverous tables.

Nurse, Derek. *Inheritance, Contact, and Change in Two East African Languages* (Sprachkontakt in Afrika, vol. 4). Köln: Rüdiger Köppe Verlag. 2000. Pp. 277, 1 map. ISBN 3-89645-270-3. Paper. € 34.77 (DM 68.00).

In this book, the author examines Daiso and Ilwana, two languages that have undergone some "distortion" in inheritance of genetic material. In two lengthy chapters (~100+ pages each), the

author describes three main areas of the grammar of these languages: the phonology, including tonal behavior, the noun phrase, and verb morphology. Features are discussed in terms of inheritance, transfer, or innovation. In addition, the author disucsses the communities in which the languages are situated and the historical setting of people and language. Included at the end of each descriptive section is a lexicon of the language discussed. A fourth, and final, chapter briefly addresses the same kinds of issues in other languages in the area: Sonjo, Mwiini, Mwani, Koti, Swahili dialects, Ma'a (Mbugu), Boni.

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UPCOMING MEETINGS ON AFRICAN LANGUAGES/LINGUISTICS

2001

March 23-25

ANNUAL CONFERENCE ON AFRICAN LINGUISTICS (ACAL), 32ND. University of California, Berkeley, California. (Contact: ACAL32, Dept. of Linguistics, 1203 Dwinelle Hall, University of California, Berkeley, CA 084720; e-mail: ACAL32@ uclink.berkeley.edu; website: http://linguistics.berkeley.edu/~acal 32/)

BERKELEY LINGUISTICS SOCIETY ANNUAL MEETING (27TH), SPECIAL SESSION ON AFROA139f California, Berkeley, California. (Contact: BLS 27 Abstracts Committee, 1203 Dwinelle Hall, University of California, Berkeley, CA 94720; information at http://linguistics.berkeley.edu/~acal 32/)

March 30-April 1

NORTH AMERICAN CONFERENCE ON AFROASIATIC LINGUISTICS (NACAL). Toronto, Canada. (Contact: Robin Thelwall, 2121 1st Avenue NW, Calgary, Alberta T2N 0B6, Canada; Tel.: 403 283 4494; Fax: 403 283 5584; e-mail: eubule@telusplanet.net.

April 26-28

AFRICAN LANGUAGE TEACHERS' ASSOCIATION (ALTA) CONFERENCE, 5TH. University of Wisconsin, Madison, Wisconsin . (Contact: Karen Gleisner, Project Assistant, National African Language Resource Center, 4231 Humanities Building, 455 N. Park St., University of Wisconsin, Madison, WI 53705; Tel.: 608-265-7905; fax: 608-265-7904; e-mail: kbhartwig@facstaff. wisc.edu; website: http:// african.lss.wisc.edu/nalrc)

June 21-22

TONOLOGY MEETING. University of Toulouse le Mirail. (Contact: Elsa Gomez-Imbert, ERSS Equipe de Recherche en Syntaxe et Semantique UMR 5610, CNRS & U. Toulouse-Le Mirail, Maison de la Recherche, 5 allees Antonio Machado 31058 Toulouse, France; Tel.: 33 (0)5 61 50 36 67; fax: 33 (0)5 61 50 46 77; e-mail: Gomezimb@univ-tlse2.fr)

July 5-8
BIENNIAL INTERNATIONAL COLLOQUIUM ON THE CHADIC LANGUAGES. University of Leipzig, Germany. (Contact: Prof. Dr. H. Ekkehard Wolff, Institut für Afrikanistik, Universität Leipzig, Burgstrasse 21, D-04109 Leipzig, Germany; Tel. (+49) (0)341 - 97 37031; Fax: (+49) (0)341 - 97 37048; e-mail: wolff@rz.uni-leipzig.de; website: http://www.uni-leipzig.de/afrikanistik/)

July 11-13
INTERNATIONAL BIENNIAL AFRICAN LANGUAGE ASSOCIATION OF SOUTH AFRICA (ALASA) CONFERENCE, 11TH. University of Port Elizabeth, South Africa. (Contact: Prof. Henry Thipa; e-mail: ngahmt@upe.ac.za; fax +27 41 5042827)

August 22-25
NILO-SAHARAN LINGUISTICS COLLOQUIUM, 8TH. Hamburg University, Hamburg, Germany. (Contact: 8th NSLC, Institute of African and Ethiopian Studies, Rothenbaumchausee 67/69, Hamburg University, D-20148 Hamburg, Germany; Tel.: 0049-40/42838-4874; fax: 0049-40/42838-5675; e-mail: nilosah@uni-hamburg.de)

August 27-29
COLLOQUIUM ON AFRICAN LANGUAGES AND LINGUISTICS, 31ST. Leiden, The Netherlands. (Contact: The Organizaer, CALL, Dept. of African Linguistics, Leiden University, P. O. Box 9515, 2300 RA Leiden, The Netherlands; e-mail: CALL@let.leidenuniv.nl; website: http://www.let.leidenuniv.nl/tca/atk/call.html)

September 25-28
INTERNATIONAL CONFERENCE ON THE LANGUAGES OF THE FAR EAST, SOUTHEAST ASIA AND WEST AFRICA, 6TH. University of St. Petersburg, Russia. (Contact: Mr. Nikolai Frolov, e-mail: posia@NF8060.spb.edu; or e-mail: sein@newmail.ru)

October 18-20
TEXT IN CONTEXT: AFRICAN LANGUAGES BETWEEN ORALITY AND SCRIPTURALITY. University of Zurich, Switzerland. (Contact: Dept. of General Linguistics, African Symposium, Plattenstr. 54, CH-8032 Zurich, Switzerland; fax: 0041-1-634 43 57; e-mail: afrosympo@access.unizh.ch; website: http://www.unizh.ch/spw)

2001

JUNE 12-15, 2002
INTERDISCIPLINARY SYMPOSIUM ON FIELDWORK IN AFRICA. West African Research Center, Dakar, Senegal.

(Contact: In Africa: Wendy Wilson Fall, WARC Director, Rue E x Leon G. Damas, Fann Residence, BP 5456, Dakar, Senegal; Tel.: (221) 8-24-20-62; Fax: (221) 8-24-20-58; e-mail: assist@ucad.sn
In the USA: Leigh Swigart, WARA US Director, African Studies Center, Boston University, 270 Bay State Road, Boston, MA; Tel.: 617-353-3673; Fax: 617-353-4975; e-mail: leighswigart@hotmail.com