PROCEEDINGS OF THE TWENTY-SEVENTH ANNUAL MEETING OF THE

BERKELEY LINGUISTICS SOCIETY

March 22-25, 2001

SPECIAL SESSION ON AFROASIATIC LANGUAGES

Edited by

Andrew Simpson

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SPECIAL SESSION: AFROASIATIC LANGUAGES

New Perspectives on the Cushitic Verbal System*

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0. Introduction

Several Cushitic languages preserve in their verbal systems three different inflectional patterns that appear to be of considerable, albeit different, antiquity:

i. the prefix conjugation (PC);
ii. the suffix conjugation – also called "the old Cushitic suffix conjugation" by Zaborski (1975:163) – that will be referred to as SC1 here in order to distinguish it from
iii. the so-called East Cushitic stative conjugation, that will be referred to as second suffix conjugation (SC2) here, to avoid confusion with the Afroasiatic (AA) inflectional pattern preserved in the Akkadian stative, the Old Egyptian pseudoparticiple, and the Kabyle (Berber) qualitative preterite, that is also frequently called stative conjugation (e.g., in Hayward 2000:90)

Of these three inflectional patterns, the SC1 is much more widespread in Cushitic than the other two, that have a more marginal or recessive status. In those languages that preserve two or even the three of the above inflectional patterns, they may characterise different tenses of the same verb. For instance,

* I am grateful to all those who provided useful comments and objections when a preliminary version of this paper was presented at Berkeley, and to Moreno Vergari and Klaus Wedekind who devoted considerable time in discussing over e-mail several issues about Saho and Beja.

The following abbreviations are used in this paper: **AA** Afroasiatic; **PC** Prefix Conjugation or prefix-conjugated; **SC1** Suffix Conjugation of the 1st type or inflected according the Suffix Conjugation of the 1st type; **SC2** Suffix Conjugation of the 2nd type or inflected according to the Suffix Conjugation of the 2nd type.

Tense is used here as a shorter term for indicating a set of forms that make up a paradigmatic unit, such as affirmative perfective, negative jussive, affirmative imperative, etc. The two main tenses of many Cushitic languages are called non-past and past here, even though in some languages they refer more to aspect than to time; different names given to these or other tenses by single authors are indicated by double quotes.

Oromo and Somali are spelt in their widely used national Latin orthographies, respectively the *qubee afaan Oromoo* and the *xuruufta Soomaalida*. The other Cushitic languages are in phonetic transcription, even though some of them also have Latin orthographies now.

many ᶜAfar verbs have PC in their affirmative and negative non-past and in their affirmative past, but SC2 in their negative past. Similar facts occur in other AA languages as well, e.g., Akkadian verbs have tenses with PC and with the AA stative conjugation, Old Egyptian verbs have tenses with the *sḏm.f* suffix conjugation and with the AA stative conjugation, etc. It also occurs, however, that different conjugational classes of verbs inflect the same tenses according to different inflectional patterns. For instance, the vast majority of Saho-ᶜAfar verbs have the SC1 in their affirmative non-past, a smaller class has the PC in this tense, and a third closed class of mainly stative verbs the SC2. These distributional facts will be further discussed below.

The Cushitic PC has clear cognates in Semitic and Berber, and is generally regarded as common AA heritage. It has received considerable attention in the last decades, e.g., by Sasse (1980), and in the recent debate between Voigt and Zaborski on how to explain the Beja non-past ("present") and its two past paradigms, cf. Voigt (1998) and Zaborski (1997a, 1997b) and the previous literature they mention. It will be discussed only briefly in the following pages. The Cushitic SC1 has reflexes in all the main groups of Cushitic, and is thus obviously old within this branch of AA. Since the end of the XIX century it has been regarded as the result of a common Cushitic innovation. An alternative historical interpretation will be suggested for it in § 3.3. The East Cushitic SC2 has been identified by Hayward (1978) and Sasse (1981:140.) Its comparative and historical analysis was further developed by the present author (Banti 1987 and 1994). Some new data are added in the following pages, together with a historical interpretation that accounts for some of its peculiarities and strengthens its links with the Egyptian suffix conjugation of the *sḏm.f* type – traditionally believed to lack cognates in the other branches of AA – rather than with the AA stative conjugation, as previously claimed by the present author.

1. The Cushitic prefix conjugation (PC)

A preliminary attempt to reconstruct the Cushitic PC inflectional system has been done by Zaborski (1975). Sasse (1980) is a very thorough analysis of the East Cushitic data that were known at that time.

PC verbs are attested in considerable numbers in Beja and Saho-ᶜAfar, where many verbs borrowed from Semitic languages have been shown by Hayward and Orwin (1991) to be accommodated into this class. In a number of other languages only a small set of verbs has PC, instead. Awngi (Agaw aka Central Cushitic) thus has PC "bring", "come", "know", "remain" and "be" (Hetzron 1969:44f.). Also most Omo-Tana languages (East Cushitic) have a few PC verbs. For instance, Rendille inflects in this manner "be (copula)", "be able to", "become", "come", "die", "drink", "eat", "kill", "lay down", "dwell, live", "run", two different verbs meaning "say" (*y-iḍaħ* "he said" and the reduplicated

defective verb *iyeyye* "he said"), and "stop (intr.)", while Bayso has only "be (copula)".

(1) Some prefix-conjugated tenses in Cushitic weak-final verbs

Beja *digi* "come/bring back"	Rendille *imiy* "come"	Arbore *eečče* "come"
Non-Past ("Present") ʔadangi dangiiya m., dangii f. dangi dangi nideeg tideegna ʔideegna	Non-Past ʔamiit tamiit yamiit tamiit namiit tamiitiin yamiitiin	Non-Past ʔan ʔaačča ʔa taačča ʔay yaačča ʔay taačča ʔana naačča ʔin taačča ʔaso yaačča
Past I ("Preterite") ʔadgi tidgiiya m., tidgii f. ʔidgi tidgi nidgi tidgiina ʔidgiin	Past ʔimiy timiy yimiy timiy nimiy timaateen yimaateen	Past ʔin ʔeečče ʔi teečče ʔiy yeečče ʔiy teečče ʔina neečče ʔin teečče ʔiso yeečče
Past II ("Past") ʔadiig tidiiga m., tidiigi f. ʔidiig tidiig nidiig tidiigna ʔidiigna		
Permissive "if only I were to ... !" ʔadaagay tidaagaaya m., tidaagaay f. ʔidaagay tidaagay nidaagay tidaagnay ʔidaagnay	Jussive ʔa ʔimaate ʔa yimaate ʔa timaate ʔa nimaate ʔa yimaateene	Jussive ʔalḍun ʔaačča ʔalḍuy yaaččo ʔalḍuy taaččo ʔalḍuna naaččo ʔalḍuso yeečče
Negative Subjunctive baadagi bi-ddagiiya m., bi-ddagii f. biidagi bi-ddagi bi-ndagi bi-ddagiina biidagiina		

Northern Somali is usually described as having only five verbs with PC in some of their tenses, i.e., "be (copula)", "come", "know", "lie, be there" and "say" (*yidhi* /yiḍi/). This is how also Saeed (1999:97ff., 102) describes it, but the present author (Banti 1988a) showed it to have also a second defective PC verb meaning "say" (*ye* and its variant *yeen* "he said", cognates of Rendille *iyeyye*), and considerable traces of six other PC verbs meaning "be able to", "die", "drink", "eat", "mate", "run" and possibly also of a seventh verb borrowed from Ethiosemitic and meaning "govern, rule", of which only the two derived nouns *ugaas* "tribal chief" and *agaas-in* "orderly arrangement, government" are still used.

Traces of PC verbs are also present in two languages that have no verbs of this kind today. Indeed, Hetzron (1976:33) suggested that the northernmost Agaw language, Bilin, whose verbs all inflect by means of suffixes, preserves PC forms in the names of its two main groups of speakers, the *Bet Ta?aq^{w}e* and the *Bet Tarqe*. *Bet* is the Semitic word for "house", while *Ta?aq^{w}e* and *Tarqe* are the PC 2s. forms of two different verbs meaning "know", the one cognate of Kemant *ax-* "know" and Awngi PC *aq-* "id." (e.g., Awngi *taqe* "you know"), and the other of Xamir *arq-* "id." and present-day Bilin suffix-conjugated *ʔär?-* "id." *Ta?aq^{w}e* and *tarqe* "you know" or interrogative "do you know?", as suggested by Hetzron (1976:33), were synonymous forms used by the two groups of Bilin, and are thus an old shibboleth, "a very convenient isogloss for practical distinction". On the other hand, the present author has suggested in Banti (1988a:49) that the Oromo verb "say", *yedh-* [jeɗ-] in the southern dialects but *jedh-* [ʤeɗ-] in the northern ones with *y-* > *j-* as in southern *yabbii* "calf", *yala* "under", *yidduu* "middle, between" vs. northern *jabbii*, *jala, jidduu*, is the same old PC verb as Saho and ᶜAfar *eḍħe* "say", Somali *idhi* /iḍi/ "id." and Rendille *iḍaħ* "say". The old stem of this Oromo verb is **eḍhe* as in Saho-ᶜAfar, where **-h-* underwent fortition to *-ħ-* but regularly disappeared in Oromo, cf. Sasse (1979:41). In Oromo this verb shifted to the suffix conjugation (SC1) and now has the paradigm shown in (2.a) below:

(2) a. Past of southern Oromo suffix-conjugated *yedh-* "say"

yedhe
yette
yedhe [jeɗe]
yette
yenne
yettan
yedhan

b. Past of Saho PC *eḍħe* "say"

eḍħe
teḍħe
yeḍħe [jeḍħe]
teḍħe
neḍħe
teḍħin
yeḍħin

If one bears in mind that several grammatical formatives have *aC* in Oromo but *iC* in Saho-ᶜAfar – e.g., the passive stem extension Oromo *-am-* vs. Saho-

ᶜAfar *-im-*, the autobenefactive stem extension Oromo *-at-* vs. Saho-ᶜAfar *-it-*, the independent 2p. pronoun Oromo *isan* vs. Saho *atin* and ᶜAfar *isin* – and compares (2.a) with its PC counterpart in Saho shown in (2.b) above, it appears that the Oromo 3m. *yedhe* and 3p *yedhan* are formally identical to Saho *yeḏḫe* and *yeḏḫin* in so far as they are continuations of **y-eḏhe* and **y-eḏhVn*. But in Oromo these forms were reanalysed as *yedh-e* and *yedh-an* with the Oromo endings of the SC1 Past like 3m. *hidh-e* "he bound" and 3p. *hidh-an* "they bound", and originated by analogy the other forms of the paradigm.

The PC is thus best regarded as a recessive inflectional pattern in present-day Cushitic. In some languages it thrives, while in other ones it is preserved only by an increasingly small group of verbs, until it is lost and leaves just a few residues as in Bilin and Oromo. No clear traces of PC have been identified till now in Highland East Cushitic, in Dullay and in the whole of Southern Cushitic.

Some PC tenses from Beja and two Omo-Tana languages, Rendille and Arbore, are shown in (1) above. They are examples of different kinds of developments of the PC in Cushitic. Common to all these paradigms is the use of the same set of subject markers in the non-past and past, as in Berber and in the Akkadian present vs. the Akkadian preterite and its so-called perfect. Tense and a number of mood distinctions are shown by the occurrence of different internally inflected stems, as in Beja *-dangi* vs. *-dgi* vs. *-diig* vs. *-daag*(*-ay*) vs. *-dagi*. Yet different stems may also occur within the same tense for distinguishing the singular vs. the plural as in the Beja non-past, or the 2p. and 3p. vs. the other forms as in the Rendille past and the Arbore jussive. Within the same language the number of different stems varies according to the verb class. For instance, only weak final verbs have a separate permissive stem in Beja – that is also used for a number of jussive-like forms such as Hudson's optative (Hudson 1976:115f.) – while other PC verbs use the past II stem for these forms. On the other hand, a number of Rendille verbs use the same stem for the entire past and the jussive, e.g., Rendille past 3s. *yiil* "he dwelt", past 3p. *yiilleen* "they dwelt", jussive 3m. *ʔa yiille* "may he dwell", unlike the verb *imiy* "come" shown in (1).

The imperative of PC verbs is inflected by means of suffixes, e.g., Beja 2m. *digiiya*, 2f. *digii*, 2p. *digiina* from the past I stem. Unlike Semitic, where the imperative generally has the same stem as the jussive and of the PC preterite – when this is retained – there is much variation across the Cushitic languages in the kind of stem they use for their imperative. In fact, it is only in Beja that it has the same stem as a past tense. In Saho-ᶜAfar is has a separate stem, that is phonologically related but different from the past stem, and always different from the stem of the jussive. Instead, it has the non-past stem in Rendille, that always distinguishes this stem from those of the past and the jussive. Also in Arbore the imperative has the same stem as the non-past tense in most PC verbs, that is different from the past stem; but in this language the jussive singular and

1p. forms have the same stem as the non-past, and the imperative thus also has the same stem as most of the jussive forms. Northern Somali instead uses for the imperative of its PC verbs a wholly separate stem, that is different both from their past stem and from the stem they use in their non-past and jussive paradigms.

Historically there seems to be a tendency to reduce the number of alternating stems in PC verbs. They range from 6 ~ 7 in Beja to 1 ~ 3 in Awngi. The fact that all the PC verbs have the same vocalic suffixes as the SC1 verbs in Boni, Arbore (non-past *-a* vs. past *-e*), Bayso and Awngi, and that this occurs in some forms of PC verbs also in Dasenech and Somali can be interpreted as a separate tendency to assimilate at least partly the PC verbs to the dominant SC1 ones.

Finally, it is worth while pointing out that the subject markers of the PC also occur in the negative subjunctive of all the SC1 verbs in Beja, with the same stem that such verbs use for their other tenses and moods. Beja *tam* "eat" thus has a SC1 negative non-past (1s. *ka-taman,* 2m. *ka-tamtaa,* 2f. *ka-tamtaay*, 3m. *ka-tamya*, 3f. *ka-tamta* etc.), a SC1 past II (1s. *tami*, 2m. *tamtiiya*, 2f. *tamtii*, 3m. *tami*, 3f. *tamti* etc.), but a prefix-conjugated negative subjunctive: 1s. *baatamay* < **bi-ʔatamay*, 2m. *bi-ttamaaya* < **bi-ti-tamaaya*, 2f. *bi-ttamaay*, 3m. *biitamay* < **bi-yitamay*, 3f. *bi-ttamay*, 1p. *bi-ntamay* etc.

2. The Cushitic Second Suffix Conjugation (SC2, aka East Cushitic Stative Conjugation)

2.1. The facts in the present-day languages

It has already been pointed out above that the basic evidence for the SC2 was identified by Hayward (1978) for ᶜAfar. He favoured an origin of it from a compound form involving an old auxiliary. Sasse (1981:140) suggested a reconstruction of the SC2 inflectional endings and compared them to the Afroasiatic stative conjugation, whose better known reflexes are the Akkadian stative, the West and South Semitic perfect, the Old Egyptian pseudoparticiple and the Kabyle preterite (perfect) of quality verbs. The present author (Banti 1987) added further factual evidence from Saho, Somali, Jiiddu and Burji and pointed out (Banti 1994), on the one hand, the similarities between this inflectional pattern and the Old Egyptian suffix conjugation, i.e., the *sḏm.f* type, rather than the pseudoparticiple, and on the other hand the strong links between the SC2 and some East Cushitic invariable verbal paradigms both language internally and across languages. Indeed, there are several instances of SC2 tenses that alternate with invariable verbal paradigms in different syntactic contexts within the same language, or that are matched by invariable tenses in related languages. Some examples of this are given below.

The set of inflectional suffixes of the SC2 is best seen in the Saho and Somali affirmative non-past tenses *ᶜusubiyo* and *cusbi* [ᶜúsbi] shown in (3) below. This rarely described Somali tense has been called "present comparative"

by Andrzejewski (1956, 1969), who reported examples such as *háddaná igá xoolo bádnid* "and yet you have more wealth than me" (Andrzejewski 1969:83), lit. "and yet (*hádda-ná*) you are more (*bádnid*) in wealth (*xoolo*) than me (*i-gá*)". However, it is used also in non-comparative contexts such as *oggóli* "I agree with it" from *oggol* "be in agreement with" or *'Macallimiin ma tihiin?' – 'Haa, íhin'* "Are you teachers? – Yes (*haa*), we are (*íhin*)". Notice that in this last example both the PC non-past 2p. *tihiin* of the verb *ah* "be" and its SC2 non-past 1p. *íhin* are used. The final short vowels appear to be preserved in Saho, but lost in the Somali paradigm. There is also a difference in the 3p. form, that will be briefly addressed further below. It should be also pointed out that Somali more frequently uses a new compound form for the affirmative non-past of these verbs, with an invariable stem followed by the PC affirmative non-past of *ah* "be". This new compound form is the only one that is used in Rendille, according to the published data. The negative non-past of these verbs has in Saho a negative particle *má-* and is followed by a falling-toned vocalic mora that lengthens short final vowels but is realised as *-î* after the final *-n* of the 2p. and 3p. Also the alternation between *-tin#*, *-on#* and *-tiin-V*, *-oon-V* is fully regular in Saho-ᶜAfar as shown by Hayward (1983, 1997). In Somali it has the same negative particle *má* as Saho and a final high tone in all its forms, while its affirmative counterpart is high-toned on the final syllable only in the 2p. and, in verbs with the syllabic structure of *cusúb*, also on the 3m., 3f. and 3p. In verbs with a final long syllable like *wêyn* "be big, be old" or *dhêer* "be long" it has instead a falling tone in the three delocutive forms. The negative non-past of these Somali verbs ends by *-á* in the 3m., 3f. and 3p. This is the old final short vowel preserved in Saho affirmative *ᶜusubá* "he/she is new". In Somali this final *-á* was extended to several verbs that probably ended by different vowels, like Somali *má caddá* "he/she is not white" from *cad* "be white" vs. Saho-ᶜAfar *ᶜadó* "be white", but not to Somali *leh* "have" that has *má léh* "he/she doesn't have", cf. ᶜAfar *lé* "have", Saho *lée* "id." and *ma-lé* "have not" – beside the suppletive *hiná* "have not" – with its converb *ma-lí-h* "not having, without", e.g., *úsuk mandúq malíh yemeeté* "he (*úsuk*) came without a rifle (*mandúq*)". Interestingly, Oromo still has the old negative non-past **ma-lee* that survives as a postposition meaning "without", even though (a.) it has lost **lee* "have" as an independent verb, (b.) its negative particle now is *hin-* not *ma-*, and (c.) present-day Oromo has no SC2 verbs. An example of its use is Oromo *waraqata malee si hin-dabarsanu* "they won't let you (*si*) pass without a permit (*waraqata*)".

The Saho and Somali SC2 negative non-past is matched in Rendille by the wholly invariable form *má ħusúb* for all persons. This is one of the above mentioned instances of cross-linguistic alternation between the SC2 and an invariable verbal paradigm.

(3) Some non-past tenses of East Cushitic verbs of state: Saho *ᶜusuba* "be new", Somali *cusub* [ᶜusúb] "id.", Rendille *ħusub* "id."

Saho Affirmative Non-Past	Saho Negative Non-Past
ᶜusubiyó	má-ᶜusubiyôo
ᶜusubitó	má-usubitôo
ᶜusubá	má-ᶜusubâa
ᶜusubá	má-ᶜusubâa
ᶜusubinó	má-ᶜusubinôo
ᶜusubitín	má-ᶜusubitiinî
ᶜusubón	má-ᶜusubooní

Somali Affirmative Non-Past	Somali Affirmative Subject-Focussed Non-Past	Somali Negative Non-Past
cúsbi ~ cúsb-ahay	cusúb	má cusbí
cúsbid ~ cusúb tahay	cusúb	má cusbíd
cusúb ~ cusúb yahay	cusúb	má cusbá
cusúb ~ cusúb tahay	cusúb	má cusbá
cúsbin ~ cusúb nahay	cusúb	má cusbín
cusbidín ~ cusúb tihiin	cusúb	má cusbidín
cusúb ~ cusúb yihiin	cusúb	má cusbá
	cusúb	

Rendille Affirm. Non-Past	Rendille Aff. S.-Foc. N.-Past	Rendille Negative Non-Past
ħusúb aħe	ħusúb	má ħusúb
ħusúb taħe	ħusúb	má ħusúb
ħusúb yaħe	ħusúb	má ħusúb
ħusúb taħe	ħusúb	má ħusúb
ħusúb naħe	ħusúb	má ħusúb
ħusúb tiħiin	ħusúb	má ħusúb
ħusúb yiħiin	ħusúb	má ħusúb

Somali and Rendille, but not Saho nor ᶜAfar, have special verbal forms when the subject of a sentence is focussed. Verbs that have an SC2 affirmative non-past occur in a wholly invariable form in this case, as shown in (3) above and in examples (4) below. For Somali this is one of the above-mentioned instances of language-internal alternation between a SC2 paradigm and an invariable one.

(4) Neutral focus

Aníg-u	ín-táas	ká	wéyni
I-NOMINATIVE	amount-that	from	am old

"I am older (*wéyni* affirm. non-past 1s.) than that"

Subject focus

Aníg-âa	ín-táas	ká	wêyn
I-FOCUS	amount-that	from	am old

"It is ME who am older (*wêyn* affirm. subject-focussed non-past 1s.) than that"

The personal endings of the SC2 also occur in Saho-ᶜAfar and in Burji in a number of past tenses of verbs that have PC or SC1 in their non-past tenses. In the whole of Omo-Tana including Somali (but not in Bayso and Jiiddu) and in Oromoid (but not in Dirayta aka Gidole) such SC2 tenses are matched by invariable tenses. Some examples of these are shown in (5) below. One may add to these paradigms that the invariable negative past of "come" is *má imán* in Northern Somali (but *má imáan* in Banaadir Somali with a long *-aa-* as in Rendille and Saho), and that the Oromo invariable negative past of *arg-* "see" is *hin-árgine* or *hin-ágarre* with metathesis *-r-g-* > *-g-r-* and assimilation of *-r-n-* to *-rr-*. The present author suggested (Banti 1987:164, 1994:30f.) that these past tenses should be seen as having a stem extension *-n-*, and that the occurrence of the SC2 inflectional pattern vs. an invariable paradigm here should be seen as another instance of cross-linguistic alternation as in the above-seen negative non-past of verbs of state. There is some degree of variation in the kind of stem this extension *-n-* is suffixed to in PC verbs that alternate different stems. In fact, it is added to the jussive stem in Saho-ᶜAfar and in Rendille, to the past one in the Arbore verbs that have such a stem, to the jussive stem or to a separate one in Boni, to the *o*-stem of the verbs that have such a stem in Somali.

(5) Some past tenses with and without *-n-*: Burji *int-ay-* "come", Saho *emeete* "id.", Rendille *imiy* "come", Somali *arag* "see"

	Past tenses with *-n-*	
Burji Affirmative Past	Saho Negative Past	Rendille Negative Past
intanni	mâamaatinniyôo	má imaatan
intandu	mâamaatinnitôo	má imaatan
intanni	mâamaatinnâa	má imaatan
intanni	mâamaatinnâa	má imaatan
intanninu	mâamaatinninôo	má imaatan
intančingu	mâamaatinnitiinî	má imaatan
intanningu	mâamaatinnoonî	má imaatan

	Past tenses without *-n-*	
	Saho Negative Past	Somali Negative Past
	mâamaatiyôo	má arág (~ má arkín)
	mâamaatitôo	má arág (~ má arkín)
	mâamaatôo	má arág (~ má arkín)
	mâamaatôo	má arág (~ má arkín)
	mâamaatinôo	má arág (~ má arkín)
	mâamaatitiinî	má arág (~ má arkín)
	mâamaatoonî	má arág (~ má arkín)

Since Reinisch (1878:434) the Saho negative past *mâamaatinnâa* and its ᶜAfar cognate *máamaatinná* have been seen as having not a stem extension but

an old grammaticalized auxiliary, that Reinisch claimed to be a copula *inna* that, alas, does not exist in present-day Saho-ᶜAfar. For this reason Parker & Hayward (1985:279) suggested that the old auxiliary should rather be *hinna* that occurs in ᶜAfar as "be not, not equal" and in Saho as "have not, lack". Tosco (2000:96) still follows this hypothesis. In the present author's opinion, Parker's suggestion about *hinna* runs against the fact that even in ᶜAfar there are non-negative occurrences of SC2 **amaatinna* + *-y* in the special tense *amaatínnay* that is used in the protasis of contrary-to-fact conditional sentences, as in (6):

(6) ᶜAfar contrafactual conditional

ᶜadaagá-l	amaatínnay	rób	kâa	géyak yen
market-to	if he had come	rain	him	would have gotten

"If he had come to market, rain would have gotten him"

On the other hand, as stated above, the copula *inna* posited by Reinisch (1878:434) and described by him (Reinisch 1878:426) and by Welmers (1952:250) does not seem to exist in present-day Saho-ᶜAfar. No examples of it could be found with native speakers or in Reinisch's texts, and the present author has a strong impression that it was just extracted from the negative past forms by these authors. There is however a locative existential verb, Saho *ine* "be there, exist", ᶜAfar *en* "id.", that may have both PC and SC2 affixes in some of its forms: non-past Saho *aniyo*, *tanito*, *yane* (ᶜAfar *yan*), *tane* (ᶜAfar *tan*), *nanino*, *tanitin*, *yanin*, and past Saho *iniyo*, *tinito*, *yine*, *tine*, *ninino*, *tinitin*, *yinin*. Its parallels in Berber have been pointed out by the present author (Banti 1987:143). Obviously enough, positing an old SC2 stem **inna* from this verb for Saho-ᶜAfar is possible, but it seems rather ad hoc. In addition to this, it requires positing a cognate stem also for Burji and for all the Omo-Tana and Oromoid languages that have invariable negative past forms in *-n-*, if one is to keep them together with the Saho-ᶜAfar and Burji past tenses shown in (5) above. In the present author's opinion, it is more straightforward to posit a stem extension *-n-*, that may be related to the stem extension in *-n-* that can be seen in (9v) to occur in some SC2 verbs of state in Saho-ᶜAfar, and in several SC2 verbs of Omo-Tana languages such as Somali that can be characterised as "durational neuter-passives" or as meaning "to be ... continue ... persist ... in a particular state" (Andrzejewski 1969:71). A much more far-fetched comparison, because of the temporal chasm of five millennia, is the Old Egyptian preterital/perfect *sḏm.n.f* as suggested by the present author (Banti 1987:153).

Burji is the only present-day language that uses one of the tenses in *-n-* seen in (5) above as an affirmative past. Charlotte and Klaus Wedekind (1985:114; 1990:481ff.) have shown this paradigm to be used actually in "non-conclusive" contexts or preceded by the focus particle *ʔinaa*, otherwise it has final *-oo*, e.g., 1s. *intann-oo*, 2s. *intand-oo*. Its negative counterpart has the usual Burji negative

suffix *-ey?i*: 1s. *intann-ey?i*, 2s. *intand-ey?i*, 3m. *intann-ey?i* ... 2p. *intančing-ey?i*, 3p. *intanning--ey?i*. The above-mentioned ᶜAfar tense used in contrary-to-fact conditional sentences, i.e., 1s. *amaatinniyoy*, 2s. *amaatinnitoy*, 3m. *amaatinnay* ... 3p. *amaatinnóonuy*, shows that the affirmative use of this tense is old, and that its use was restricted only secondarily to negative sentences. Another well-known instance of an old tense with past time reference that survived into later stages only as a negative tense is the Classical Arabic use of the old PC preterite as the negative counterpart of its new perfect as shown in (7).

(7) Akkadian and Classical Arabic *bny* "build"

	Affirmative	Negative
Akkadian	abni "I built"	ul abni "I didn't build"
	tabni "you (m.) built"	ul tabni
	tabnî "you (f.) built"	ul tabnî
	ibni "he built"	ul ibni
	. . .	. . .
Classical Arabic	banaytu "I built"	lam ?abni "I didn't build"
	banayta "you (m.) built"	lam tabni
	banayti "you (f.) built"	lam tabnī
	banā "he built"	lam yabni
	. . .	. . .

An alternative form of the Saho Negative Past that lacks the *-n-* is also shown in (5). Its ᶜAfar counterpart is described by Bliese (1981:85) for "some dialects": *máabbiyó*, *máabbitó*, *máabbó*, *máabbó*, *máabbinó*, *máabbitón*, *máabbón* from the PC verb *oobbe* "hear". Bliese (1981:85) reports for the Aussa dialect of ᶜAfar also a partially contracted paradigm *má-katiyyó* < *má-katinniyó*, *má-katittó* < *má-katinnitó*, *má-katinná* ... *má-katinnoonú* from *kat-* "leave". But the Saho-ᶜAfar type *máabbiyó*, *máabbitó*, *máabbó* ... *máabbón* may not be just a phonologically reduced variant of the more common type Saho *mâamaatinniyôo*, ᶜAfar *máamaatinniyó* like the above type *má-katiyyó* < *má-katinniyó*, because negative past forms without *-n-*, but with no inflection for subject concord, also occur in a few Somali verbs. For instance, *arag* "see" has *má arág* for all persons beside the more regular *má arkín* "I/you/he &c. didn't see".

Finally, it should be pointed out that SC2 inflectional endings occur in Northern Saho also in two other little-reported groups of tenses, (a.) the negative relative tense in *-neħe*, that has no counterpart in ᶜAfar, and (b.) the *k*-participle of the negative relative forms in *-neħe-* and of verbs with PC and SC2 – but not SC1 – in their affirmative non-past tenses. Notice that the *k*-participle is invariable in ᶜAfar, and that verbs with PC and SC2 in their affirmative non-past

tenses may also have invariable *k*-participles in Northern Saho, e.g., *amíitik* "coming" or *kiħínik* "loving", or a functionally equivalent invariable participle with a final low-toned *-ii*, e.g., *amíitii* and *kiħínii*. Verbs with SC1 affirmative non-past tenses have instead either invariable *ħábaa* "leaving" or the partially inflected 1s. *ħábak*, 2s. *ħábtak*, 3m. *ħábak*, 3f. *ħábak*, 1p. *ħábnak*, 2p. *ħábtan*, 3p. *ħában* or *ħábak* with endings that look more like the SC1 affirmative non-past. Some paradigms and examples of the use of these further SC2 forms are given in (8) below.

(8) Some tenses of Saho *emeete* "come",

Negative Relative	Inflected *K*-Participle of the Negative Relative	Inflected *K*-Participle
amiitinniħiyó	amiitinniħíyuk	amiitíyuk
amiitinniħitó	amiitinniħítuk	amiitítuk
amiitinneħé	amiitinnúħuk	amíituk
amiitinneħé	amiitinnúħuk	amíituk
amiitinniħinó	amiitinniħínuk	amiitínuk
amiitinniħitín	amiitinniħítin	amiitítin
amiitinnoħón	amiitinnóħon	amíituk

Negative Relative
Aqriinniħitó kitáab yi iybullúu!
that you don't read book me show
"Show me the book you didn't/don't/shall not read!"

Inflected *K*-Participle
Amiitíyuk (yi) yublé
coming.1s. me he-saw
"He saw me while I was coming"

Inflected *K*-Participle of a Negative Relative
Yówa esserinniħituk mâadéyn
me you-having not asked don't go away
"Don't go away before asking (from *essere* "ask") me!"

To conclude, the SC2 inflectional pattern occurs in a few present-day East Cushitic languages: all varieties of Saho-[c]Afar, Somali and a few of its dialects such as Jiiddu (cf. Banti 1987:133f.), and Burji.

In Saho-[c]Afar and the Somali cluster it is attested in the Present tense of a separate inflectional class of verbs of state, the main groups of which are shown in (9) below. The SC2 personal endings have been seen to occur also in a number of affirmative and negative past tenses in Burji and Saho-[c]Afar, and in

several further affirmative and negative tenses of both Saho and ᶜAfar: the Saho negative relative, a number of Saho inflected *k*-participles, and the ᶜAfar contrafactual tense that occurs in the protasis of contrary-to-fact conditional sentences.

(9) The main groups of verbs with SC2 non-past tenses in Saho-ᶜAfar and Somali

Saho-ᶜAfar	Somali
i.	i.
kinni "be (copula)"	ah "be (copula)"
hinna ᶜA. "be not (negative copula)"; S. hina "lack, be without"	
ii.	ii.
lee "have"	leh "have"
sinni ᶜA. "lack, be without"	la' "have not"
iii.	iii.
niᶜiba "hate, dislike"	neceb [neᶜéb] "hate, dislike"
kiħina S. "love"; ᶜA. "be happy"	jecel [ʤeᶜél] "love, like"
	og "know"
	moog "know not, ignore"
iv.	iv.
ᶜado "be white"	cad [ᶜád] "be white"
ᶜasa "be red"	cas [ᶜás] "be red"
ᶜusuba "be new"	cusub [ᶜusúb] "be new"
ɖeeri ᶜA. "be long" (S ɖeeɖa)	dheer [ɖêer] "be long"
uma "be bad"	xun [ħún] "be bad"
v.	v.
ɖamħ-ini "be cold", cf. ᶜA. ɖamaħe "become cold", Som. dhaxam-ood- /ɖaħam-ood-/ "feel cold"	beer-an "be cultivated", cf. beer "cultivate"
fid-ini "be wide, be spread out", cf. ᶜA. fidise "spread out", Som. fid "spread (intr.)"	diidd-an "be opposed to", cf. diid "oppose"
	qayb-s-an "be divided", cf. qayb-is- "divide"
	cagaar-an [ᶜagaarán] "be verdant", cf. cagaar "verdure"

In addition to this, the SC2 present tenses have been seen to alternate both in the same language (Somali) and cross-linguistically (Rendille) with invariable paradigms, while the SC2 negative past tenses of Saho-ᶜAfar are matched by invariable negative past tenses in several Omo-Tana and Oromoid languages.

2.2. Historical interpretation

The four interlocutive SC2 endings were reconstructed by Sasse (1981:140) as 1s. **-i-yu*, 2s. **-i-tu*, 1p.**-i-nu*, 2p. **-i-tin*. The present author (1994:15) was less sure about the final vowel of the 1s. because of Burji *-i* vs. 2s. *-du* and 1p. *-nu* and posited 1s. **-iyV* or **-i*. Yet short final **-i* should have disappeared in Somali, and the *-i* actually attested in Burji and Somali can be accounted for if one posits an old **-i-yi* that either alternated with **-i-yu* in Saho-ᶜAfar, or later became **-iyu* > *-iyo* through analogical pressure in this language group. ᶜAfar has *-o-* also in its 2p. *-iton*, instead of the older *-itin* preserved in Saho, through analogical levelling with the other endings. The reconstructed endings are thus the following ones:

(10) Reconstructed interlocutive SC2 inflectional endings

1s.	*-i-yi (~ *-i-yu)
2s.	*-i-tu
1p.	*-i-nu
2p.	*-i-tin

Some aspects of the history of short final vowels in East Cushitic are not entirely clear, and the reasons for the Saho-ᶜAfar shift **-u* > *-o* are obscure. Other developments are quite regular. Burji deleted **-i-* in the 2s. and 2p., voiced **-tu* into *-du* after *-n-* but palatalised **-ti-* to *-či-* after *-n-*. Somali voiced **t* to *d* after vowels. The final **-ku* of Burji 2p. *-čin-gu* and 3p. *-in-gu* has not been explained yet, even though a **-kV* suffix after the final *-n* of the 2p. and 3p. also occurs in the Awngi perfect definite (e.g., 2p. *destáka* < **-tin-kaa*, 3p. *deska* < **-in-kaa* from *des-* "study"), in Hadiyya (e.g., converb I 2p. *mattakkaʔa* < **mar-tin-ka*, 3p. *marakkaʔa* < **mar-in-ka* from *mar-* "go"), and in several Dullay tenses (e.g., Harso present 2p. *áčč*an-kú*, 3p. *áčč*an-kí* from *ačč-* "go"). It is thus an isogloss that cuts through three different groups of Cushitic languages. Appleyard remarked that the formative *-ka* in the above Awngi 2p. and 3p. forms "is otherwise a noun plural suffix" (Appleyard 1992:132.)

The three delocutive forms are more complex. One thing is common to the three groups of languages: the very un-Afroasiatic fact hat the 3m. and 3f. are identical. Sasse (1981:140) reconstructed **-a* here on the basis of Somali. Yet Burji has *-i* and it has already been stated above that the Somali high-toned ending *-á* probably spread through analogy. This is best accounted for by stating that the two singular delocutive forms simply had no ending, and that Somali *-á* and Burji *-i* spread analogically from forms whose stem ended in **-a* and, respectively, **-i*. The 3p. is similar to the two singular delocutive forms in

Somali, but has *-in-gu* with *-in-* like several other tenses in Burji, for instance, 3p. non-past *intay-in-gu* "they come", jussive *intay-in-g-ooni* "they should come", converb *intay-in-g-i* "they came and ...", "after they came ...". Saho and ᶜAfar have *-on* here that may be due to analogy because it has *-Vn* like the 3p. forms in the PC and SC1 inflectional patterns, and *-o-* like the 1s., 2s., and 1p. of the SC2 set of endings. It is thus likely that the Somali pattern with a single form for the three delocutive forms is older than the other two. Notice that the Saho inflected *k*-participle has 3p. *-uk* like its 3m. and 3f. instead of *-on*, as shown in (8) above. Yet this is the only instance in Saho of a Somali-like pattern in a SC2 tense, and may be taken as being due to interference with the invariable participles in *-ii* and *-ik*. ᶜAfar has invariable *-uk* for all persons from PC verbs, e.g., *amáatuk* from *emeete* "come".

As stated above, the present author (Banti 1987:156, 1994:14f.) pointed out some similarities between the SC2 set of personal suffixes and the Egyptian suffix conjugation. This is a conjugational type that occurred in most verbal tenses of Old Egyptian and remained formally quite stable until Late Egyptian and Coptic – the Manichean and Christian literary language of the first half of the I millennium CE – even when the old tenses were replaced by new periphrastic forms. It is shown in (11) below.

(11) The personal endings in the Egyptian Suffix Conjugation.
(Reconstructed forms follow Loprieno 1995:64)

	Old Egyptian (*sḏm* "hear")		Coptic (*nese* "be beautiful")	
1s.	-j	sḏm.j	-i	nesōi
2m.	-k < *-ku	sḏm.k	-k	nesōk
2f.	-ṯ [č] < *ki	sḏm.ṯ	-Ø	nesō
3m.	-f < *-su (?)	sḏm.f	-f	nesōf
3f.	-s < *-si	sḏm.s	-s	nesōs
1p.	-n < *-ina	sḏm.n	-n	nesōn
2p.	-ṯn [čin] < *-kina	sḏm.ṯn	-ten	nesōten
3p.	-sn < *-sina	sḏm.sn	-u	nesōu

The Ø-ending in the Coptic 2f. is phonologically regular, because Old Egyptian *-ṯ* merged here with *t* and was lost word-finally after vowels. On the other hand, the replacement of Old Egyptian 3p. *-sn* by Late Egyptian *-w*, Coptic *-u* has not been explained satisfactorily till now.

Two facts are of special importance here among the peculiarities of the Egyptian suffix conjugation. The first one is that its personal endings are identical to the enclitic possessive pronouns through he whole history of Egyptian. This is shown in (12a) below, with the example of Old Egyptian *r3*, Coptic *ro* (*rō-* with possessive pronouns) "mouth". The only exception is the 2p. where *-ten* was sometimes replaced by *-teten* from a different series of proclitic

pronouns, cf. *nesōten* "you are beautiful" in (11) vs. *a-teten-tōm* "you closed" in (13). The second one is that from Old Egyptian to Coptic the personal endings do not occur when the verbal form is followed by an overt subject noun. This happens only with the Egyptian suffix conjugation, not with the Egyptian pseudoparticiple that had different personal endings and retained them in all contexts. In this manner, each suffix-conjugated tense had an ending-less form beside the forms shown in (11) above. In Old Egyptian this was, e.g., *sḏm*. In Coptic this caused a different phonetic development and produced, e.g., *nese* before overt nouns but *nesō-* before pronominal suffixes. Examples of this are shown in (12b).

(12) a. Clitic possessive pronouns in Old Egyptian and Coptic

	Old Egyptian (*r3* "mouth")		Coptic (*ro* "id.")		
1s.	-j	r3.j "my mouth"	-i	rōi	"my mouth"
2m.	-k	r3.k	-k	rōk	
2f.	-t [č]	r3.t	-Ø	rō	
3m.	-f	r3.f	-f	rōf	
3f.	-s	r3.s	-s	rōs	
1p.	-n	r3.n	-n	rōn	
2p.	-tn [čin]	r3.tn	-ten	rōten	
3p.	-sn	r3.sn	-u	rōu	

b. Old Egyptian and Coptic suffix-conjugated forms with subject nouns

Old Egyptian

zḫ3	ḥm.f	ḏs.f	m	ḏbᶜwj.fj
wrote	Majesty-his	himself	by	fingers.DUAL-his.DUAL

"His Majesty himself wrote (*zḫ3*, vs. *zḫ3.f* "he wrote") it (viz. the letter) with his two fingers"

Coptic

nese -	peu.kosmos	nesō.f
is beautiful	their-world	beautiful-he
"Their world (m.) is beautiful"		"It (viz. their world) is beautiful"

In Old Egyptian most tenses and moods were inflected according to the above pattern of the Egyptian suffix conjugation. From *sḏm* "hear" there was thus an unmarked aorist *sḏm.f*, a differently vocalized preterital *sḏm.f*, a perfect and perfective *sḏm.n.f*, a perfective *sḏm.t.f*, a prospective *sḏm(.w).f* indicating wishes, events expected to occur, etc. These forms were increasingly replaced by new periphrastic forms during the later stages of the language. In Coptic this conjugational pattern survived only in a number of old and new auxiliaries and in a small set of suffix-conjugated verbs. For instance, the tense marker *a* (2s. *are-*) + pronominal suffixes in the Coptic perfect (aka perfect I) is what remains

of the old suffix-conjugated preterital *sḏm.f* of *jrj* "do" used as an auxiliary in the Late Egyptian periphrastic tense *jr.f stm* "he heard", lit. "he did hear".

(13) a. The Coptic Perfect (*tōm* "close")

1s.	a-i-tōm "I closed"
2m.	a-k-tōm
2f.	are-tōm
3m.	a-f-tōm
3f.	a-s-tōm
1p.	a-n-tōm
2p.	a-teten-tōm
3p.	a-u-tōm

With a subject noun

a-p-kake	tōm	en-nef-bal
PERF-ART-darkness	close	PREP-his.PL-eye

"Darkness hath blinded his eyes" (I Joh 2,11)

b. The main groups of Coptic verbs with Egyptian Suffix Conjugation

i.
Auxiliaries

ii.
meše "know not"
hne "be willing"

iii.
peje "(he etc.) said"

iv.
nanu "be good"
naše "be plentiful"
naa "be great"
nese "be beautiful"

The full conjugation of the Coptic perfect of *tōm* "close" with pronominal and nominal subjects is shown in (13a) above, while (13b) lists the main groups of verbs that still preserve the Egyptian suffix conjugation in Coptic. It is interesting to observe that, with the exception of the auxiliaries and of the transitive verb *peje* "(he etc.) said", the other two groups are verbs of state that are very similar to the third and fourth group of East Cushitic verbs with SC2 non-past tenses listed in (9) above. Indeed, the Coptic *meše*-group and the East Cushitic *niʿiba/neceb*-group indicate mental states, while the Coptic *nanu*-group

and the East Cushitic *ᶜado/cad*-group indicate qualities. In other words, Coptic provides good evidence that an inflectional pattern that characterized most tenses of all classes of verbs five thousand years ago was restricted to auxiliaries, a preterital tense of the verb "say", and a small group of verbs indicating mental states and qualities by the first half of the first millennium CE. The present-day distribution of the SC2 in a few tenses of all classes of verbs and in the non-past tense of verbs of state indicating mental states, qualities, having and lacking, etc. cannot be taken as an argument against its possible historical connection with the Egyptian suffix conjugation.

As stated above, Sasse (1981:140) and the present author (Banti 1987:154f.) compared the SC2 personal endings to those of the AA stative conjugation. The late Hetzron (1990:584) accepted this comparison and discussed one of the problems it raises, i.e., the lack of a velar element in the 1s. **-i-yo* vs. the its presence in the better-known reflexes of the 1s. of the AA stative conjugation: Akkadian *-āku*, Ge'ez *-ku*, Kabyle Berber *-ɣ*, Old Egyptian pseudoparticiple *-kw* ~ *-kwj* ~ *-kj*. He criticised the present author's (Banti 1987:156) suggestion of an isogloss linking the East Cushitic 1s. **-i-yo* and the palatal glide in the 1s. *-j* of the Egyptian suffix conjugation because the endings of the latter

> are likely to be of possessive origin, not related to the stative endings. The complete absence of a first person *k* in Cushitic may be a reasonably good Cushitic vs. Semitic-Egyptian-Berber isogloss. (Hetzron 1990:584)

Obviously enough, the point made by Hetzron is right. Mixing up the AA stative conjugation and the Egyptian suffix conjugation in the same inflectional pattern is questionable, unless there are sound reasons for doing so. And yet, the present author again pointed out in a later paper (Banti 1994:14f.) that also the East Cushitic 2p. **-i-tin* could match the 2p. **-kin* > Old Egyptian *-ṯn* > Late Egyptian *-tn* and Coptic *-ten* of the Egyptian Suffix Conjugation. Let us then see whether the entire set of East Cushitic SC2 inflectional endings can be compared to the Egyptian Suffix Conjugation.

One point has been already discussed above. Their distributions in Coptic and in present-day East Cushitic are not in contradiction with each other. The two other points that shall be taken into account are the relationship of the SC2 endings with the East Cushitic possessive pronouns and of the SC2 interlocutive endings with the invariable forms such as the 3m. and 3f. on the one hand and the wholly invariable paradigms such as the Somali and Rendille affirmative subject-focussed non-past of verbs of state seen in (3), or the Omo-Tana and Oromoid negative past tenses in (5) above.

Indeed, it has already been pointed out above that during the whole history of Egyptian the personal endings of the suffix conjugation and the possessive pronouns remained identical. This similarity gave rise to the hypothesis of a nominal origin for this inflectional pattern; see Schenkel (1990:115ff.) for a

discussion of the problems it raises. The possessive pronouns of Cushitic have been reconstructed recently by Sasse (1981:144), Appleyard (1986), Ehret (1987, 1995), ans Zaborski (1991).

(14) The Egyptian pronominal suffixes compared to the East Cushitic possessive pronouns and the SC2 endings

	Egyptian	East Cushitic SC2 Endings	East Cushitic Possessive Pronouns
1s.	-j	*-i-yi (~ *-i-yu)	*yi ~ *yu (~ *ya)
2m.	-k < *-ku	*-i-tu	*ku ~ *ki (~ *ka)
2f.	-t̲ [č] < *ki		
3m.	-f < *-su (?)		*su (~ *si)
3f.	-s < *-si		*si (~ *sa ?)
1p.	-n < *-ina	*-i-nu	*inu ~ *ni
2p.	-tn [čin] < *-kina	*-i-tin	*kin ~ *kunV
3p.	-sn < *-sina		*sinV ~ *sunV

The above reconstructions of the East Cushitic possessive series is quite tentative not only because there are no ancient attestations of these languages, but also because they restructured their pronominal systems in several instances. This accounts for the wide range of variation in their vocalisations. The third person possessives are slightly different from those suggested for East Cushitic by Sasse (1981:144, 3m. **(u)su*, 3f. **(i)ši* and 3p. **sunu*), and for Common Cushitic by Appleyard (1986:221, 3m. **ʔus-a(a)* ~ **ʔis-a(a)*, 3f. **ʔiš-ii* ~ **ʔiš-ee* and 3p. **ʔusun-* ~ **ʔišin-* like the subject series), Ehret (1995:155f., 3m. **ʔusu*, 3f. **ʔisi* and 3p. **ʔusun-* ~ **ʔisin-* with no indication whether they were used as independent stressed pronouns or as clitic possessives), and Zaborski (1991:77) who reconstructed for the dependent pronouns 3m. **-usa* ~ **-isa*, 3f. **iši* ~ **išee*, and 3p. **-isunV* ~ **-isinV*. Indeed, most East Cushitic languages replaced the inherited delocutive possessives by means of new forms. For instance, Oromo created its new third person possessives by means of the genitive of the independent pronouns: Boorana Oromo 3m. *isa* "him", 3f. *isii* "her", 3p. *isáan* "them" → Genitive *isáa* "his", *isíi* "her", *isáaní* "their". These further evolved into possessive clitics in Western Oromo: 3m. *-sáa*, 3f. *-šée*, and 3p. *-sáanii*. The comparative evidence from the other branches of AA, as well as from Beja 3m. and 3f. *-s*, 3p. *-sna* (in the Beni Amir and Halanga varieties), Dahalo 3m. *-su(-ʔu)*, 3f. *-si(-ʔi)*, and West Rift Southern Cushitic 3m. and 3f. *-s*, shows the only East Cushitic languages that still preserve reflexes of the old third person possessives to be Kambata (cf. Korhonen *et al.* 1986:105), Sidamo and Jiddu (cf. Banti 1984:139.)

(15) Third person possessives in Kambata, Sidamo and Jiddu

	Kambata	Sidamo	Jiddu
3m.	-si	-si	-s
3f.	-se	-se	-s
3p.	-ssa < *-sna	-nsa < *-sna	-s

If one compares the 1s. and 1p. endings of the SC2 with the reconstructed possessive pronouns, no major problem arises, with the exception of the *-*i*- hat precedes the final part of the endings also in the 2s. and 2p. The present author already pointed out in Banti (1987:157) at this is a problem that still awaits a viable explanation. The 2s. and 2p. endings match the overall shape of their corresponding possessive pronouns but have *t* for **k*. Within Egyptian the development of **k* to palatalised *ṯ* and later to *t* occurred in second person pronouns but in almost no other environment, as pointed out by Ehret (1995:175), while in Semitic the replacement of the older -*k*- in the West Semitic Perfect 1s. ending -*tV* (Ugaritic <-*ṯ*>, Hebrew -*tī*, Classical Arabic -*tu*, etc.) is easily explained through analogical levelling with the 2.nd persons where -*t*- is an AA heritage. However, neither Sasse (1979) nor Ehret (1987, 1995) found evidence of a sound shift that fronted Cushitic **k* to *t*, and the most likely explanation for 2s. **-i-tu* and 2p. **-i-tin* has to be analogy, either with the endings of the SC1 that have -*t*- in the 2s. and 2p., or with the independent pronouns, reconstructed by Appleyard (1986:214f.) as 2s. **ʔati* ~ **ʔatu* for East Cushitic from older Cushitic **ʔanti* ~ **ʔantu* and 2p. East Cushitic **ʔatin* ~ **ʔatun* from older Cushitic **ʔantin* ~ **ʔantun*. (Interestingly, there is also evidence of interference in the opposite direction, i.e., from the possessive 2p. upon the independent 2p. in East Cushitic, that produced the form **ʔakin* preserved in ᶜAfar *ísin*, Bayso *ísin* and possibly also in Oromo *isin* ~ *isan*, Konso *išina*, Burji *ašinu* etc., cf. Sasse 1979:11, Banti 1984:149f., and Appleyard 1986:217f.)

But why is there no trace of a final **-s*- in the three delocutive forms of the SC2? Here another parallel with the Egyptian suffix conjugation can be found. Remember that this inflectional pattern, but not the Egyptian pseudoparticiple, typically lacks pronominal suffixes when an overt subject noun (N) follows the verb. This is represented in (16a) below. This behaviour remained quite stable in Egyptian until Coptic, the last literary stage of this language family that later became extinct. If one posits a similar behaviour also for the ancestral East Cushitic SC2, one can suggest that it was later simplified into the pattern shown in (16b), i.e., the stage of the Somali non-compound affirmative and negative non-past tenses of verbs of state, when the ending-less form used with overt subject nouns came to be used also when such nouns were not present, and the older forms with pronominal endings were completely lost in the third persons. In Saho-ᶜAfar and Burji this stage was subsequently normalised by creating a

new inflected 3p. form by analogy with the other inflectional patterns of verbs. Most Ono-Tana and Oromoid languages, instead, went a step further and created a new pattern by extending the ending-less delocutive forms to the interlocutive contexts and thus giving rise to invariable paradigms (i.) when the subject of a verb of state was focussed, (ii.) with negative past tenses of all verb classes, and (iii.) in the Rendille negative non-past of verbs of state. This is shown in (16c.)

(16) a. Stage I (Egyptian and *East Cushitic) b. Stage II (Somali verbs of state)

1s./p.	V-Pro	V-Pro
2s./p.	V-Pro	V-Pro
3m./f./p.	V-Pro ~ V-Ø N	V-Ø

c. Stage IIIa (Saho-ᶜAfar and Burji) Stage IIIb (Omo-Tana and Oromoid)

1s./p.	V-Pro	V-Ø
2s./p.	V-Pro	V-Ø
3m./f.	V-Ø	V-Ø
3p.	V-Ending	V-Ø

In this manner, the suggestion that the East Cushitic SC2 is a cognate not of the AA stative conjugation, but of the Egyptian suffix conjugation provides an explanation for some otherwise puzzling facts of East Cushitic and, in addition, a different view of the AA verbal system. On the one hand, (i.) the lack of distinction between 3m. and 3f. in all the East Cushitic reflexes of the SC2 is seen not as an ad hoc phonological development – as suggested by Banti (1987:154) – but as due to analogical simplification, while (ii.) the invariable paradigms in (3) and (5), strange as they are in languages that use finite variable tenses elsewhere, are explained as due to analogical extension of the old ending-less delocutive forms used with overt subject nouns in a previous stage of East Cushitic and in Egyptian. On the other hand, (iii.) the Egyptian suffix conjugation ceases to be an inner-Egyptian innovation, but can be seen as an inflectional pattern that Egyptian shares with one of its southern sister groups, i.e., Cushitic.

3. The Cushitic Suffix Conjugation (SC1, aka Old Cushitic Suffix Conjugation)

3.1. The traditional interpretation

It has already been stated in the introductory section of this paper that the SC1, i.e., the Cushitic suffix conjugation, is attested in all the main groups of Cushitic, at least in considerable traces. In some languages such as Saho and ᶜAfar, the

Omo-Tana group, Oromoid, and the West Rift group of Southern Cushitic, the tenses used in main clauses largely follow this inflectional pattern. In other languages only some of them do. For instance, in Agaw the endings of most main clause tenses have a labialised velar element that does not match the SC1 inflectional pattern, as in the Bilin affirmative non-past 1s. *gäbäk^{w}ə́n*, 2s. *gäbräk^{w}*, 3m. *gäbäk^{w}*, 3f. *gäbätí*, 1p. *gäbnäk^{w}ə́n*, 2p. *gäbdänǎ́k^{w}*, 3p. *gäbnǎ́k^{w}* from *gäb-* "refuse". Nevertheless, even in Agaw the tense that has been called imperfect indefinite by Hetzron (1969:13; it "expresses an action either in present or in future the execution of which seems uncertain and indefinite ... also used for general present, for what usually happens") has been shown by Appleyard (1992:132) to be a regular reflex of the SC1 non-past tenses in other Cushitic languages, because Awngi *e* regularly corresponds to Agaw *ä*, that derives from Cushitic short **a*, while Awngi and Agaw *a* is from Cushitic long **aa*. An example of this tense is shown in (18) together with other main clause SC1 tenses in languages that belong to the four major branches of Cushitic. It appears that the main peculiarities of this inflectional patterns are the following ones:

(17)
i. The verbal stem remains the same in the non-past and past tenses.
ii. Tense distinctions are expressed by vowel alternations in the endings: *a* or developments if it in the non-past vs. a front vowel or a likely development of it in the past (*e*, *i*, and Somali *ay*).
iii. Subject concord is expressed by the consonants in the endings. The 2s. and the 3f. have *-t-*. The 1p. has. *-n-*. Also the 2p. has *-t-*, but this is followed in Beja, Awngi, ᶜAfar and Somali by an *-n(-)* that aligns it with the 3p. against the singular and 1p. forms. The Southern Cushitic West Rift languages have *r* here in their past tenses, e.g., Burunge 2p. *-tir^{i}* and 3p. *-ir^{i}*, that can be from **n* as in a few other grammatical formatives like the Burunge instrumental and comitative *-ri-* vs. Oromo *-n*, the 1p. possessive *-ri* vs. East Cushitic **ni*, etc. But the 2p. and 3p. are different in the West Rift non-past tenses.

Beja is one of the few Cushitic languages that systematically distinguish the 2m. from the 2f. forms in verbal paradigms. It preserves the SC1 non-past tense in its negative non-past, and the SC1 past tense in its past II, that is now used for expressing simultaneity or imperfect in the past (Klaus Wedekind, personal communication).

The final *-h* and the high tone on the last vowel in the ᶜAfar forms indicate that no NP or PP constituent is focused, cf. Parker & Hayward (1985:222f.). In other contexts affirmative verb forms are low-toned and lack the final suffix *-h*, e.g., *Maħámmad tume* "It was Mohammed who beat it", or *kímal tumen* "they

beat it YESTERDAY". The last example also shows that past *-eeníh* alternates synchronically with *-en* – and similarly non-past *-aanáh* and *-an* – because of the same phonological facts discussed by Hayward (1983, 1997) that were already mentioned with reference to the Saho SC2 forms in (3) above.

(18) Cushitic cognate SC1 main clause tenses

Beja *tam-* "eat"	Awngi *des-* "study"	[c]Afar *tum-* "beat, poke"
Negative Non-Past	"Imperfect Indefinite"	Affirmative Non-Past
ka-taman	desé < *das-a	tumáh
ka-tamtaa *m.*, ka-tamtaay *f.*	desté	tuntáh
ka-tamya	desé	tumáh
ka-tamta	desté	tuntáh
ka-tamna	desné	tunnáh
ka-tamtaana	destànà	tuntaanáh
ka-tamyaan(a)	desànà	tumaanáh
Past II		Affirmative Past
tami		tuméh
tamtiiya *m.*, tamtii *f.*		tuntéh
tami		tuméh
tamti		tuntéh
tamni		tunnéh
tamtiina		tunteeníh
tamiin(a)		tumeeníh

Somali *tum-* "beat, poke"	Burunge (nasal stem) *koom-* "have"	
Affirm. main-clause Non-Past	Affirmat. "Imperfective"	Negative "Imperfective"
w-âan tumaa	ha koom[a]	ha koomaa-ba
w-âad tuntaa	ha kont[a]	ha kontaa-ba
w-ûu tumaa	kon[a]	konaa-ba
w-ây tuntaa	kont[a]	kontaa-ba
w-âan tunnaa	ha kon[a]	ha konaa-ba
w-âad tuntaan	ha kontay	ha konta?ii-ba
w-ây tumaan	konay	kona?ii-ba
Affirm. main-clause Past	Affirmative "Perfective"	Negative "Perfective"
w-âan tumay	háa koom[i]	háa koomii-ba
w-âad tuntay	háa kont[i]	háa kontii-ba
w-ûu tumay	yáa koom[i]	yáa koomii-ba
w-ây tuntay	yáa kont[i]	yáa kontii-ba
w-âan tunnay	háa kon[i]	háa konii-ba
w-âad tunteen	háa kontir[i]	háa kontirii-ba
w-ây tumeen	yáa konir[i]	yáa konirii-ba

Also the Somali forms like *w-âan tumay* "I beat it" indicate that no NP or PP consituent if focussed. Here the low-toned verbal forms are preceded by the subject clitic pronouns 1s. *aan*, 2s. *aad* etc. and by *w-*, a reduced form of the particle *wâa* that precedes nominal predicates and most kinds of verbal

predicates when no other constituent is focussed. It has been called an indicator by Andrzejewski (e.g., 1975:11) but a declarative sentence type marker by Saeed (1999:118f.) Finally, the preverbal particles *ha* in the Burunge interlocutive affirmative imperfective forms, and *háa* ~ *yáa* in its affirmative perfective ones are instances of the preverbal clitic complexes that are particularly developed in Southern Cushitic. In Kießling's analysis (1994:147), e.g., *háa* includes /ha/ a marker of 1. and 2. person subjects and /áa/ a marker of preterite time reference, that is preceded in *yáa* by /hi/ a marker of 3. person subjects. In addition to this, in the negative verbal forms of Burunge the suffix *-ba* lengthens preceding short vowels, and thus prevents them from being reduced to murmured voiceless vowels as in their affirmative counterparts.

Giovanni Colizza, a student of Leo Reinisch, was probably the first to publish (Colizza 1889:138) the idea that the inflectional type shown in (18) is a periphrastic form. After showing the SC1 paradigms in non-past 1s. *beeta*, 2s. *betta* etc., and past 1s. *beete*, 2s. *bette* etc. of Saho *beete* "eat", that he calls "un verbo denominativo" he goes on saying that "qui *bēt* è un sostantivo ed *-a*, *-ta* ecc. ... sono le voci del verbo sostantivo *a*, essere" ["here *beet* is a noun and *-a*, *-ta* etc. ... are forms of the verbum substantivum *a* 'be'".] In modern words, he claimed the SC1 conjugational type to have its origin in old periphrases where a nominal form was followed by the fully inflected PC tenses of an old verb that he referred to as *a* "be", that had been grammaticalized as the endings of the new conjugational type. Colizza quoted PC verbs by the 1s. of their non-past tense, while it is now preferred to quote them in a form of their past tense that better represents their basic stem. The verb he mentioned actually means "say", and is still present in Saho-ᶜAfar as Saho *ee* – e.g., non-past 3m. *yaa*, 3f. *taa*, 3p. *yan*; past 3m. *yee*, 3f. *tee*, 3p. *yen* – and as ᶜAfar **e*. In the latter language, however, it has been replaced in the 1s. and in the imperative by the corresponding forms of *eḍḥe*, another verb of saying that was already seen in (2b) above. All its other forms are preceded by a petrified old prefix **in-* that is assimilated to a following *y-* and *n-*. It appears clearly in the ᶜAfar imperative forms 2s. *in-ḍíḥ* and 2p. *in-ḍíḥa*, when one compares them with their Somali cognates 2s. *dhéh* [ḍéh] and 2p. *dháha* [ḍáha], but it doesn't seem to survive in other forms of present-day ᶜAfar. The main paradigms of this verb are shown in (19). It has already been said in § 1 above that this very verb still occurs in northern Somali only in its past tense (e.g., 3m. *ye*, 3f. *te*) and in Rendille as a defective reduplicated past tense 1s. *inanne* "I said", 2s. *itatte*, 3m. *iyeyye*, 3f. *itatte*, cf. Pillinger & Galboran (1999:164 b). Cognates of this verb also occur, with suffix-conjugated paradigms, in Agaw **y-* "say", in Highland East Cushitic (Sidamo *y-* "say" and Burji *iy-* "id.") and even in Old Egyptian, that had *j* /y/, e.g., *j.sn* "they say", *j.n.sn* "they say" and even the Pseudoparticiple 1s. *j.kj*, 3m. *j.j*, 3f. *j.tj*, cf. Edel (1955:375f.)

(19) ᶜAfar forms of **e* "say"

	Present	Past	Imperative
1s.	(ʔaḏḥé-h replacing *ʔa)	(ʔeḏḥé-h replacing *ʔe)	
2.	in-tá-h	in-té-h	(in-ḍíħ)
3m.	iy-yá-h	iy-yé-h	
3f.	in-tá-h	in-té-h	
1p.	in-ná-h	in-né-h	
2p.	in-taan-áh	in-teen-íh	(in-ḍíħa)
3p.	iy-yaan-áh	iy-yeen-íh	

The following year Colizza's teacher published his Saho dictionary (Reinisch 1890) where he entered the PC verb *a* with the following meanings: (1.) "sich äussern, sagen, erzählen" ["say, narrate"], (2.) "nennen, benennen" ["name"], (3.) "denken, d. i. bei sich sagen" ["think, i.e., say to one's self"], (4.) "sein, esse" ["be"], and (5.) "im begriffe sein, etwas zu tun, mit dem subjunct. verbunden" ["be in the process of doing something, together with the Subjunctive".] Under the fourth meaning, he wrote:

> In derselben verbindung mit nennwörtern, partikeln, interjectionen wird dises verb als auxiliare gebraucht zur bildung neuer verba, wie *sík ya* er schwig, *tíbb ya* er verhielt sich ruhig, *tóbb ya* er fiel nider, *ogŭgŭt ya* er sprang auf u. s. w. ... Hieraus erklärt sich die entstehung und flexion aller verba 2 im Saho und ᶜAfar. ["This verb is used as an auxiliary in a similar connection with nouns, particles, and interjections in order to form new verbs like *sik ye* 'he was silent', *tibb ye* 'he kept quiet', *tobb ye* 'he fell down', *ogugut ye* 'he jumped up', etc. ... The origin and inflection of all the verbs 2 in Saho and ᶜAfar can be explained from this".] (Reinisch 1890:2.)

A few years later also Praetorius (1893, 1894) took up this matter, from a slightly different perspective. Unlike Reinisch, he regarded the auxiliary *e* as being used with its full meaning of "say", and the nominal form of the lexical verb as a participle. In this manner, he treated the non-past tense of Saho *ᶜunuun-* "stoop down from the waist" as containing an old participle *ᶜunuun* "gebückt, stooped down" followed by the PC non-past of the above verb *ee* "say" (Praetorius 1894:331):

(20) ᶜunuuná "I stoop down" < ᶜunuun + aa "gebückt! sage ich"
ᶜununtá "you stoop sown" < ᶜunuun + taa "gebückt! sagst du"
ᶜunuuná "he stoops down" < ᶜunuun + yaa "gebückt! sagt er"
ᶜununtán "you stoop sown" < ᶜunuun + tan "gebückt! sagt ihr"
ᶜunuunán "they stoop down" < ᶜunuun + yan "gebückt! sagen sie"

The later literature usually mentions Praetorius in connection with the hypothesis of the origin of the Cushitic SC1 from an old compound form, even

though it usually follows Reinisch's rather than Praetorius's approach. Indeed, the words *sik* or *tibb* in the Saho phrases *sik ye* "he was silent", *tibb ye* "he kept quiet" quoted by Reinisch are not participles but ideophones, i.e., words belonging to a special class that indicates movements, sounds, colour effects etc., that occur as complements of the verb "say" in Saho-ᶜAfar and in many other Cushitic, Ethiosemitic, and Omotic languages of the Horn in intransitive verbal phrases. Palmer (1974) described them in an areal perspective calling them "compound verbs", Cabdulqaadir and Tosco (1998) discussed them in great detail for Somali, while Appleyard (forthcoming) pointed out the fact that this kind of construction is used not only with ideophones, but also with direct quotes of interjections or other parts of speech and, in some languages, with special uninflected words derived from verbs by means of more or less regular morphological processes such as the ᶜAfar diminished action stem. Some examples of this are given in (21).

(21) i. Ideophones with "say"
ᶜAfar biɖkiᶜ iyyeh "he fluttered his eyes", lit. "he said *biɖkiᶜ*"
Somali shib dheh! "shut up!", lit. "say *shib*!"

ii. Quotes with "say"
Oromo tolee jedhe "he agreed", lit. "he said 'it is well'"

iii. Deverbal uninflected words with "say"
ᶜAfar ħúlla indíħa! "come in for a bit!", lit. "say *ħúlla*!", where *ħúlla* is the diminished action stem of *ħul-* "come in";
kúdda iyyáh yaduuréh "he runs away a bit and (then) comes back", lit. "saying *kúdda* he comes back", where *kúdda* is the diminished action stem of *kud-* "run away".

Since these kinds of constructions are quite widespread in Cushitic, Reinisch's idea that they could have originated the entire SC1 conjugational pattern as a commoin Cushitic innovation has persuaded most scolars and is commoly regarded still now as a good explanation. Indeed, it accounts for two of the main peculiarities of the SC1 listed in (17) above: (a.) the fact that the verbal stem remains the same in all the tenses, and (b.) the alternation between *a* in the non-past tense and a front vowel in the past tense, that seems to replicate the alternation between, e.g., Saho non-past 3m. *y-aa* "he says" and Past 3m. *y-ee* "he said". In addition to this (c.) it also accounts for the position of the changing vowel vis-à-vis the consonants that express subject concord, that is seen as preserving the position it has in the PC foms of the old auxiliary, e.g., Saho 2s.

ᶜununtá "you (s.) stoop sown" with *-ta* like *t-aa* "you (s.) say", and *ᶜununtán* "you (p.) stoop sown" with *-tan* like *t-a-n* "you (p.) say".

It has to be pointed out, however, that Reinisch's idea requires the 3s./p. prefix *y-* to be dropped in the new grammaticalised forms. This is an ad hoc phonological process, that does not seem to occur elsewhere in the phonology of common Cushitic. Never the less, as already Praetorius (1894:331) pointed out, Beja seems to preserve the prefix *y-* of the old auxiliary in its 3m. *ka-tamya* "he doesn't eat" and 3p. *ka-tamyaan(a)* "they don't eat".

3.2. Some problems

3.2.1. The Somali independent past and related questions

In addition to the SC1 affirmative past shown in (18) above, that is used in main clauses with the full range of focus particles required by Somali, this language also has a different tense that sometimes has past time reference, and that is increasingly less used in the contemporary written language. It was first identified by Bell (1953:106f.) who called its forms "short forms of the Past Tense", and pointed out that it never co-occurs with focus particles nor with what Saeed (1999:118) calls sentence type markers, and that it is "most frequently used in answer to questions, but ... also ... in the middle of a conversation, when everyone knows who the subject of the conversation is" (Bell 1953:107.) Andrzejewski (1956:126) changed its name into "Independent Pradigm of the Past Tense General", that was later simplified into "past independent" or "independent past". Andrzejewski further pointed out in Muuse & Andrzejewski (1956:66) that it is very frequently used in proverbs and poetry. It is also the most common tense in curses and blessings. Some examples of how it is used can be seen in the forms *cún*, *cuskáy* and *bá'yay* in (22a), while (22b) shows its paradigms in the three main conjugations of SC1 verbs in Somali.

(22) a. Some uses of the Somali independent past

hílib-k-u	mêe?	la	cún /ᶜún/
meat-ART-NOM	where is it	IMPERS	ate

"Where is the meat?" "It has been eaten" (lit. "somebody ate it")

nín	daad	qaaday	xumbó	cuskáy /ᶜuskáy/
person	torrent.NOM	swept away.NOM	foam	supports himself

"Who is swept away bay a torrent woud even support himself with the foam" (a proverb)

magac-âa	bá'yey
name-your.NOM	may it be destroyed

"May your name be destroyed!" (a curse)

b. Paradigms of the Somali independend past in the three main verbal conjugations compared with the affirmative main-clause past

Conj. 1 *cun* "eat"	Conj. 2 *daaji* "pasture"	Conj. 3 *cabso* "fear"
Independent Past	Independent Past	Independent Past
cúnay	daajíyay	cabsáday
cúntay	daajísay	cabsátay
cṵ́n ~ cúnyay	dạají	cạbsáy
cúntay	daajísay	cabsátay
cúnnay	daajínnay	cabsánnay
cunté	daajisé	cabsaté
cuné	daajiyé	cabsadé
Affirm. main-clause Past	Affirm. main-clause Past	Affirm. main-clause Past
w-âan cunay	w-âan daajiyay	w-âan cabsaday
w-âad cuntay	w-âad daajisay	w-âad cabsatay
w-ûu cunay	w-ûu daajiyay	w-ûu cabsaday
w-ây cuntay	w-ây daajisay	w-ây cabsatay
w-âan cunnay	w-âan daajinnay	w-âan cabsannay
w-âad cunteen	w-âad daajiseen	w-âad cabsadeen
w-ây cuneen	w-ây daajiyeen	w-ây cabsadeen

It is apparent that the independent past paradigm differs from the affirmative main-clause past not only in its tonal pattern and in its final *-é* instead of *-een* in the 2p. and 3p, but also in the 3m. forms: *cṵ́n* and *cúnyay*, *dạají* and *cạbsáy* instead of *(w-ûu) cunay*, *(w-ûu) daajiyay* and, respectively, *(w-ûu) cabsaday*. The present author already pointed out (Banti 1987:159) that 3m. *cṵ́n* with Ø ending and advanced vowels requires one to reconstruct an old 3m. **ᶜúni* where the final low-toned short **-i* was dropped after causing umlaut in the stem vowel. Modern *cúnyay*, instead, preserves the old form with the SC1 3m. ending *-ay* appended to it: **ᶜúni* + *-ay* > [ᶜúnyay]. The old ending **-i* can also be seen in the 3m. *cạbsáy* from the Conj. 3 verb *cabso*, where it is added to a dental-less stem *cabsá-*.

Moreover, it is not only for present-day Somali that one has to reconstruct a 3m. form like **ᶜúni* with a final **-i*. In the communal dialect of Mogadishu that has been referred to in the literature as Ashraaf since Moreno (1953, 1954), and as Ashraaf of Shingaani by Ajello (1984), the affirmative past is very similar to the Somali independent past, as shown in (23). Related forms also occur in the better described Tunni dialect of southern Somalia, as argued by Tosco (1997:3f., 70, 81.)

The so-called Ashraaf of Shingaani now has *-i* and Tunni *-ə* from **-i* in the other vowel-final forms of their past tenses, but the difference between 1s. *ᶜuni*, *šéenə* < **kéen-i* and 3m. *ᶜuńi* < **ᶜuny-i*, *šéeńi* < **kéeny-i* in Conj. 1 verbs and between 1s.

ᶜabsati, qobə́də < **qabát-i* and 3m. *ᶜabsayi, qobíyi* < **qabáy-i* in Conj. 3 verbs matches Somali 1s. *cúnay* vs. 3m. *cúny-ay* in Conj. 1 and 1s. *cabsáday* vs. 3m. *cạbsạ́y* in Conj. 3 verbs. The process of integrating the old 3m. forms like **ᶜúni* into SC1 paradigms in these two southern Somali dialects thus went one step further than in Somali because (i.) they always occur with the same final vowel as the 1s., 2s., 3f. and 1p., i.e., **ᶜuny-i* like Somali *cúny-ay* but not like Somali *cụ́n* < **ᶜúni*, and (ii.) Somali has no extended form **cabsay-ay* matching Shingaani Ashraaf *ᶜabsay-i*.

(23) Ashraaf of Shingaani and Tunni affirmative past forms

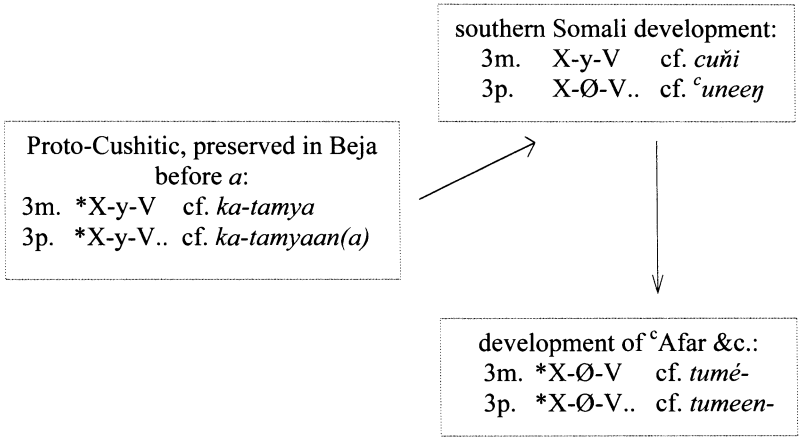
	"Ashraaf" of Shingaani	
	Conj. 1 *ᶜun-* "eat"	Conj. 3 *ᶜabsat-* "fear"
1s.	ᶜuni	ᶜabsati
3m.	ᶜuňi	ᶜabsayi
3f.	ᶜunti	ᶜabsatti
3p.	ᶜuneeŋ	ᶜabsateeŋ

	Tunni		
	Conj. 1 *šeen-* "bring"	Conj. 2 *sii-* "give"	Conj. 3 *qobəd-* "get"
1s.	šéenə	síiyə	qobə́də ~ qobə́hə
3m.	šéeňi	síiyi	qobíyi
3f.	šéentə	síitə	qobə́tə
3p.	šeenêen	siiyêen	qobədêen

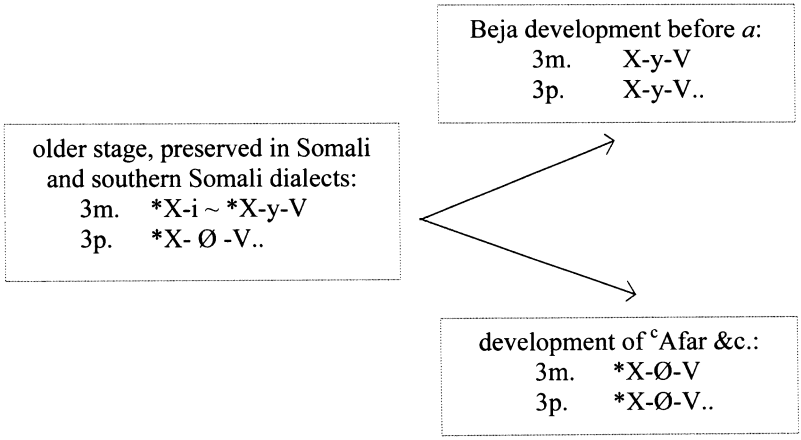
The reconstructed 3m. form **ᶜúni* is difficult to account for in a non ad hoc way within the Colizza-Reinisch-Praetorius framework, because the reflex of the SC1 past tense in Somali has *-ay* as shown in (18). Moreno (1953:118) suggested that forms like 3m. *ᶜuňi* in the Ashraaf of Shingaani were a "fenomeno di fedeltà allo schema originale della coniugazione debole cuscitica" ["a fact of preservation of the original pattern of the Cushitic weak conjugation"], i.e., that the form **ᶜunyi* they preserve should be parsed as **ᶜun-yi*, where **-yi* was the old PC auxiliary 3m. *y-e* "he said" still retaining its prefix *y-*. Obviously enough, he mentioned also the 3m. ending *-ya* in the Beja negative non-past *ka-tamya* "he doesn't eat", cf. (18). It should be noted, however, that in Beja the palatal glide *-y-* occurs both in the 3m. and in the 3p. *ka-tamyaan(a)* "they don't eat", while in the two above southern Somali dialects and in northern Somali the 3m. never has a palatal glide nor traces of it. If one accepts Moreno's interpretation of these forms, one has to posit the historical development shown in (24a). In other words, Beja would preserve the oldest picture in its negative non-past, where the old prefixal *y-* occurs before *a* both in the 3m. and in the 3p.; the two above-mentioned southern Somali dialects would lose the old *y* in the 3p. of the past tense before *-een*, but preserve it in front of a likely old **e* or **ee* in the 3m. of

the same tense, while the loss of *y* spread to all the relevant contexts in the other languages.

(24) a. Development of SC1 3m. and 3p. according to Moreno's interpretation of the 3m. past in the Ashraaf of Shingaani



b. Development of the above 3m. and 3p. forms according to the present author's interpretation



The problems with the scenario in (24a) are (i.) that the loss of *y* only in the 3p. but not in the 3m. is difficult to explain phonologically, and has no sense if it

is ascribed to analogy, and (ii.) the shorter Somali forms *^{c}*úni* and *cabsáy* are not accounted for. A more likely development path is shown in (24b). The starting point is the old 3m. form with an ending *-*i*, that became a glide when it was preceded by a consonant and followed by a further vocalic affix. The Somali 3m. independent past is thus a relic of an old form, that was later partially integrated into the new common pattern by appending to it the terminal vowel of the 1s., 2s., 3f., and 1p., i.e., *-ay* in Somali, *-i* in the Ashraaf of Shingaani and in Tunni. This imbalanced pattern was later changed through analogy in two opposite directions, either by spreading *y* also to the 3p. as in the Beja negative non-past, or by dropping it in the 3m. as in the Beja past II and in most other languages. The Somali middle form *cabsáy* and its developments in Shingaani Ashraaf ^{c}*absay-i* and Tunni *qobíy-i* become in this manner a different kind of problem. They cannot be accounted for phonologically with an ad hoc rule changing *^{c}*absatyi* into ^{c}*absayi* as suggested by Moreno (1953:121) that has no parallels elsewhere in these languages. Instead, it has already been mentioned above that they have a vocalic middle stem *^{c}*absa-* plus the 3m. ending *-*i*. Suffix-conjugated middle verbs in East Cushitic are characterised by a stem extension *-*Vt-* that alternates with *-Vḍ-* or *-Vɗ-* or their developments in some forms of some languages. For instance, Oromo has 1s. *qabaddhe* [k'abaɗɗe] "I took it" (vs. 3m. *qabate*), 2s. imperative *qabáddhu* and 2p. imperative *qabáddhaa*; some Somali varieties in northern Banaadir have 1s. *qabdhay* [qabḍay] "I seized it", (vs. 3m. *qabtay*) and 2p. imperative *qábdha*, but 2s. imperative *qabó* with a vocalic stem ending in *-ó*. Indeed, all the Omo-Tana languages have in the 2s. imperative of middle verbs such a vocalic stem, or cognate forms like Bayso *kóra* "climb!" from middle *kor-at-*, and Dasenech *galu* "enter!" from the middle verb *gal-t-*. Vocalic stems of middle verbs are thus clearly attested in another widespread form in addition to the above reconstructed 3m. *^{c}*absa-i*.

It is important to stress here that the occurrence of traces of the old 3m. ending *-*i* in the negative non-past of Beja, in the affirmative past of the Ashraaf of Shingaani and of Tunni and in the Somali tense that, even though it is called the independent past, has been seen in (22a) to be used also in a variety of non-past functions such as general statements of proverbs, curses and blessings, make it unlikely that 3m. *-*i* was originally an ending of a past tense. This makes it possible to add here a further set of forms that may preserve this old ending. Indeed, it has been seen in (18) above that Burunge nasal stems like *koom-* "have" have an underlying final /a/ in their Imperfective 1s., 2s., 3m., 3f. and 1p., that is lengthened before the negative suffix *-ba* and reduced to a murmured voiceless vowel in affirmative sentences. However, most other classes of verbs have the behaviour of *dooɬ-* "cultivate" shown in (25) together with its parallel paradigms in Iraqw.

(25) Burunge and Iraqw non-past ("imperfective") of non-nasal stems (*dooɬ-* "cultivate")

Burunge

	Affirmative	Negative	Interrogative
1s.	ha dooɬ[a]	ha dooɬaa-ba	dooɬa
2.	ha dooɬid[a]	ha dooɬidaa-ba	dooɬida
3m.	dooɬ[i]	dooɬii-ba	dooɬiya
3f.	dooɬid[a]	dooɬidaa-ba	dooɬida
1p.	ha dooɬan[a]	dooɬanaa-ba	dooɬana
2p.	ha dooɬiday	dooɬida?ii-ba	dooɬida?i
3p.	dooɬiyay	dooɬiya?ii-ba	dooɬiya?i

Iraqw

	Affirmative	Negative	Interrogative
1s.	a dóoɬ	dooɬaa-ká	dôoɬa
2.	a dóɬ	doɬ-ká	dôɬa
3m.	i dooɬ	dooɬii-ká	dôoɬi
3f.	i dóɬ	doɬ-ká	dôɬa
1p.	a dooɬáan	dooɬaanaa-ká	dooɬâana
2p.	a doɬá?	doɬa?aa-ká	doɬâ?a
3p.	i dooɬiyá? ~ dooɬír	dooɬii?aa-ká	dooɬîi?a

It appears that the Burunge interrogative non-past preserves the final short vowels pretty well, but differs in its 3m. *dooɬiya*, while the affirmative and negative forms require /dooɬi/. Iraqw underwent more complex phonological developments. For instance, the old 2m. **dooɬta* simplified its consonant cluster **ɬt* after this had shortened the long vowel that preceded it, instead of inserting a short *i* between the two consonants and voicing the old **t* into *d* as in its Burunge counterpart. In addition to this, the short final vowels were completely lost in the affirmative forms. However, the pattern of preserving the short final vowels in the interrogative forms, and of lengthening them before the negative suffix is the same as in Burunge, with the exception of the 2m. and 3f. that were reduced to *doɬ-ká* according to a general phonological process that deletes a short vowel in Iraqw "if there is a syllable with a short vowel preceding it and a syllable with a short vowel following it" (cf. Mous 1993:30; the lengthening of the final vowel before the negative suffix *-ká* has thus to be ordered after this deletion process.) It appears that also in this language the 3m. of the non-past is underlying /dooɬi/. Kießling (2000:87) reconstructs 3m. **dooɬiya* and 3p. **dooɬiyaa?i* for the Proto-West-Rift "non-perfective", i.e., the non-past, on the basis of the sets of forms in (18) and (25). In this manner the ancestral language

of the West Rift group of Southern Cushitic would have had forms that were similar to the Beja negative non-past, and it has been seen above that they fit both the traditional Colizza-Reinisch-Praetorius interpretation and the hypothesis that is suggested in this paper, even though they are accounted for in different ways. However, positing 3m. **dooɬiya* requires a considerable load of additional rather ad hoc phonological developments in order to arrive at the set of forms that occur in the present-day languages. Under a different interpretation the nasal stems like Burunge *koom-* "have" should be set apart from the other stems. For the latter, the following paradigm is reconstructed:

(26) Reconstructed paradigm of the non-past of non-nasal stems in the West Rift group of Southern Cushitic, cf. (25)

1s.	*dooɬa
2s.	*dooɬta
3m.	*dooɬi
3f.	*dooɬta
1p.	*dooɬana
2p.	*dooɬtaaʔa or *-taaʔi
3p.	*dooɬín, replaced by *dooɬi + aaʔa or *dooɬi + aaʔi by analogy with the 2p.

In this manner, the Iraqw forms are better accounted for, including the isolated 3p. *dooɬír*, while the Burunge interrogative 3m. *dooɬiya* is seen as a new form due to analogical spread of the final *-a* from the other interrogative forms. It will be seen below that 3p. **dooɬín* fits the rest of Cushitic better than Kießling's reconstructed **dooɬiyaaʔi*, while the final element **-aaʔa* or **--aaʔi* in the 2p. ending **-taaʔa* or **-taaʔi* may have spread from the 2p. imperative where this kind of element is likely to be very old. Finally the penultimate *a* in the 1p. **dooɬana*, that was lengthened in Iraqw interrogative *dooɬâana*, etc., still requires an explanation because it doesn't seem to have parallels in the other main Cushitic language groups.

3.2.2. The Highland East Cushitic converbs and related paradigms in Oromo and Agaw

Most languages of the Highland East Cushitic group have affirmative main clause tenses that are considerably different from the SC1 inflectional pattern seen in (18), which is instead better attested in their converbs. Some of these languages, like Burji and Gedeo, have only one converb that ends in *i* or *e*, while other languages have two of them. For instance, Sidamo opposes a simultaneous

converb in *-a* to a past converb in *-e*, as in *ita hasireemmo* "while eating (*it-a* 1s. of the simultaneous converb) I look for it" vs. *ite hasireemmo* "having eaten (*it-e* 1s. of the past converb) I look for it". The forms of these converbs in three languages of this group are shown in (27). It should be remembered that the old 3p. forms came to be used as impersonal forms in Sidamo, but as polite 3s. forms in Kambaata. (For the gemination of the final stem consonant in 1s. and 3m. *marri* in Kambaata, see Sim 1988.)

(27) The HEC converbs (*mar-* "go")

	Burji	Sidamo	
		Simultaneous Conv.	Past Converb
1s.	mari	mara	mare
2.	marši < *-rti	marta	marte
3m.	mari	mara	mare
3f.	marši < *-rti	marta	marte
1p.	marri < *-rni	marra < *-rna	marre < *-rne
2p.	maršingi < *-rtinki	martina	martine
3p.	maringi	marra < *-rina	marre < *-rine

	Kambaata	
	Subordinate	Past Converb
1s.	mara	marri
2.	marta	marti
3m.	mara	marri
3f.	marta	marti
1p.	manna < *-rna	manni < *-rni
2p.	martina	martèen
3p.	manna < *-rina	marèen

Upon closer inspection, only the Kambaata past converb really resembles the SC1 pattern seen in (18). The other sets of forms differ in the 2p. and 3p., where the changing vowels do not occur between the consonants that express subject concord, but at the end of the forms as a sort of suffix. This can be seen to occur also in Burji, when one compares its converb in (27) with its affirmative non-past: 1s. *mara*, 2s. *marta*, 3m. *mara*, 3f. *marta*, 1p. *marra* < **marna*, 2p. *marčingu* and 3p. *maringu*. (For the element *-gu* in the 2p. and 3p. see what was said above in § 2.2.) Synchronically the Burji converbial 2p. and 3p. forms are clearly *maršing-i* and *maring-i*, paralleled by Sidamo *martin-a*, *marr-a*, and *martin-e*, *marr-e* etc. The changing vowels that characterise these tenses seem to be in the wrong place.

The history of the HEC vowels is known only partly, but there seem to be two ways for explaining the Sidamo and Kambaata forms in (27). If one sticks to

the Colizza-Reinisch-Praetorius explanation of the SC1 conjugational pattern, the Kambaata past converb is more conservative, while the Kambaata Subordinate and the two Sidamo converbs had the stem vowels of the old auxiliary – *a* and *e* – copied after the final *n* and subsequently weakened to *i*. In other words, the Kambaata subordinate and the Sidamo simultaneous converb 2p. would derive from an old **mar-ta(a)n* that became **marta(a)na* > *martina*. Under this hypothesis it is unclear why this should happen in Kambaata only for the subordinate tense, but not in the past converb. The opposite explanation is that the Kambaata past converb is the most innovative of the above forms. The starting point would be a single set of inflected forms 2p. **martin* and 3p. **marin*, that received a suffixal *-a* for the tense that developed into the Sidamo simultaneous converb and the Kambaata subordinate, and a suffixal *-e* for the tense that was to become the Sidamo and Kambaata past converb. This final *-e* assimilated the preceding *-i-* in Kambaata and was lost after non-geminate *n*. Explanations can also be found for how the internal *e* of the ending came to be lengthened. This path of development is shown in (28).

(28) Suggested development of the Sidamo and Kambaata converbs

Present

1p. *marn-a Sid. marra, Kam. manna

2p. *martin-a > Sid. Kam. martina

3p. *marin-a > *marina > Sid. Kam. *marna

Past

1p. *marn-e > Sid. marre, Kam. manni

2p. *martin-e > *martene > Kam. martèen

2p. *martin-e > Sid. martine

3p. *marin-e > *marene > Kam. marèen

3p. *marin-e > *marine > Sid. *marne

It should be noticed that the reconstructed 3p. **mar-in* preserved in the Sidamo and Kambaata converbs matches the West Rift 3p. **dooł-in* that was reconstructed in (26) and that appears to be retained in the Iraqw Imperfective 3p. *dooł́r*. The Burji Converb can also be accounted for straightforwardly: the final **e* became *-i* here, and was added not to 2p. **mar-tin* and 3p. *mar-in*, but to the extended forms 2p. **mar-tin-kV* and 3p. **mar-in-kV* that Burji has been already seen in § 2.2. to share with southern Agaw, Hadiyya and Dullay.

It is interesting to point out that the pattern seen in the Highland East Cushitic converbs in (27) and (28), with the characteristic vowels in a location that seems to contradict their origin from an old PC auxiliary, also occurs in other Cushitic languages. The affirmative non-past, past and "subjunctive" of Gujjii and Harar Oromo are shown in (29). (The Oromo so-called subjunctive is used as a non-past tense in subordinate clauses, as jussive preceded in most dialects by *haa* or *ha*, and as negative non-past preceded by *hin-* and a with special HL tonal melody in main clauses.)

(29) Some Oromo forms of *deemuu* ~ *adeemuu* "go"

	Affirmative Non-Past	Affirmative Past	"Subjunctive"
	Gujjii Oromo		
1s.	deema	deeme	deemu
2.	deenta	deente	deentu
3m.	deema	deeme	deemu
3f.	deenti	deente	deentu
1p.	deemna	deemne	deemnu
2p.	deentan(i)	deentane	deentanu
3p.	deeman(i)	deemane	deemanu
	Harar Oromo		
1s.	deema	deeme	deemu
2.	deemta	deemte	deemtu
3m.	deema	deeme	deemu
3f.	deemti	deemte	deemtu
1p.	deemna	deemne	deemnu
2p.	deemtan(i)	deemtan(i)	deemtan(i)
3p.	deeman(i)	deeman(i)	deeman(i)

The Gujjii data are from Gasparini (1979:21f.), while the Harar Oromo ones are from Owens (1985:66). Notice also that the final short *i*'s in the 2p. *-tan(i)* and 3p. *-an(i)* are bracketed because their phonological status is somewhat fuzzy, as shown by Owens (1985:12f.) and Banti (1988b:34f.): they can be either analysed as underlying short vowels that are "almost always dropped" (Owens 1985:12), or as default vowels that are inserted when an empty vocalic position has to be filled because it bears a high tone or when the verbal form is followed by a consonant-initial suffix.

Praetorius (1893) was dealing with a dialect that was quite similar to Harar Oromo here, and was perfectly aware that its affirmative non-past and past tenses were not easy to derive from compound forms with an old PC auxiliary, because of the 3f. *-ti* instead of *-ta* in the non-past, and of the identical forms in the 2p and 3p. of the non-past and past. For the first one, he suggested an origin

as an old relative form (Praetorius 1893:162), while for the 2p. *-tan(i)* and 3p. *-an(i)* he claimed

> Ich kann nicht anders annehmen, als dass die ursprünglich nur imperfektivischen Formen sekundär auch in das Perfektum gedrängt worden sind ... ["I can only suggest that these forms, that originally were only imperfective, later spread also to the perfect".] (Praetorius 1893:164.)

However, the past forms with 2p. *-tane* and 3p. *-ane*, that are retained only in Gujjii Oromo, allow a different and more interesting explanation. The endings 2p. *-tan(i)* and 3p. *-an(i)* are from the non-past tense, but they are not necesarily the typical endings of the SC1. It has already been pointed out in § 1. that *-an* in Southern Oromo *yedhan* – or better *yedhan(i)* – "they say", "they said" can be matched by *-in* in other languages. The Oromo present 3p. *deeman(i)* can thus be a good parallel of Iraqw non-past 3p. *doołír* < **doołín*, and the Gujjii past 3p. *deeman-e* a parallel of the Highland East Cushitic past converb 3p. **marin-e*. The similarity of the 2p. and 3p. past endings to those of the affirmative non-past in Harar Oromo and in most other Oromo dialects can thus have a phonological explanation. Indeed, the frequent loss of voice and drop of final short vowels made it particularly easy for 2p. *-tan(i)* and *-tane* and 3p. *-an(i)* and *-ane* to merge into a single set of endings for the 2p. and 3p. This new pattern with a single set of endings in the 2p. and 3p of the affirmative non-past and past tenses spread then analogically also to the subjunctive, where the older endings *-tan-u* and *-an-u* were however retained in several dialects, e.g., in Western and Shewa Oromo and in the southernmost Waata dialect described by Heine (1981:42), that is spoken by several communities of former hunter-gatherers along the southern coast of Kenya.

A further set of tenses formed by an inflected base followed by a vocalic formative that is not a PC auxiliary has been pointed out by Appleyard (1992:132). Indeed, he showed that the Awngi perfect indefinite, a tense that "expresses either a past action the effect of which still remains in present, that is, a present perfect, or, more rarely, an uncertain action in the past about which the speaker has no certitude" (Hetzron 1969:13) and that is also used as the base of the converb and several other tenses, actually contains a suffix **aa* > *a* added to an inflected base that looks very much like the Burji converb in (27). He also pointed out that a similar tense, without the *k* formative in the 2p. and 3p. occurs with a converbial function in northern Agaw, e.g., in the Kemant *a*-subordinate. In Kemant it has *-a* < **-aa* before a pause but *-ä* – usually from short **-a* – in all other positions. Appleyard (1992:132f.) actually thought these Awngi and Kemant forms to be formed "by adding a suffix *-a* or *-ä* to the perfective vocalic auxiliary", i.e., to a base consisting of a nominal form followed by the old PC auxiliary *e* "say" according to the traditional interpretation of the SC1 pattern; this suffix "erases the presumed final vowel **-ə* of the expected perfect

paradigm". Yet it follows from what has been said above that there is little non-theory-bound reason for treating the Agaw paradigms in (30) as being structurally different from the Sidamo and Kambaata converbs in (27) and (28) and the Gujjii Oromo past and subjunctive in (29). The only patent difference is that here there is a suffixal formative **aa* with a perfective or past time function that differs both from the (perfective) past tense **e* and the (imperfective) non past **a* of the more typical SC1 paradigms. (Notice that Kemant **t* > *y* is regular here, cf. Appleyard 1984:41f.)

(30) Agaw past and converbial forms with **-aa*, compared to the Burji converb

Burji Converb (already seen in 26)	Awngi Perfect Indef. (*des-* "study")	Kemant *A*-Subord. (*was-* "hear")
mari	desa < *das-aa	wasa < *waas-aa
marši < *-rti	desta < *dast-aa	wasya < *waast-aa
mari	desa < *das-aa	wasa < *waas-aa
marši < *-rti	desta < *dast-aa	wasya < *waast-aa
marri < *-rni	desna < *dasn-aa	wasna < *waasn-aa
maršingi < *-rtinki	destǝ́ka < *dastink-aa	wasina < *waastin-aa
maringi	deska < *dasink-aa	was(ə)na < *waasin-aa

Forms with a final *a* and a past tense function are also known in other branches of Cushitic. The most obvious one is the Hadiyya converb shown in (31b), that is usually used in same-subject sequences of events as in (31a). It obviously has the same velar element as the above Awngi forms, and *-aʔa* rather than simple *-aa* in the 2p., 3p. and 3f.

(31) a. An example of the Hadiyya *aa*-converb, from Sim (1989:381)

meentičč̌o giira giittaʔa giiʔl gadanonne afuuttoʔo
woman fire kindling fire's beside she-sat
"Having kindled (*giittaʔa* 3f. converb of *giir-*) the fire, the woman sat beside it"

b. The Hadiyya same-subject converb and the Beja past I

Hadiyya Converb (*mar-* "go")	Beja Affirmative Past I (*tam-* "eat")
maraa	taman
mattaa < *mart-aa	tamtaa *m.*, tamtaay *f.*
maraa	tamya
mattaʔa	tamta
mallaa < *marn-aa	tamna
mattakkaʔa	tamtaana
marakkaʔa (> Polite 3s.)	tamyaan(a)

Another instance of a past tense in final *a* is the Beja past I – Hudson's "preterite" (cf. Hudson 1976:115f.) – that is identical to the Beja negative non-

past minus the negative prefix *ka-*. Rather than being an old non-past shifted to a past function, as assumed by Praetorius (1893:161) and still by Zaborski (1975:13ff.), its Hadiyya and Agaw parallels make it more likely that the Beja negative non-past and the affirmative past I of SC1 verbs are two originally separate tenses, as they still are in Awngi with its indefinite imperfect in *-e* < **a* and its indefinite perfect in *-a* < **-aa*. They merged formally, but not functionally, because final short *-a* came to be lengthened in different grammatical contexts, e.g., when further suffixes were added to the verb forms, and lost in this way its distinctiveness from the past tense in long final **-aa*.

3.3. A new historical interpretation

It has been seen in the above sections that a number of verbal paradigms in East and Southern Cushitic have only a partial resemblance to the better-known SC1 conjugational patterns, and are difficult to explain under the century-old Colizza-Reinisch-Praetorius hypothesis that such patterns have their origin in the grammaticalisation of old compound tenses where a nominal form was followed by the fully inflected PC auxiliary **e* or **ee* "say". In several instances, a more careful reconstruction appears to require a single set of inflected forms followed by different grammatical formatives, reconstructed as **a* for non-past (imperfective) tenses, **e* and **aa* for past (perfective) tenses, and possibly **u* for the paradigm that originated the Oromo subjunctive. Of this single set of inflected forms, the 3m. had clearly **-i*, the 3p. can also be reconstructed as **-in* and the 2p. was likely to be **-tin*. The other endings have rather uncontroversial consonant elements with the exception of the 1s., as shown below, but it is difficult to pin down the vowels that may have surrounded them. For instance, the 1p. has to be reconstructed as **-nV* for Beja, Agaw and East Cushitic, but the West Rift group of Southern Cushitic requires a vowel before the nasal, i.e., **-anV*. Since this is somewhat anomalous when it is compared to the pattern of the other endings, it is difficult to invoke analogy as its origin, and the present author is tempted to regard it as a relic that was normalised in the other three major branches of Cushitic. Another problem is the 1s., where most languages seem to have only **-V*. Yet Hetzron (1976:43) and Voigt (1984) pointed out that a glottal stop has to be reconstructed for the 1s. in Agaw and in the middle forms of Oromo and Bayso to explain some systematic differences between 1s. and 3m. forms. Also the middle forms in some Somali varieties from northern Banaadir that were mentioned in § 3.2.1., i.e., 1s. *qabdhay* [qabḍay] vs. 3m. *qabtay*, should be added here. The sequence **-ʔV* that is required here fits quite well the traditional interpretation, because the 1s. has a prefix *ʔ-* in the PC pattern, as shown by forms such as Arbore 1s. *(ʔan) ʔ-aačča* "I come" vs. 2s. *(ʔa) t-aačča* in Arbore, cf. (1). This is how such forms have been explained by Hetzron and Voigt in the above papers, but it shall be seen below that they can

also be explained differently. The set of forms that is reconstructed in this manner is shown in (32).

(32)

1s.	*Stem-*ʔV*
2s.	*Stem-*tV*
3m.	*Stem-*i*
3f.	*Stem-*tV*
1p.	*Stem-*anV* (?)
2p.	*Stem-*tin*
3p.	*Stem-*in*

When this set of forms was followed by the above vocalic formatives, the developments shown in (28) took place in most cases. The final vowel of the inflected form was usually lost before **e* etc., but in the 2p. and 3p. the internal vowel was either retained as in the Sidamo converbs of (27), the Gujjii Oromo forms in (29) and possibly the Agaw past forms in **-aa* shown in (30). In most other cases the internal vowel was assimilated to the vocalic suffix, and yielded the typical SC1 pattern seen in (18), e.g., ᶜAfar present 2p. Stem-*taaná-h* ~ Stem-*tán* and 3p. Stem-*aaná-h* ~ Stem-*án*; past 2p. Stem-*teení-h* ~ Stem-*tén* and 3p. Stem-*eení-h* ~ Stem-*én*. The Somali independent past and the West Rift non-past show however that the old suffix-less forms continued to be used, resulting in much analogical levelling between suffix-less forms and new suffixed ones in many languages. As a consequence, new mixed paradigms developed in several cases, such as the above-mentioned Somali independent past and its cognates in Tunni and the Ashraaf dialect of Shingaani, the West Rift non-past or the Oromo non-past. In the latter paradigm, the 3f. ending *-ti* may be the original form that was somehow retained, or a new form that had undergone analogical levelling with the final *-i* of the 3m. It should be pointed out, however, that a set of forms that may preserve the old paradigm in (32), with much phonological reduction, is the "bare perfective" mentioned by Appleyard (1992:140), if it is not seen as containing the old auxiliary **e*. Its Khamtanga and Kemant paradigms are shown in (33b). It is used as a converbial gerund or in compound tenses in these present-day languages, as shown in (33a).

Khamtanga *r* and Kemant *y* are obviously from **t* here, as shown by Appleyard (1984:41f.), but the occurrence of *ə* in, e.g., 2s. Khamtanga *-ər* and Kemant *-əy*, or in 1p. *-ən* has not to be taken as good evidence of an original vowel in these positions, i.e., that the original endings were 2s. **-VtV* and 1p. **-VnV*. Palmer (1957:135ff.) has shown how complex and phonologically conditioned syllabification is in the verbal forms of northern Agaw. It is only in the 1p. ending that, as stated above, there is some independent evidence in Southern Cushitic of the occurrence an old vowel before the consonant.

(33) a. Examples of the Khamtanga and Kemant "bare perfective"

Khamtanga

bírä-d	čɨŋɨr	zɨ́wru
ox-Def	you-having-found	you-slaughtered

"Having found (*čɨŋɨr* 2s. gerund) the ox you slaughtered (*zɨ́wru* 2s. past tense affirmative) it" (Appleyard 1987:488)

Kemant

g^{w}äzäntə	aɣən	adaɣäk^{w}ən
peasants	they-being	they-remain

"They will remain (*aɣən* 3p. gerund of *aɣ-* 'be' + *adaɣäk^{w}ən* 3p. affirmative imperfect of *adäɣ-* 'remain') peasants" (Appleyard 1975:340)

b. Khamtanga *k'äb-* "cut" and Kemant *was-* "hear"

k'ə́b	was
k'ə́bər	wasəy
k'ə́b	was
k'ə́bər	wasəy
k'ə́bən	wasən
k'ə́bərn	wasin
k'ə́bəŋ	wasən

Finally, it is interesting to point out that in a number of languages in the southern areas of East Cushitic, and in Southern Cushitic, the same tense and aspect formatives that have been to occur as suffixes, i.e., after the set of reconstructed forms in (32), seem to occur as preverbs, i.e., before the actual verbal forms. An example of this are the Arbore paradigms in (1) where *ʔa-* followed by short forms of the subject pronouns (1s. *-n*, 2s. Ø, 3m. *-y*, 3f. *-y* etc.) characterises the affirmative non-past tense, and *ʔi-*, a likely development of **e*, the affirmative past tense. In this language *ʔa-* before the forms of the past tense produces a different set of forms, that were translated into Amharic as pluperfects by Hayward's informants (Hayward 1984:260). The Burunge forms in (18) show, instead, how *-áa* preceded by *ha* in the 1. and 2., but *y-* in the 3. persons characterises the affirmative past. According to Kießling's analysis (1994:150) the forms in (18) have a perfective preterite value, while *-áa* before non-past forms gives them an imperfective preterite value. The Burunge 1. and 2. *ha* and 3. *y-* ~ *hi* are old clitic subject pronouns cognate of Iraqw 1. and 2. *a* and 3. *i*, of Somali 1. *aan*, 2. *aad*, 3m. *uu* and 3f./3p. *ay*, etc., as shown by Hetzron (1980: 68ff.) and Banti (1997:103). This series of clitic subject pronouns evolved in several East and Southern Cushitic language groups out of the inherited independent pronouns – at least as far as the four interlocutive forms are concerned – but apparently never became real verbal concord markers

such as the prefixes of the PC, the SC2 endings in (10) or the set of endings in (32). As a consequence, e.g., Arbore non-past 1s. *ʔan*, 2s. *ʔa*, 3m. *ʔay* etc., and Burunge past 1. *háa*, 2. *háa* and 3. *yáa* don't look like remnants of old forms with verbal inflections. An invariable *yáa* also precedes affirmative past tense forms in southern Oromo, as in (34).

(34) Southern Oromo *yáa*

anin	sálfáa	sun	kudhan	yáa	arge
I-NOMINATIVE	soldier	that	ten	*yáa*	I-saw

"I saw those ten soldiers"

The occurrence of the above tense and aspect formatives both before and after the inflected verbal forms, looks somewhat like the position of auxiliaries in the two main typological classes of syntactic order, i.e., Aux V in VO languages vs. V Aux in OV languages. Indeed, the Cushitic languages with preverbal tense and aspect modifiers all have a less consistent SOV typology, with a strict head-modifier linear ordering in their NP's vis-à-vis the modifier-head order of Agaw, Highland East Cushitic and Saho-ᶜAfar.

No attempt has been made here to suggest an etymology of these formatives **a*, **e* and **aa*. Since they occur in several branches of Cushitic, they are very old, and their reduced shape makes it quite difficult to reconstruct what they were three or four millennia ago. To make a simple parallel, if there were no written records of Egyptian before Coptic, it would be almost impossible to understand that the perfect 3m. formative *a-f-* seen in (13) actually derives from a Late Egyptian inflected form *jr-f* "he did", that was the perfective (aka preterital) *sḏm.f* tense of the verb *jrj* "do". The above Cushitic formatives could be auxiliary verbs, adverbs or other elements, but is has been pointed out above that their shape in the contemporary languages does not seem to retain any residue of subject concord markers. This is markedly different from the traditional Colizza-Reinisch-Praetorius hypothesis, and is a drawback. On the other hand, the new historical interpretation that has been suggested here makes it possible to explain a number of Cushitic verbal forms that would otherwise have to be classified as anomalies. In the present author's opinion, it thus has a stronger explanatory power than the more traditional hypothesis, and provides a better account for the lack of the glide *y* in the 3m. and 3p. forms of most languages.

On the other hand, the set of forms in (32) are a new Afro-Asiatic suffix-conjugated paradigm. Its main differences from the East Cushitic SC2 and from the better-known Afro-Asiatic stative inflectional pattern are the following:

(35) i. The 1s. has a glottal stop rather than a velar consonant like the reflexes of the AA stative in Berber, Egyptian and Semitic, or a

palatal glide **y* like the SC2 and the Old Egyptian suffix conjugation.

ii. The 3m. is always different from the 3f., that is characterised by **t* like the reflexes of the AA stative in the Kabyle (Berber) qualitative preterite, in Egyptian and in Semitic.

iii. Less strongly, different tenses and moods are obtained by adding grammatical elements before or after the forms in (32). Instead, the SC2 endings are added to different stems in order to get different tenses, basically the bare stem for the present, and an extended Stem-*Vn*- for the past.

In an interesting paper about AA pronouns the late Hetzron (1990:585) pointed out that Cushitic has no trace of a velar **k* in its independent 1s. pronoun, reconstructed as **ʔani* ~ **ʔanu* by Appleyard (1986:221) and Zaborski (1991:77), and remarked that "the complete absence of a first person *k* in Cushitic may be a reasonably good Cushitic vs. Semitic-Egyptian-Berber isogloss", with Semitic in a sort of intermediate position because it shares with Cushitic *k*-less forms like Eblaic *ʔanʔa* and Ge^{c}ez *ʔana* in the 1s. independent pronoun. Let us now compare the forms of the 1s. independent pronouns and of the 1s. endings of the AA stative in these four language groups, leaving aside Chadic and Omotic whose relevant reconstructed forms are more controversial.

(36) Reconstructed AA 1s. pronominal formatives

	Berber	Old Egyptian	Semitic	Cushitic
1s. indep. pronoun	*ənakk^{w}	jnk	Akk. ʔanāku Ebl. ʔanʔa, Ge. ʔana	*ʔan-i/u
1s. ending of the AA stative	*-k > -ɣ	-kj > -kw	Akk. -āku Ge. -ku	

The Berber independent form **ənakk^{w}* has been reconstructed by Prasse (1972:179ff., cf also Kossmann 1999:179f.), while the Eblaic form *ʔanʔa* "I" is the well-known reading by Fronzaroli (1994:92). In the light of the above idea by Hetzron, the 1s. **-ʔV* reconstructed in (32) is not out of place in the empty slot in (36) as the 1s. ending that corresponds to Berber **-k* > *-ɣ*, Old Egyptian *-kj* > *-kw*, Akkadian *-āku* and Ge^{c}ez *-ku*. Eblaic *-ʔa* and reconstructed Cushitic **-ʔV* would seem to be older variants of the simpler formatives *-V* that may have developed phonologically after consonants. A more accurate reconstruction of the Cushitic 1s. independent pronoun would thus be **ʔanʔi* ~ **ʔanʔu*.

4. Conclusions

The three major conjugational patterns of the Cushitic verbs have been discussed in the above pages in a comparative perspective both within the major branches of this language family and in their wider AA context. The prefix conjugation has been examined very shortly, in order to highlight its differences from the other two patterns and some of the most significant points that make it different from its better-known Semitic counterparts. The second suffix conjugation, aka East Cushitic stative conjugation, has been seen in some of its morphological and syntactic details. Its similarities with the Egyptian *sḏm.f* suffix conjugation have been worked out more systematically that in previous papers by this author.

Finally, the well-known Cushitic suffix conjugation, the SC1, has been examined in the third section of this paper. Some of the weaknesses of the traditional Colizza-Reinisch-Praetorius hypothesis have been discussed and an alternative historical hypothesis has been suggested: this conjugational pattern is not the reflex of an old nominal form followed by a prefix-conjugated auxiliary, but of an old fully inflected set of forms that are formally cognate of the AA stative conjugation. In Cushitic it was followed and, more rarely, preceded by a number of elements that evolved into vocalic tense and aspect formatives. Some of the pro's and con's of these two different hypotheses have been examined.

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Some Phonological Processes in Bilin

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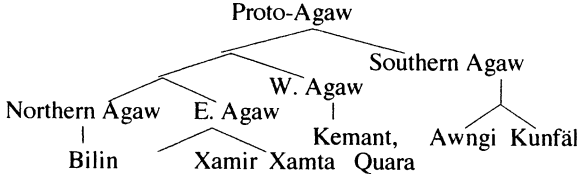
1. The language

Bilin is a Central Cushitic (or Agaw) language and is the only member of the Northern Agaw branch. According to Appleyard (1984:60), the Agaw languages are related as follows:

(1)



Bilin is known by the following names in the literature: Balen, Belen, Beleni, Bilayn, Bilein, Bilen, Bileninya (its name in Tigrinya), Bileno, Blin (favored by native speakers), Bogo, Bogos, and North(ern) Agaw (Agew). There are two reported dialects: Bet Taqwe and Bet Tarqe, but these are not always clearly defined or systematically distinguished.

The estimated number of speakers varies from a low of 70,000 (Grimes 1996), to a mid range of 90,000-120,000 (Sasse 1992, citing a 1986 report), to a high of 140,000 (Killion 1998, citing 1997 Eritrean government figures). Grimes (1996) reports that 60% of Bilin Christians are bilingual in Tigrinya, while 70% of Bilin Muslims are bilingual in Tigre. Grimes reports that the younger generation mixes speech with Arabic, and that there is some bilingualism in Nara or Kunama (Nilo-Saharan). In part because of the fairly high degree of intermarriage and bilingualism, Pateman has reported that the Bilin 'maintain a shrinking linguistic identity around the city of Keren,' the chief city of the Bilin-speaking region (1998:32, fn 27).

Bilin phonology was first described systematically through fieldwork by Leo Reinisch, the father of Cushitic studies, in several works, including a grammar, dictionary, and texts (1882, 1883, 1887a, 1887b). However, this work was pre-phonemic; for a modern assessment, see Appleyard (1987). F.R. Palmer conducted fieldwork with two speakers and wrote up his results in several papers, e.g. (1957, 1958, 1960). Palmer used a framework influenced by Firth, and was unfortunately fairly terse with his examples and glosses in an abstractly labelled grammar. More recently, Lamberti and Tonelli (1996, 1997) have produced a more user-friendly description, based on Lamberti's fieldwork. It is full of minimal pairs, but underlying representations are often unjustified, and seemingly

influenced by orthographic representation. A historical phonology was sketched by Appleyard (1984), while Zaborski (1976), using secondary sources, wrote on the complex consonantal apophony displayed in Bilin noun alternations.

2. The present study

The present study is a preliminary report on fieldwork conducted in the United States with two native speakers, both in their 30s. The first, Sult'an Michael, a male, is from Ashera, a village approximately 20 miles southwest of Keren. Bilin is his native language, spoken in the home. His mother is from the Bet Tark'e clan, and speaks Bilin and Tigre; his father is from the Neged clan, and spoke Tigre, Tigrinya, and Bilin. The male speaker also learned Amharic, English, and Tigrinya in school, and learned Tigre from neighbors.

The female speaker, Medhanit Tesfu, is from Musha, near Keren. Her father spoke primarily Bilin and Tigrinya, along with Italian and Tigre, while her mother spoke Bilin, Tigre, and some Italian, Arabic, and Tigrinya. Medhanit also learned Tigrinya, Tigre, Amharic, and English. Like Sult'an, she is Catholic.

The goal of this study is to set forth first the phonemic inventory of Bilin, and then describe some of the segmental phonological processes. Tonal or pitch accent phenomena have posed problems for many investigators and will not be described here. However, several of the segmental phenomena described here have not been described in other sources. And one, debuccalization, provides crucial new data to theories of feature geometry.

3. Bilin phoneme inventory

The consonant inventory is given below:

(2)

		t	tʃ	k	k^w		ʔ
	b	d	dʒ	g	g^w		
		t'	tʃ'	k'	k^w'		ts' occurs in borrowings.
	f	s	ʃ	x	x^w	ħ	h
		z				ʕ	
	m	n		ŋ	$ŋ^w$		
		l					
		r					
	w		j				

The phonemes /x, x^w, ŋ, $ŋ^w$/ do not occur word-initially.

The symmetrical, seven-vowel inventory is given below in (3):

(3)

i	ɨ	u	
e	ə	o	
	a		

The phoneme /ɨ/ does not occur word-finally.

4. Phonological processes

4.1. Vowels

4.1.1. Laxing

The non-low vowels are often laxed, especially in closed syllables:

(4)	/líbdi/	[líbdi]	'remember'
	/dédna/	[dédna]	'to disappear'
	/ferék^{w}un/	[ferék^{w}ʊn]	'I go'

On occasion, vowels, especially /e/, are realized as lax even in open syllables.

(5)	[ʃɛrɛ́bna]	'to carve'
	[wɛtɛ́rna]	'to pull'
	[mɛʃɛráfat]	'fan'

4.1.2. Fusion of diphthong

Though the diphthong /aw/ is rare, it appears to freely vary with a tense monophthongal equivalent, e.g. /kaw/ ~ [ko] 'people'. The fronting diphthong /aj/ does not fuse: /t'ajt'ara/ 'Bilin-style *injera* (bread)'.

4.1.3. Epenthesis

The typical syllable structure in Bilin does not tolerate branching onsets or codas (though see the discussion on syncope and rhotic fortition below). Three different morphophonemic contexts illustrate the insertion of the epenthetic vowel /ɨ/:

(6)	a.	/ʃɨbka/	'hair (sg.)'
		/ʃɨbk/ → [ʃɨbɨk]	'hair (pl.)'
	b.	/alibd-i/	'remember! (sg.)'
		/alibd-na/ → [alibdɨna]	'to remember'
	c.	hanna	'Hanna'
		hannar	'Hanna's'
		medħanit	'Medhanit'
		medħanitir	'Medhanit's'

4.1.4. Syncope

Palmer (1960:110) stated that consonant clusters were possible 'only in syllable junction.' Yet the first exception to this generalization lies in the occurrence of consonant clusters within an onset. Most often, the vowel /ɨ/ is syncopated when it occurs between an initial stop and a liquid (7a), though it occasionally occurs medially (7b) and rarely involves other vowels (7c):

(7)		Lexical	Syncopated	Gloss
	a.	bɨlin	blin	'Bilin'
		bɨrax^{w}	brax^{w}	'hot'
		kɨri	kri	'die!'
		gɨrɨb	grɨb	'knee'
		gɨrɨm	grɨm	'good'
	b.	ʕafɨra	ʕafrá	'foam'
		lɛŋatiraŋɨn	lɛŋatraŋin	'seventy'
	c.	mənadaq'	mandaq'	'wall'
		meʃeráfat	meʃráfat	'fan'

Sometimes syncope creates morphophonemic alternations, making it difficult to determine the underlying representation, given the competing rule of epenthesis:

(8)	kɨrŋa	'stone'	krɨŋ	'stones'
	gɨrwa ~ gruwa	'man'	gru	'men'

The underlying form for 'stones' is probably /kɨrŋ/, which undergoes epenthesis to [kɨrɨŋ] because of a constraint against sonorant clusters in the coda. This is followed by syncope, yielding [krɨŋ]. The form 'stone' /kɨrŋ-a/ is subject to neither syncope nor epenthesis. For the form 'man', syncope vocalizes the glide, while another glide is inserted as a transition between the high back vowel and the low vowel.

4.2. CV Interaction

4.2.1. Labial Spreading

A labialized dorsal consonant optionally rounds an adjacent vowel through [labial] spreading. At this point in the study, it is not clear when the labialization is tautosyllabic (the typical case, as in (9a)), and when it is heterosyllabic (9b).

(9)		Underlying		Surface	Gloss
	a.	ʃiraxʷ	~	ʃiroχʷ	'far'
		gʷɨd-na		gʊd-na	'to lift'
		ʃəkʷəm		ʃəkom	'area of face around chin and lips'
		kʷɨ-dan		kudæn	'your (sg.) brother'
		kʷ'ɨna		k'una	'to eat'
	b.	ʔɨxʷina		ʔuxʷina	'women'

In the plural, where the high central vowel occurs or is inserted by epenthesis, the vowel changes to a high back vowel due to [labial] spread.

(10)	kʷaxʷɨra	'crow'	kʷaxʷur	'crows'
	ʔuŋkʷ'á	'ear'	ʔuŋk'úkʷ'	'ears'
	ʔɨŋgʷi	'breast'	ʔɨŋgʷukʷ	'breasts'
	lukʷ	'foot'	lukukʷ	'feet'

4.2.2. Other vocalic processes

Other processes such as fronting of the low vowel after the voiceless pharyngeal have been observed sporadically, but these are still being worked out. Palmer (1957) has reported a type of vowel harmony, but this has been questioned by Appleyard (1991). It is still under investigation and a definitive analysis is in progress.

4.3. Consonants

4.3.1. Realization of the velar

In syllable-final position (11a), the velar stops are often realized as uvulars after back vowels in syllable-final position (11a), the most common environment, but also in syllable-initial position before back vowels (11b); the uvulars are often affricated. Note they are also subject to debuccalization (§4.3.8).

(11)	a.	ʕamak' ~ ʕamaq͡χ'	'dirt'
		ʕawqʷ' ~ ʕawq͡χʷ	'water'
	b.	k'af ~ q'af	'bark'
		k'uʃa ~ q'uʃa	'sand'

4.3.2. Realization of the pharyngeals

The voiceless pharyngeal fricative /ħ/ is often realized as the glottal [h]:

(12)	ħakim ~ hakim	'doctor'
	medħanit ~ medhanit	personal name

Many Bilin speakers also speak Tigre, and as reported in Raz (1983) for Tigre, Bilin also shows alternation between glottal stop and the voiced pharyngeal approximant in final position (13a), but also sometimes in initial position (13b):

(13)	a.	/kʷálʕa/	'child' vs.
		/kʷáleʔ/ → [kʷáleʔ]	'children'
		kaséʔ ~ kaseʕ	'guts'
	b.	ʔafra ~ ʕafira	'foam'
		ʔakk'anna ~ ʕakk'anna	'to measure'

This was more common for the speaker from Ashera than for the one from Musha.

4.3.3. Rhotic fortition

When the liquid /r/ is adjacent to an alveolar sonorant /l, r, n/, it undergoes fortition to become the voiced stop /d/. This occurs in several morphemes. The possessive marker, for example, is /-r/, as shown in (14a) below. When the stem ends in an alveolar sonorant, however, the /r/ undergoes fortition (14b). The fact that not just any sonorant induces this change is shown by the forms in (14c).

		Name	Possessive form	Gloss
(14)	a.	ħaile	ħailer gidiŋ	'Haile's dog'
		ʔamine	ʔaminer gidiŋ	'Amine's dog'
		tesfu	tesfur gidiŋ	'Tesfu's dog'
		medħanit	medħanitir mets'ħaf	'Medhanit's book'
		zenəb	zenəbir gidiŋ	'Zeneb's dog'
	b.	mikiel	mikield gidiŋ	'Mikiel's dog'
		samiel	samield gidiŋ	'Samiel's dog'
		karar	karard gidiŋ	'Karar's dog'
		baʃir	baʃird gidiŋ	'Bashir's dog'
		sult'an	sult'and gidiŋ	'Sult'an's dog'
		temesgen	temesgend gidiŋ	'Temesgen's dog'
	c.	kibrom	kibromir ʔaxʷar	'Kibrom's head'
		gajm	gajmir gidiŋ	'Gaim's dog'
		mariam	mariamir k'omba	'Mariam's nose'

The possessive forms in (14b) above also illustrate an innovation in Bilin phonology which has not previously been reported: the toleration of branching codas. This parallels the introduction of branching onsets through syncope, described above, suggesting that the rules of syllable structure may be in flux. Expected forms such as *sult'anid or *sult'andi are ungrammatical. (Recall that the high central vowel /i/ does not occur finally.)

The second person singular present suffix /-rəkʷ/ also undergoes fortition to [-dəkʷ] in the same way as the possessive suffix after /l, r, n/:

(15) a. ʔambabɨra-rəkʷ 'you read'
miharse-rəkʷ 'you learn'
wərəd-rəkʷ 'you fetch water'
b. enkel-dəkʷ 'you love'
kʷ'al-dəkʷ 'you see'
fər-dəkʷ 'you go'
ʔintɨr-dəkʷ 'you laugh'
tiʔan-dəkʷ 'you grind'
waran-dəkʷ 'you separate wheat from chaff'

The second person past suffix /-ruxʷ/ also shows such alternations. Compare /gandʒaruxʷ/ 'you slept' with /enkelduxʷ/ 'you loved' and /tiʔenduxʷ/ 'you ground'. Likewise, the third person singular future suffix /-ro/ alternates with /-do/: /gandʒ-i-ro gin/ 'he will sleep' vs. /enkel-do gin/ 'he will love' and /tiʔendo gin/ 'he will grind', etc.

4.3.4. Lateral gemination

When the allative suffix /-lí/ concatenates with a stem ending in a rhotic, the rhotic may optionally undergo gemination with the lateral:

(16) a. kidɨŋ 'field' kidɨŋlí 'to the field'
b. baħar 'sea' baħallí 'to the sea'
kʷ'ɨr 'boys' kʷ'ɨllí 'to the boys/soldiers'
maʃir 'sickle' maʃirlí 'to the sickle'

In one instance, lateral gemination occurred with the velar nasal: /lɨŋɨŋ/ 'house' vs. /lɨŋɨllí/ 'to the house.' The exact scope of this rule requires further investigation.

4.3.5. Final devoicing

Voiced stops are occasionally realized as voiceless, in both final position, and in coda position before a voiceless consonant:

(17) ʃib ~ ʃip 'number'
ʃɨbka ~ ʃɨpka 'hair'

4.3.6. Ejective voicing

Although non-velar ejectives are usually robust, some ejectives are sporadically heard as voiced:

(18) /k'araʧ'na/ → [k'araʤna] 'to cut'
/aʧ'fár/ → [aʤfár] 'claws'
/ħarfɨʧ'na/ → [ħarfɨʤna] 'scratch'
/kʷ'akʷ'ito/ → [gʷaʔʷito] 'he was afraid'

The last form for 'to be afraid' was usually pronounced with ejectives (or debuccalized) by the speaker from Ashera, while the speaker from Musha, and the dictionary by Kiflemariam and Paulos (1992) lexicalize it with the voiced labialized velar stop. This could be fruitful ground for further study of ejectives becoming voiced, a move required by the Glottalic Theory of Indo-European (Gamkrelidze and Ivanov 1995). For ejective voicing, see Fallon (1995, in press).

4.3.7. Miscellaneous, sporadic processes

The speaker from Ashera pronounced the word 'tear (of the eye)' as [ʔɨrum], while the speaker from Musha pronounced it with a final labialized velar nasal: [ʔɨruŋʷ]; compare the form [ʔeruŋʷ] in Lamberti and Tonelli (1997:85). It is possible that in this dialect, a sort of fusion (or tier promotion in Clement and Hume 1995) has taken place, but further study is needed.

The word for 'palm leaf' /tɨdk'a/ was sometimes pronounced as [tɨt'k'a], indicating possible spread of ejection, but again, no other tokens could be found which contained this sequence.

4.3.8. Debuccalization

Debuccalization is the loss of oral articulation with the retention of (or replacement by) glottal laryngeal features, as in the North American pronunciation of *kitten* as [kɪʔn̩]. In Bilin, debuccalization of velars, both voiceless and ejective, optionally takes place. For example, the plain velar (or uvular) ejective in word-medial or coda position may be pronounced as a glottal stop (also noted by Lamberti and Tonelli 1997:88-90):

(19)	a.	/tak'áxʷ/ →	[taʔáxʷ]	'heavy'
		/ʔenk'ak'/	[ʔɛŋk'aʔ]	'girl'
		fok'na ~ foʔna		'to have sex'(connotations vary)
		lak' ~ laʔ		'flour'
		ʕamaqa ~ ʕamaʔa		'dirt'
		tʃ'amaq'na ~ tʃ'amaʔna		'to squeeze'
		ʔaq'arna ~ ʔaʔarna		'to swell'
		dəbək' ~ dəbaʔ		'forest'
		muq'aq'ɨrna ~		
		muq'aʔɨrna ~ muʔaʔɨrna		'to tend flock'
	b.	t'atak'i		'weave!'
		t'atak'na ~ t'ataʔna		'to weave'
	c.	lak'éxʷ		'he vomits'
		laʔ-na		'to vomit'

The forms in (19b) and (19c) illustrate some of the morphophonemic variation created by debuccalization. When the root ending in a velar occurs prevocalically, it is in onset position, and thus the velar place is preserved. However, when it occurs preconsonantally, in coda position, debuccalization takes place.

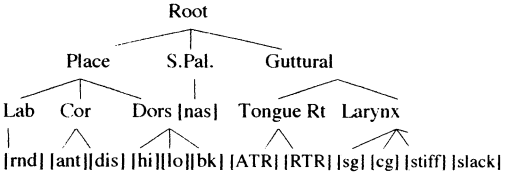
Of great theoretical significance, however, is debuccalization with preservation of secondary articulation. Normally, when primary place features are lost, one would expect secondary features to be lost as well. However, when the labialized velar is debuccalized, labialization is preserved. The underlying velar may be recovered from either morphophonemic alternations, as in (19b, c) or through different speech tempos, with slow speech preserving the velar articulation, and fast speech showing the debuccalized variant. In a few tokens, the debuccalized variant alternated with the voiced pharyngeal approximant, suggesting that debuccalization may feed the apparently free variation between glottal stop and the pharyngeal described in 4.3.2. Some representative examples are illustrated in (20):

(20)	juqʷʼərá ~ juʔʷəra	'daughter'
	ʔɛnákʷʼɨra ~ ʔɛnáʔura	'this boy'
	kʷʼakʷʼito ~ kʷʼaʔʷito	'he was afraid' (Ashera speaker only)
	ʔukʷʼɨtu ~ ʔoʔotu	'few'
	boqʷʼtɨna ~ boʔʷotɨna	'to flow'
	déɾɛqʷʼa ~ déɾɛʔʷa	'type of mud for bricks'

The labialized glottal stops transcribed in (20) above have been confirmed instrumentally in spectrograms made by the author, which were omitted due to space. A more precise phonetic analysis is forthcoming.

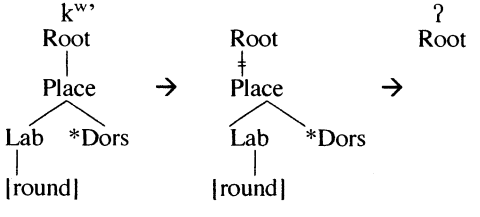
Within the framework of feature geometry, there are two principal competing American models: the articulator-based geometry of Halle (1995), and the constriction-based model of Clements and Hume (1995). In Halle's model, shown in (21), secondary articulation is represented by the use of a dependent feature such as |round| for labialization, while primary articulation is represented with a primary articulator feature such as Dorsal, asterisked to indicate primary, not secondary articulation.

(21) Halle's Articulator-based Geometry (irrelevant features omitted)



Halle has claimed that 'formally debuccalization renders the part of the feature tree that is dominated by the Place node invisible' (1995:14); in other words, Place is delinked, and features dominated by Place are delinked also. With this basic conception of debuccalization, no labialized velar can preserve its labialization, since both the primary place feature Dorsal, and the secondary place feature |round| (dependent under Labial) are dominated by Place, which is delinked. With the addition of Halle's redundancy and repair rules, the output of this operation would be a plain glottal stop, as shown in (22), with irrelevant structure omitted:

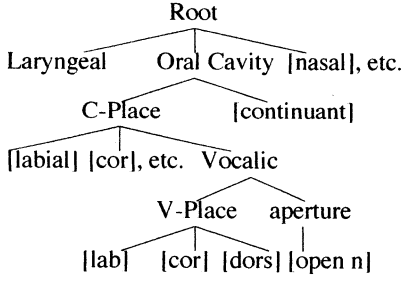
(22)



Halle could, of course, define debuccalization differently, or specify the delinking of primary but not secondary features, though this also poses definitional problems for his model (see Fallon 1999a, 1999b, in press).

The Clements and Hume (1995) model of feature geometry does not subsume secondary articulation features under primary place features, as does Halle's model. Instead, the Consonant-Place node dominates both primary place of articulation features, and the Vocalic node, which in turn dominates an Aperture (vowel height) node, and the vocalic (secondary articulation) features.

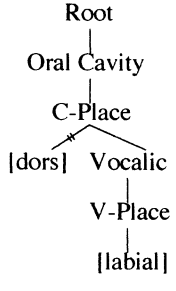
(23) The Clements-Hume (1995) model (partial)



The model in (23) predicts that loss of primary articulation does not necessarily entail loss of secondary articulation; for both to be lost, the node dominating them both, C-place (or the Oral Cavity node) would need to be deleted.

In the Clements and Hume model, debuccalization in Bilin may be described as the delinking of [dorsal] under C-place; the labialization feature, [labial] under the V-Place node, is simply left intact. This is formalized in (24):

(24) Bilin debuccalization of a labialized velar



Thus Bilin is another case in the literature that documents the independence of primary and secondary articulation features; see also Clements (1989, 1991), Herzallah (1990), Odden (1991), Hume (1992), Ní Chiosáin (1994), Clements and Hume (1995), and Fallon (1999a, 1999b).

In addition, Bilin provides the only clear case thus far of synchronic debuccalization with preservation of secondary articulation for glottal stop. Other cases have involved historical changes through reconstruction or comparisons of dialects. Irish shows synchronic debuccalization to the glottal fricative /h/, with preservation of palatalization. A summary of other cases of debuccalization with preservation of secondary articulation is provided in Fallon (1999a, 1999b).

4.4. Phrasal processes

Nasal place assimilation occurs across word boundaries, with both alveolar and bilabial nasals assimilating to a following velar stop, as the following data show:

(25) /jin gin/ → [jiŋgin] 'we are'
/k^{w}'ira girim gin/ → [k^{w}'ira griŋ gin] 'he is a good boy'

Other phrase-level and fast-speech phenomena are still under study.

5. Conclusion

This paper has two main contributions. First, although Bilin has been described previously, there is as yet no detailed, systematic description that approaches descriptive adequacy. This paper is a step in that direction. In describing Bilin phonology, we have also seen new phenomena that have not been described before–the creation of onset clusters through syncope, and the presence of coda clusters through morpheme concatenation in the possessive forms. Such apparent innovations have interesting repercussions for syllable structure, and for the syllabary which has been devised for the language (see Kiflemariam 1996). In addition, although debuccalization has been noted, debuccalization with preservation of labialization has not. This phenomenon forms the basis of the second main contribution, support for the independence of primary from secondary articulation, and for support of the constriction-based model of feature geometry of Clements and Hume (1995). Although this study has described some of the more important segmental phenomena, the role of purported vowel harmony, and the status of tone in the phonological component await further study.

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Syntactic Anchoring in Hausa and Coptic *wh*-constructions[1]

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0. Introduction

This study represents the first systematic comparison of *wh*-constructions in the Afroasiatic languages Hausa (Chadic) and Coptic (Ancient Egyptian 400-1000AD). Since the 1970s, extensive research has been carried out on the syntactic similarities between such diverse sentence types as *wh*-questions, focus constructions and relative clauses. This 'natural class' of sentences is characterised by the presence of an open position or variable, which is assigned an interpretation by a scope-taking expression, and is therefore labelled operator-variable constructions. In the languages we are looking at, membership of this class is signalled by specialised inflectional morphology. We will refer to this specialised morphology as 'relative aspect' in the sense of Schuh (1985).[2] In this paper we will mainly be concerned with the syntactic conditioning underlying the absence or presence of a relative aspect form in a given interrogative context.

1. Descriptive facts

In this section we will outline the descriptive facts surrounding relative aspects in Hausa and Coptic Egyptian. We will establish that both languages not only make productive use of the same type of specialised inflectional morphology, but also show consistent distributional behaviour with respect to the syntactic conditioning of relative aspect marking.

1.1. Introducing relative aspects

Hausa and Coptic Egyptian can both be described as discourse-configurational languages, where topic and focus prominence involves a departure from the canonical SVO word order, illustrated in (1a-b) below. The data throughout this

[1] We would like to thank Lisa Lai-Shen Cheng, Phil Jaggar, Jamal Ouhalla and Johan Rooryck for helpful comments and suggestions. Any remaining errors are our own.

[2] The use of special inflection in interrogatives is by no means restricted to Afroasiatic languages. See Haïk (1990) for a recent overview.

section will be presented in pairs, where the a-sentence is from Hausa and the b-sentence from Coptic, indicated by superscript H and C, respectively.

(1) a. yârā **sun** tàfi kàsuwā
children 3pl.PERF go market
'The children went to market.' [H]

b. **a** te.f–so:ne o:l n–ne.f–kees
PERF DD:sf.3sm-sister gather DO.marker-DD:pl.3sm-bones
'His (Apa Mena's) sister gathered his bones' (Mena, 4a:1-2)[C]

In both languages, the inflectional element is morphologically independent from the verb. In pragmatically neutral declarative clauses (1), the inflection word (indicated in boldface) assumes a neutral form. In the context of relative embedding, however, a specialised form of inflection is found (whence the traditional term 'relative aspect'):[3]

(2) a. àkwâtìn |$_{CP}$ dà **sukà** sakà kāyā à ciki(nsà) |
box.DD C^0 3pl.REL-PERF put things at inside(of.3sm)
'the box that they put the things in'[H]

b. pe–ma [$_{CP}$ ø **nt–a**–k–k^{j}nt–f nhɛt–f]
DD:sm-place C^0 REL-PERF-2sm-find-3sm inside-3sm
'the place where you found it (the boat)'(Ac. A&P 204:145-6) [C]

However, relative aspects are not simply subordinate inflectional forms that appear in relative clause constructions, witness the fact that the same form occurs in main clause patterns, e.g., *wh*-interrogatives, as illustrated in (3):

(3) a. wà$_i$ yârā **sukà** ganī t$_i$
who children 3pl.REL-PERF see
'Whom did the children see?' [H]

b. awo **nt–a**–u–ei eβol to:n
and REL-PERF-3pl-come PCL where
'and from where did they come?' (Apoc. 7:13)[C]

Note, however, that there is a substantial difference between Hausa and Coptic with respect to the syntactic position of the *wh*-phrase relative to the special inflected form. As shown by (3a), the questioned object *wà* 'whom' appears ex-situ in front of the sentence subject *yârā* 'children', while in (3b) the questioned prepositional object *eβol to:n* 'from where' remains in-situ in the postverbal

[3] In Hausa, not every inflectional form has a relative counterpart, and some forms are therefore restricted to non-relative contexts. See Newman (2000) and Jaggar (2001).

position. We will elaborate on the correlation between relative aspect marking and syntactic positioning of interrogative phrases in section 1.2.

As already noted, relative aspects are not simply subordinate inflectional forms. Neither can they be analysed as interrogative scope markers *per se*, since there is yet another context in which they are commonly found, namely focusing sentences:

(4) a. shìnkāfā Kànde **ta** kāwō (bà masàrā ba)
rice Kande 3f.REL-PERF bring NEG maize NEG
'Kande brought RICE (not maize).' [H]

b. mpo:r pa–ʃere mp–u–toʃ–k gar e–ti–oikonomia
no DD:sm:1s- son NEG:PERF-3p-appoint-2sm PCL to-this:sf-service
alla **nt–a** p–tʃoeis toʃ–k e–u–solsl
but REL-PERF DD:sm-lord appoint-2sm as-INDEF:s-comfort
n–ne–snɛu et waaβ et ʃoop hm p–tʃaye
for-DD:pl-brothers C^0 be.holy C^0 live inside DD:sf-desert

'No, my son! You have not been appointed (lit. they have appointed you) for this (hermitic) life-style, but the Lord has appointed you AS A COMFORT FOR THE HOLY BROTHERS who live in the desert' (Onnophr. 216:33-217:1)[C]

It is clear, then, that relative aspect marking does not represent a clause-typing device that distinguishes interrogative from declarative clauses in the sense of Cheng (1991). Rather, the spellout of relative aspect reflects properties of information structure, and has therefore been described as a morphological signal of conceptually salient or focal information in both languages (see Jaggar 2001, Green & Jaggar 2000, Reintges 1998).[4] We leave open here the question of whether the so-called narrative use of relative aspects in both languages can be reconciled with a focus account, since our main concern here is with the formal syntactic aspects of relative marking in interrogative clauses.

1.2. Syntactic distribution of relative aspects in *wh*-questions

We now take a closer look at the distribution of relative aspects in *wh*-questions. In both languages, there are two syntactic positions for interrogative phrases, one of which is clause-initial, and the other clause-internal. We assume a transformational approach where the clause-initial placement of the questioned constituent is derived by a movement operation, whereas clause-internal *wh*-phrases do not undergo movement, but remain in-situ. *Wh*-movement of

[4] Although we do not discuss this further, it is plausible to include relative clauses within the cover-term 'focus', since relative clauses have some identificational function. See Jaggar (2001).

questioned subjects and adjuncts is illustrated in (5) and (6) respectively. In Hausa, *wh*-fronting represents the strongly preferred option, whereas in Coptic such examples are only marginally attested.

(5) a. wà dà wà t_i **sukà** zō
who.pl 3pl.REL-PERF come
'Who came?'^{H} (Newman 2000:488)
b. nim a-f-ent-k e-pei-ma
who PERF-3sm-bring-2sm to-this-place
'Who brought you here?' (KHML I 3:7-8)^{C}

(6) a. ìnā $_i$ **ka** gan sù t_i
where 2sm.REL-PERF see 3pl
'Where did you see them?'^{H} (Newman 2000:491)
b. eβol to:n **a**-tetn-ei e-pei-ma
PCL where PERF-2pl-come to-this-place
'From where did you come here?' (Onnophr. 220:8)^{C}

Observe that in Hausa *wh*-fronting co-occurs with relative aspect marking, as (5a) and (6a) show. In Coptic, on the other hand, relative aspects are systematically absent in *wh*-fronting structures, as examples (5b) and (6b) show. The reverse obtains in *wh* in-situ questions. Not only is the non-movement option dispreferred in Hausa, it also blocks relative aspect marking, as shown by (7a) and (8a).[5] This contrasts with Coptic Egyptian, where *wh* in-situ questions are commonly attested, and require the presence of relative aspect marking, as shown by (7b) and (8b):

(7) a. **kin** ga dà wà dà wà à makarantà
2sf.PERF see who.pl at school
'Whom did you see at school?'^{H} (Jaggar 2001, ch12, fn5)
b. **e**-i-**na**-tʃe u na-k
REL-1s-FUT-say what to-2sm
'What shall I say to you?' (AP Chaine no.28)^{C}

(8) a. **yā** tàfi yàushē
3sm.PERF go when
'When did he go?'^{H} (Newman 2000:496)
b. **nt-a**-k-ei e-pei-ma n-aʃ n-he
REL-PERF-2sm-come to-this-place in-what of-matter
'How did you get here?' (Onnophr. 206:29)^{C}

[5] See Jaggar (2001) for a thorough description of the facts concerning ex-situ and in-situ *wh*/focus in Hausa, and Green and Jaggar (2001) for discussion.

The distributional patterns discussed so far are summarised in table 1, where + indicates the presence and – the absence of relative aspect marking.

TABLE 1. *Distribution of relative aspect* (RA) *in Hausa and Coptic* wh-*constructions*

		HAUSA	COPTIC
***wh*-fronting**	*wh*-fronted subject	+ (5a)	- (5b)
	wh-fronted object	+	-
	wh-fronted adjunct	+ (6a)	- (6b)
***wh*-in-situ**	*wh*-in-situ subject	*ungrammatical*[6]	+
	wh-in-situ object	- (7a)	+ (7b)
	wh-in-situ adjunct	- (8a)	+ (8b)

To conclude this review of the descriptive facts, Hausa and Coptic employ the same type of specialised inflectional morphology in interrogative sentences, but are the mirror-image of one another with respect to the syntactic conditioning of this specialised morphology. In Hausa, *wh*-fronting requires relative aspect marking, while it is prohibited in the corresponding Coptic structures. Conversely, relative aspect marking is blocked in Hausa *wh*-in-situ constructions, but obligatory in Coptic. In the remainder of this paper, we will explore a configurational analysis of these distributional patterns with a view to establishing whether these follow from parametric variation within the inflectional system.

2. The configurationality of relative aspect marking

We will first outline our assumptions concerning the basic clause structure of the two languages. Of particular concern will be the different position of the inflectional element in the syntactic configuration, and the relative ordering of topic phrases on the one hand, and focus and *wh*-phrases on the other. A discussion of the latter point reveals that *wh*-fronting does not target the complementiser phrase as a landing site.

2.1. Hausa

In Hausa, the preverbal inflection word carries a range of information (person, number, gender, tense-aspect) and can be separated into 'person marker' and 'tense-aspect marker'. For the time being, let us assume that the inflectional element is base-generated in the standard position as head of IP (see diagram 16a).

A movement analysis for *wh*- and focus phrases can be motivated on the basis of significant differences between these constructions and topic constructions, where both involve clause-initial positions (see Tuller (1986) and references cited

[6] Green and Jaggar (2001) argue that *wh*-in-situ in Hausa is restricted to constituents carrying nuclear stress, hence the ungrammaticality of *wh*-in-situ subject questions.

there). As example (9) shows, multiple topics are possible, which is not the case for focus. Furthermore, topic structures do not trigger relative aspect marking, and show a preference for resumption:

(9) àyukàr$_i$ kùwa, sanyī dai, **yā** gamà dà ita$_i$
goat.DD.f TOP-PCL cold TOP-PCL 3sm.PERF finish with 3sf
'The goat, well the cold, it finished it off.' (Newman 2000:617)

As examples (5a) and (6a) show, however, focus fronting does trigger relative aspect marking. Resumption is also dispreferred in focus constructions. Topics and focus may co-occur, but topic precedes focus, as shown by example (10):

(10) ɓàrāwòn$_i$, Audù nē **ya** kashè shi$_i$
thief.DD.m Audu COP.m 3sm.REL-PERF kill 3sm
'As for the thief, AUDU killed him.' (Newman 2000:621)

Furthermore, as Tuller (1986) shows, focus fronting structures display subjacency effects, but topic structures do not. For this reason, topics are assumed to be base-generated, whereas focus fronting involves a movement operation. The same reasoning can be applied to *wh*-fronting structures, where these pattern with focus phrases. As Tuller argues, *wh*-fronted and focus-fronted phrases must occupy the same position since they cannot co-occur.[7] This is illustrated by the ungrammaticality of example (11):

(11) *wà Kànde cè **takè** sô
who Kande COP.f 3sf.REL.IMPERF love
'Who does KANDE love?'

A further issue arises in relation to the optional copula in Hausa focus fronting structures, for example *cè* in (11). Tuller (1986) and Green (1997) argue that these constructions do not involve clefting in the sense of a bi-clausal structure. Instead, these constructions are argued to be monoclausal, where the focus or *wh*-phrase targets the clause-initial projection. Tuller adopts the standard assumption that the preposed *wh*-phrase targets the specifier of CP, but Green (1997) argues that the relevant projection is the Focus Phrase in the sense of Brody (1990) and much related research. The first argument concerns the optional presence of the copula, which can be reanalysed as a focus-marker that lexicalises the F^0 head. Such an analysis is consistent with focus readings on non-verbal sentences, but we will not explore this issue further here. The second argument relates to the fact that preposed *wh*-/focus phrases may be preceded by a subordinating

[7] Neither are multiple *wh*/focus constructions possible where one *wh*/focus phrase remains in-situ - with the possible exception of multiple *wh*-questions, where the in-situ *wh*-phrase receives an echo-question interpretation. See Newman (2000:494).

complementiser like *cêwā* 'that', as shown by (12). This strongly suggests that *wh*/focus fronting does not target CP, and that CP dominates FP:[8]

(12) mutânên **sun** tsayâ cêwā Kàndei cè **sukè** sô t_i
men 3pl.PERF insist C^0 Kande COP.f 3pl.REL-IMPERF love
'The men insisted that they love KANDE.'

2.2. Coptic

In Coptic, as in Hausa, the inflectional element is a free functional morpheme. Unlike Hausa, Coptic makes use of two positions for such inflectional elements, one preceding the subject and the other following it. The clause-internal position, however, is limited to root modals. Reintges (2001) argues that these inflectional elements are auxiliary verbs. For the purposes of this paper, we will not further explore the complex interaction between the two auxiliary positions, but assume without further discussion that the pre-subject auxiliary is base-generated in the first functional projection dominating IP. This projection corresponds to Rizzi's (1997) Finite Phrase, such that the inflectional auxiliary stands in a local case-licensing relationship with the subject in specIP. See diagram (16b) for illustration.

Coptic Egyptian shows three interrogative patterns (*wh*-in situ, *wh*-fronting and *wh*-clefts, the latter involving a biclausal structure). All three interrogative patterns permit a lexicalised question cue in the form of a dedicated interrogative particle, which typically marks both biased and non-biased yes-no questions. Interrogative particles like *eye* must appear in the topmost position of the clause, thereby preceding *wh*-fronted or *wh*-clefted constituents, as examples (13a & b) illustrate:

(13) a. eye etβe u tetn–tʃorm nso:–n (*wh*-fronting)
Q because.of what (PRES)-2pl-look for-1pl
'For what reason are you looking for us?' (Acts 3:12)^C

b. eye u p(e) [CP et na ʃo:pe hm p–et–ʃuʃou] (*wh*-cleft)
Q what COP:sm C^0 FUT happen to DD:sm-C^0-dry.out
'(It) (is) what that is going to happen to the one (tree) having dried out?'
(Luke 23:31)^C

[8] Embedded topics are also possible; cf:

i) mutânên **sun** tsayâ cêwā Kàndè kùwa **sunâ** sônta
men 3pl.PERF insist C^0 Kande TOP.PCL 3pl. IMPERF love-3sf
'The men insisted that, as for Kande, they love her.'

c. eye **ere** ne.tn–ʃere nutʃe eβol hn nim (*wh*-in-situ)
Q REL (-PRES) DD:pl.2pl-son cast PCL in whom
'In whom are your sons casting out (demons)?' (Luke 11:19)[C]

In line with Cheng (1991), we interpret this positional restriction as indicative of the fact that interrogative particles are base-generated in C^0. Since the fronted or clefted *wh*-interrogative phrase always follows the question particle, it cannot be located in the specifier-position of the CP, but must rather occupy the specifier position of a functional projection below C^0 and above the IP domain. In line with Rizzi's left periphery analysis, we assume that the relevant projection is the non-recursive Focus Phrase. Assuming that both *wh*-fronted/clefted and focus-fronted phrases occupy the same position, namely specFP, as in Hausa, a number of gaps in the Coptic documentation receive a principled explanation. Thus, neither multiple fronting nor a combination of in-situ and ex-situ *wh*-questions is attested. The same holds for focus constructions and a combination of *wh*- and focus, indicating that both constituents compete for the same syntactic position.

In Coptic, as in Hausa, topics may precede focus. Notice that the topic phrase *p–mow* in (14) does not correspond to any gap/resumptive in the associated clause:

(14) eis p–mow u p(e) [CP et kolue]
look DD:sm-water what COP:sm C^0 (PRES)hold.back
e–tra–tʃi–baptisma
to-CAUS.INF:1s-get-baptize
'(as for) water, (it) (is) what that stops me to get baptized?' (Acts 7:36)[C]

Unlike Hausa, the focus may be followed by a topicalised temporal adverb like *tenu* 'now', as in (15):

(15) nim tenu p(e) [CP et sorm m–p–meeʃe]
who now COP:sm C^0 (PRES)-mislead DO-marker-DD:sm-crowd
'(it) (is) who now that is misleading the crowd?' (Ac. A&P 212:231)[C]

In Coptic, then, the clefted *wh*-phrase can be both preceded and followed by a topicalised element, which provides further evidence that the focused phrase is not in specCP.

2.3. Interim summary

The basic aspects of Hausa and Coptic clause structure considered so far are schematically represented in the diagrams in (16) and (17), respectively:

(16) Hausa

$[_{CP}\ [_{C}\ \text{COMP}\ [_{TOP\,P}\ \text{TOPIC}[_{TOP}\ \text{TOP PCL}\ [_{FOC\,P}\ \text{FOC}/\textit{WH}\text{-XP}\ [_{FOC}(\text{COP})\ [_{IP}\text{SU}\ [_{I}\ \text{INFL+REL}\ [_{VP}]]]]]]]]]$

(17) Coptic

$[_{CP}\ [_{C}\ \text{Q PCL}\ [_{TOP\,P}\ \text{TOPIC}[_{TOP}\ [_{FOC\,P}\ \text{FOC}/\textit{WH}\text{-XP}\ [_{FOC}\varnothing\ [_{FIN\,P}\text{AUX}[_{IP}\ \text{SU}\ [_{I}\ \text{AUX}_{MOD}\ [_{VP}]]]]]]]]]$

It can be observed that the structural configuration of the topic-focus field in both languages is almost identical. The main structural difference concerns the presence of an extra functional projection for inflectional elements in Coptic (the Finite Phrase).

3. The syntactic conditioning of relative aspects

In the previous section, we have identified a dedicated position for *wh*- and focus constituents in the pre-clausal domain: the Focus Phrase. We have also briefly commented on the internal and external location of inflection in Hausa and Coptic, respectively. In this section we examine the syntactic factors conditioning relative aspect marking within the configurations that we have outlined. We propose an analysis of relative aspect marking cast in terms of syntactic anchoring: the linking of a propositional feature to a particular syntactic position. We will begin with an informal introduction to the functional role of syntactic anchoring, and then explore its relation to the range of syntactic positions available for *wh*-phrases in Coptic and Hausa.[9]

3.1. Anchoring the *wh*-feature to inflection

In line with Rizzi (1996) we assume that the illocutionary force of a matrix *wh*-question has to be specified in the structure because, unlike embedded *wh*-questions, there is no higher verb (like English *wonder* or *ask*), which lexically selects an interrogative complement. Rizzi argues that this *wh*-specification is anchored to inflection, a plausible assumption given the functional role of the inflectional head as the locus of core propositional features. In English, the *wh*-specification on the I^0 node has no overt morphological reflex, hence the inflectional head has to move to the complementiser domain, via I-to-C movement, which results in subject-auxiliary inversion and creates a local relationship where the *wh*-phrase is in the specifier of CP, and the *wh*-marked auxiliary is in the head position.

[9] Space does not permit a discussion of previous analyses, but see Tuller (1986, 1992) for an analysis in terms of covert I-to-C raising, and Haïk (1990) for an account in terms of Binding Theory.

In Hausa however, the *wh*-specification on the I^0 node does have an overt morphological reflex. This is why the inflectional head does not need to raise to a higher position to spell out the feature. In other words, the syntactic anchoring of the *wh*-specification is morphologically visible as relative aspect marking.[10]
In Coptic, on the other hand, syntactic anchoring of the *wh*-specification does not originate with the inflectional head, but with a designated functional head - the F^0 node dominating the externalised inflection in the Finite Phrase. We propose that F^0 has unchecked tense features, along with the *wh*-feature, a plausible hypothesis on the grounds that the *wh*-specification has to be linked to a finite proposition. For this reason, the auxiliary in the head of Finite Phrase raises to incorporate into F^0, where the syntactic anchor is lexicalised as the relative aspect morpheme. This incorporation analysis captures in a straightforward manner the allomorphic variation of the relative aspect marker: it takes the form *nt-* when the Perfect auxiliary *-a* is incorporated, and the default form *e-* in all other contexts.

3.2. Licensing wh-in-situ

Recall that in Coptic, relative aspect marking co-occurs with *wh*-in-situ. This correlation receives a straightforward explanation if we assume that the syntactic anchoring of the *wh*-specification to a designated structural position serves as a licensing device for the *wh*-phrase to remain in situ. This analysis is in line with Cheng (1991), Cheng and Rooryck (2000) and related research. In clause-internal position *wh*-phrases do not have interrogative scope. For this reason, an independent scope-marker has to be inserted into the structure in the form of the relative aspect marker.

Turning to Hausa, recall that relative aspect marking does not co-occur with *wh*-in-situ. How can we explain the absence of the syntactic anchoring device in these contexts? We propose that the specialised interrogative tone pattern (clause final low tone), described by Newman (2000) and Jaggar (2001) as the 'Q-morpheme', is what licenses *wh*-in-situ. The marginal status of *wh*-in-situ in Hausa (as opposed to Coptic) might receive a partial explanation from the restriction of this licensing device to matrix clauses, as described for French by Cheng and Rooryck (2000). Embedded *wh*-in-situ is not attested in Hausa.

3.3. Wh-movement and feature matching

Having discussed the licensing of *wh*-in-situ questions, we turn now to the syntactic conditioning of *wh*-movement. For Coptic, we observed a strict complementarity between *wh*-fronting and relative aspect marking. Given that relative aspect licenses *wh*-in-situ in Coptic, it follows that when the *wh*-phrase raises to a scope position, syntactic anchoring can be dispensed with. Thus, what we are dealing with is a maximally economical operation for interrogative scope

[10] This is not restricted to matrix clauses in Hausa, however. Embedded *wh*/focus constructions display relative aspect. For most speakers, however, only the matrix INFL occurs in the relative form in cases of successive cyclic movement, which is consistent with the present analysis.

assignment. There exist only two options: either the insertion of a lexicalised scope marker, or movement to a scope position. This state of affairs falls within the predictions of the Clause Typing Hypothesis (Cheng 1991), according to which a clause is typed as a question either by means of a question morpheme or by means of *wh*-fronting.

In Hausa, on the other hand, the co-occurrence of relative aspect marking and *wh*-fronting represents a derivationally more complex option. The data show that *wh*-movement has to be accompanied by the presence of the syntactic anchor, which is reminiscent of the situation in English regarding subject-auxiliary inversion. The question arises of what necessitates such an anchoring device, given that the *wh*-phrase is in the designated scope position. Moreover, the syntactic anchor is not in a local relation with any functional head in the *wh*/focus domain.

A plausible solution may be offered by recent developments within the Minimalist framework, concerning the construction of a cyclical domain or 'derivational phase' in the terms of Chomsky (2001). In Hausa, the relative aspect and the *wh*/focus-phrase have a substantial part of their feature composition in common. That is, both elements have a *wh*/focus feature as well as nominal functional features - or *phi*-features - (in the case of subject *wh*/focus-phrases) such as person, number and gender, as well as case features, the main difference being the additional tense/aspect features in the inflectional complex. In the course of building the lower cyclical domain, that is, the inflectional phrase, *wh*/focus-features of both the *wh*/focus-phrase and the relative aspect have to be 'matched'. This matching, known as 'agree', is accomplished by bringing both elements together in a particular structural configuration. Assuming a split INFL and a VP-internal subject, the agree relation is triggered by the movement of the *wh*/focus-phrase via the projections of the inflectional heads, en route to the second cyclical domain, the *wh*/focus domain. Example (18) illustrates the derivation of a subject NP question, where both *phi*- and *wh*-features on INFL agree with the subject. The derivation of an object NP question is illustrated in (19), where phi-features on INFL agree with the subject, and the *wh*-feature with the object:[11]

(18) subject NP question

$[_{FP}\ NP_{[+wh]i}\ [_{F0}\ ]\ [_{AGRSP}\ t_i [_{AGRS}\ INFL+V]\ [_{TP}\ t_i [_{T[+wh]}\ t_V]\ [_{AGROP}\ OB\ [_{AGRO}\ t_V]\ [_{VP}\ t_i\ [_V\ t_V]\ [_{NP}\ t_{OB}]]]]]]$

(19) object NP question

$[_{FP}\ NP_{[+wh]i}\ [_{F0}\ ]\ [_{AGRSP}\ su\ [_{AGRS}\ INFL+V]\ [_{TP}\ t_{SU}\ [_{T[+wh]}\ t_V]\ [_{AGROP}\ t_i [_{AGRO}\ t_V]\ [_{VP}\ t_{SU}\ [_V\ t_V]\ [_{NP}\ t_i]]]]]]$

4. Summary and conclusions

In this paper we have explored the phenomenon of relative aspect marking in two related Afroasiatic languages from the perspective of how morphology and

[11] Note that this analysis incorporates verb raising. See Green (1997) for discussion.

syntax interact in the derivation of *wh*-questions. In both languages, relative aspect marking has an anchoring function. In Coptic, the anchor is associated with a clause-external position, and serves as a scope-marking device, which permits the *wh*-phrase to remain in-situ. In Hausa, on the other hand, the anchor is involved in the construction of a cyclic domain which marks the first derivational phase of a *wh*-fronting construction. It follows from this analysis that *wh*-anchoring is absent from *wh*-in-situ in Hausa. This contrasts with Coptic, where *wh*-fronting blocks the introduction of a syntactic anchor into the structure. This analysis can be extended to focus constructions, since relative aspect marking anchors a substantive scopal feature in the structure, which may be [+*wh*] and/or [+focus].

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The Middle in Cushitic Languages*

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0. Middle Marking in Cushitic

This article provides an overview and discussion of the semantic properties of the middle derivation in a number of Cushitic languages. It builds on earlier typological work on the semantics of the middle, such as Kemmer (1993). Cushitic languages, and Afroasiatic languages in general, were not included in Kemmer's typology, as remarked by Palmer (1995) in his review of Kemmer (1993). On the Cushitic side, the paper builds on Hayward (1977), Saeed (1995) and Mous and Qorro (2000).

In Cushitic languages middles are expressed on the verb not inflectionally but derivationally. In (1) an example from Iraqw is given. In (1a) the agent is the first person singular, expressed on the verb, and the patient, the ankle, is object; in the sentence with the derived middle, (1b), the agent is now conceived to be the body (part) itself, expressed as subject. Lexicalizations of middle derivations also occur, e.g., *bu'uut* 'be sufficient' which originated in a middle derivation from *buu'* 'pay' but no longer has any semantic link to 'pay'.[1]

(1a) ya'e-r-'ée' a-ga tunquláa/
leg-F-my O.F-PF sprain:1SG
'I sprained my ankle.'

(1b) ya'e-r-'ée' aa tunqulu/-út
leg-F-my S3:PF sprain-MIDDLE:3F
'My ankle sprained.'

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[1] The following abbreviations are used: 1SG for first person singular, etc, CS for causative, F for feminine, IMPS for impersonal subject, INSTR for instrumental, M for masculine, O for object, PF for perfect, PST for past, REC for reciprocal/reflexive, S for subject, SR for subject-reflexive (=middle). The letter *c* in Somali, */* in Iraqw and *q* in Afar represents the voiced pharyngeal fricative; in Iraqw *sl* is the lateral fricative, *ts* and *tl* are ejective affricates and *hh* the voiceless pharyngeal fricative.

Middle affixes are often described as argument reducing or detransitivizing elements. Such a unified and purely syntactic effect cannot be attributed to the middle in Cushitic languages. Saeed (1995:83) shows that transitive middles do exist in Somali, (2). Among the middle or "subject-reflexive" verbs of Oromo too, some are clearly transitive, (3).

(2) *daaqso* (ditransitive) 'put animals to pasture for oneself' (Somali)
culubo (transitive) 'remember, recall'

(3)a. húcc'úu bit -ád'd'-é (Oromo, Owens 1985: 170)
clothes buy -SR -PST
'I bought myself clothes'

(3)b. at isá eerúu k'occi -siif -at -t -e (Oromo, Owens 1985: 170)
you him field dig -CS -SR -2 -PST
'You made him cultivate the field for your own benefit.'

Transitive middles are not restricted to autobenefactive readings as in the above examples. In Iraqw, which does not have the autobenefactive as a productive meaning of the middle, an impersonal is possible with a middle verb, (4). Note that this sentence has both an agent and a patient.

(4) qware'amo-síng ku-na ma'a-r islkúut (Iraqw)
calabash-that IMPS:O.M-PST water-INSTR draw:PST
'One took water with that calabash.'

In addition to a middle derivation all the Cushitic languages under discussion also have a reflexive/reciprocal pronoun which cannot be related to the middle marker. In Kemmer's terms, these are two-form non-cognate systems and the domains of middle and reflexive are easily separated. Since the Cushitic languages have reflexive/reciprocal pronouns, middle reflexives — i.e., a reflexive with middle meaning — could in principle exist. There are no indications that they do. For Iraqw I dare to claim that these do not exist. Iraqw does have cases of lexicalized combinations of the reflexive/reciprocal *ti* + verb, but they always acquire specialized meanings along the reciprocal line and not as middles, e.g., (5)

(5)a. ti aw-áan b. ti tsaahh-áan (Iraqw)
REC go-1PL REC recognize-1PL
'we fight' 'we like each other'

Inherent reciprocal middles such as *hhatliit* 'share, receive one another, take turns' require the reciprocal pronoun, e.g., (6).

(6) kuunga' ti hhatlitá' (Iraqw)
2PL REC share:2PL
'you share'

The Cushitic languages with middle derivation in *t* (or related sounds) include all of East Cushitic —in these languages the middle has a productive autobenefactive meaning— and all of the Southern Cushitic languages where there is no productive autobenefactive meaning. There is no middle in Agaw or other Central Cushitic languages, where the Cushitic middle corresponds to a passive and the Cushitic neuter-passive corresponds to the reciprocal, Appleyard (1980). There seems to be no middle derivation in Beja. We will concentrate here on Afar, Iraqw, Oromo, and Somali for practical reasons, such as availability of dictionaries that can be accessed from the meaning side and familiarity with the languages. The middle in Afar has the form *-(i)t* which is followed by an inflectional vowel *e* in the citation form; the middle derived verbs in Oromo end in *-ad'd'-a*; those in Iraqw end in *-VVt*; the Somali middle derivation is *-at* but the citation form is the imperative form in which the middle is recognizable as a suffix *-o*. Hayward (1977,1984) contain a historical-comparative study of Cushitic middles.

1. Overview of Semantics of the Middle in Cushitic

In this section we study the semantics of Cushitic middle derivations using Kemmer's (1993) semantic typology. Derivational middles in Cushitic languages can be observed not only as clearly derived stems but also as frozen forms in stems which lack a base without the middle derivation, so-called deponents or *media tanta*, and thirdly in middle derived denominal verbs as against causative or inchoative derived denominals, (7). In fact, the latter two groups are more rewarding for the study of the semantic aspects of the middle in those languages in which the productive meaning of the middle is autobenefactive and most derived verbs show only that particular semantic aspect[2]. The number of middle deponents is relatively high, a common trait among languages with morphological middle markers, cf. Kemmer (1993: 22). The deponents fall into the same subsets of meaning that Kemmer has set up in her typology of middle markers. Apparently verbs with a lexical meaning in the middle semantic domain tend to vacuously add a middle affix. In the following I consider all three of the above realizations of the middle marker together, but with an indication whether the verb is derived, deponent or denominal. Apart from the productive autobenefactive meaning seen in Afar, Oromo and Somali, the three types of marking do not show differences in semantic subclassification.

[2] For the same reason, i.e. that their meaning is not restricted to 'for one's own benefit', Hayward (1976) considers the denominal verbalizer a suffix that is different from the (homophonous) middle. The verbs that are derived with this suffix do, however, fall into the semantic subdomains that we discuss below.

(7) Three different types of middle marking:
1. middle derived from a base verb (derived)
2. frozen derived middles (deponents)
3. middle derived from a nominal (denominal)

In the individual languages some but not all verbs belonging to a certain semantic subdomain can take a middle. There are two reasons for this. First of all, since the marking is derivational there is no need to add a middle marker to a verb with a lexical middle meaning. Secondly, languages have different lexical units, words, e.g., not every language has a lexeme 'to loose wings' or 'to teethe'. We will investigate this lack of uniformity in some detail below for the subdomains of body activity and of body position.

Because of the relative arbitrariness of semantic subclassifications by the individual researcher, the contents of these subdomains may vary. For example, what Saeed has classified as inherent reflexive middle verbs denote actions applying to the body of the subject, such as 'anoint oneself', 'treat oneself with medicine', 'scratch oneself (on a part of the body)'; I characterize such verbs as body oriented rather than as inherently reflexive.

I now investigate the coverage of the semantic domains that Kemmer (1993,1994) has set up by middle marked verbs in Afar, Oromo, Somali (all Eastern Cushitic) and Iraqw (Southern Cushitic). For Afar I use Parker and Hayward (1985) and Hayward's (1976) thesis; for Oromo I use Stroomer's (1995) Boraana Oromo lexicon, for Somali I use Saeed's (1995) article and sporadically Puglielli's (1985,1998) dictionaries; for Iraqw I use Mous and Qorro's (2000) article and Mous, Qorro and Kiessling's (in press) dictionary. The results of the survey are schematized in the table in (11).

The Grooming or Body Care domain includes actions of dressing, bathing, shaving which apply to the whole body or part of the body. These events are "very frequently, if not universally, middle-marked in languages with middle markers" (Kemmer 1994:195). The Cushitic middles form no exception. However, this domain is relatively poorly attested for the Southern Cushitic languages. In particular, verbs of washing and bathing are often not middle marked in Southern Cushitic. Middle marked verbs in the Grooming or Body Care domain in the Cushitic languages include the following: Somali has *tidco* 'braid one's hair' middle derived from *tidic* 'braid (hair)' and *diibso* 'use scent, perfume oneself' middle denominal derived from *diib* (m) 'perfume, fragrance'. Iraqw had *deequut* 'shave' middle derived from *deeqw* 'scrape'. Oromo has two deponents for 'to dress oneself' *uyifad'd'a* 'dress oneself' and *keeyad'd'a* 'put on clothes, dress', and Afar likewise: *sarite* 'wear', *bilqite* 'be dressed up, be embellished, be titillated, be dandified'. Most verbs in this domain denote activities that one usually does to oneself. 'To shave' is usually done to oneself if it refers to shaving the beard and this verb is middle marked in Iraqw, but it is typically done by someone else if it refers to shaving the head, and such an activity is expressed by a different, non-middle marked verb in Iraqw, *naa/*. 'To braid (hair)' is an activity that is usually done to someone

else and the middle derived verb is used to indicate that one does the action to oneself. In this respect the middle comes close to a reflexive marker but a reflexive marker is not needed with these verbs, (8a), and when it is used it stresses an unusual conceptual separation of the body and the agent, (8b).

(8a) aako i deequut
father S3 scrape:MIDDLE:3SG.M
'Father is shaving/will shave.'

(8b) aako ti deequut
father REC shave:MIDDLE:3SG.M
'Father is shaving *at himself.*'

The domain of Nontranslational Motion or Body Motion includes verbs "which denote actions of motor manipulation of the body or part of the body, without any particular change of location of the body, [such as ...] 'turn', 'twist', 'bend', 'nod', 'shake' (e.g. one's head) and 'bow'", Kemmer (1994:197). For the Cushitic middles this also includes verbs that take the body (part) as subject, as was the case with the Iraqw middle derived *tunqulu/-út* 'sprain' in (1b) which takes the leg as subject. Iraqw middle deponents in this category include *kweetliit* 'stretch', *kurunkuriit* 'shrink'. Oromo has *hollad'd'a* 'tremble, shiver', *ejanjad'd'a* 'trample, stand on', *birbifad'd'a* 'wriggle, vibrate, struggle get free from a strong grip or a trap'. Somali has the deponents *jimicso* 'stretch oneself, exercise, work out', *jirroorso* (transitive) 'tense one's muscles, bear (pain)', *duco* 'strain (in childbirth or defecation), contract body muscles'. Afar has the deponent verbs *kadiidimite* 'shiver, tremble from fever' and *waleeliqite* 'wriggle, trickle'.

A particular set of verbs of body motion are those that denote movements of the hands. These are typically middle marked, e.g., Iraqw deponent middle verbs *hiriit* 'sew', *kwatiit* 'touch', and *kwahhuut* 'forge, break off by hand, husk grain' (the last is middle derived from *kwahha* 'throwing'). In this subdomain, Oromo has the deponent middle verbs *harirad'd'a* 'go over an animal with one's hand, before slaughtering', *hambaarad'd'a* 'scoop (e.g. grain) with both hands' and we might also include *d'aafad'd'a* 'draw water from a well'. I also take 'to scratch' as part of this domain: Afar has denominal middles *waybite* 'scratch an itch' and *fiilite* 'scratch one's skin' and the deponent *fitfite* 'scratch the ground, e.g. chicken'; and Somali has *xoqo* 'scratch oneself (on a part of the body)', a middle derived verb from *xoq* 'to scratch'. The middle verbs that denote movements of the hands have a subject that controls the action; this is not necessarily the case for the other Body Motion verbs.

Body as Agent (non-volitional) is a domain that Kemmer (1994:201,1993:61) mentions only briefly. This category is very consistently middle marked in Cushitic, as is evidenced by the table in (9). Others such verbs are 'to itch', which is middle marked in Oromo, or 'to teethe', middle marked in Somali, and 'to develop an allergy' in Iraqw, but for these we do not have enough comparative evidence to

include them in the table. Body activities are not all expressed by a middle marked verb. A counterexample is 'to nose bleed' in Oromo and Iraqw. The degree of control of the self over these activities varies from uncontrolled 'get goosebumps', to difficult to control 'sneeze', 'hiccup', 'cough', 'yawn', to controllable but by necessity typically uncontrolled 'breathe'. What these activities have in common is that they involve initiation from the body as opposed to initiation from the 'self'; therefore I do not include 'scratch' in this category.

(9) Table of Middle marking in verbs of Body Activity (not necessarily cognate)

body activity	Afar	Iraqw	Somali	Oromo
cough	depon	depon	-	-
sneeze	denom	denom	-	denom
hiccup	denom	de-ideophonic	-	denom
breathe	-	-	derived	derived
get goosebumps	?	depon	depon	?
yawn	denom	-	denom	denom

The domain of Body States contains verbs that denote a particular state of the body of the subject. This does not occur as a domain in Kemmer's typology, but I find these verbs to be consistently middle marked in the Cushitic languages. Again for some of these verbs it is the body (part) which is subject. In Iraqw this category includes the deponents *xufiit* 'be drunk', *slaqaat* 'be tired', and the middle denominals *ta/anderuut* 'be numb (body part is subject)' from *ta/anteeri* 'numbness' and *hootuut* 'be drastically overdue in pregnancy' from *hoota* 'pregnancy'. Oromo has the deponents *meelad'd'a* 'become dislocated (joints), distorted', *k'and'ad'd'a* 'feel ill, have a fever, get malaria', *k'irk'irfad'd'a* 'feel tickled', *bowafad'd'a* 'have a headache', *nad'd'a* 'have desire for salt', *folad'd'a* 'be ready to deliver, feel birth pangs (animals)', *hifad'd'a* 'tired, be impatient, be annoyed with someone'. Afar has denominal middle verbs *taanite* 'be lazy, get tired' and *daalicite* 'fear, be defeated, be tired', and deponent middle verbs *tutaanite* 'be tired out, be weary', *dahite* 'be paralysed, be dumbfounded, get tired', *soonibite* 'become pregnant' and *luwute* 'hunger, be hungry', and a denominal middle verb *luwaate* 'have morning sickness (of expectant mother)'. Somali has denominal middle verbs *baaho* 'be hungry', *daabo* 'become sick, get diarrhea (of young animals)', *foolo* 'be in labor, start to give birth'. It is striking that most of these middle body state verbs denote negative situations.

(Change in) Body Position: For the Cushitic languages this is a central and one of the most consistent domains of the middle. It contains verbs that indicate a position of the body rather than a movement into that position, including numerous very specific body position verbs as well as the basic body positions such as 'sit', 'stand' and 'lie down', see the table in (10). An example of a body position verb that is not expressed by a middle is 'crouch down' in Oromo.

(10) Table of middle marking in verbs of Body Position (not necessarily cognate)

body position	Iraqw	Somali	Oromo	Afar
sit	depon	depon	-	-
lie down, sleep	depon	depon	depon	denom
kneel	depon	deriv	deriv	-
lean	depon	depon	depon	-
squat	deriv	deriv	deriv	-
sit with knees together	depon	depon	depon	-

The verbs for 'to hide oneself', and 'to remain, to stay' tend to be middle marked in the Cushitic languages and I take this to be a development of verbs for Body Positions: Oromo *k'ubad'd'a* 'settle somewhere, dwell, wait, shelter, emerge safely', Iraqw *iwiit* 'sit, stay', and for 'to hide oneself' Afar has deponent *qellite* 'disappear, hide oneself', Oromo has deponents *d'ofad'd'a* 'hide, conceal', *d'ok'ad'd'a* 'hide, hide oneself, simulate', Iraqw has a deponent *nahhaat* 'hide oneself', and Somali has middle marked verbs *dhako* 'hide oneself', *dhuumo* 'hide oneself', *gabbo* 'hide oneself, duck, dodge', *jirso* 'shelter oneself (from e.g. rain)'.

The domain of Translational Movement contains motion verbs. For the Cushitic languages the middle marked motion verbs are those that could be described as Body Focussed Displacement, i.e., verbs that emphasize the nature of the motion and the way the body moves in the motion rather than emphasizing the displacement per se. Such middle verbs are the Iraqw deponents *hi'iit* 'take a step, walk, go', *natliit* 'dart off, jump', *hapapa'amiit* 'walk like an old man (close to the ground), grow a little', and the denominal middle *tsaxuut* 'jump fast' from *tsaxway* 'grasshopper sp.'. Oromo has the deponents *tarkaafad'd'a* 'make steps, cross by stepping on stones, transgress', *gangalad'd'a* 'roll on the ground'. In this category we also find various manifestations of the verb 'to slip, slide': Somali *dagiigoxo* 'slide down, slip', *sulxo* 'slip, slide', *sisibo* 'slip, slide', Oromo *sirrink'ad'd'a* 'slip, slide', Iraqw *ninkiritsiit* 'slip', but these verbs have no middle marking in Afar.

The above mentioned domains all relate to the body of the subject, and the following subdomains do so as well, insofar as the mind is part of the body. Emotional middle or (Negative) State of Mind middle is a domain that covers verbs that are comparable to Body State but relate to the state of mind. Like the Body State verbs these verbs predominantly but not exclusively depict a negative state of affairs in the Cushitic languages. This also holds for the examples that Kemmer (1993) gives. The subdomain contains the Iraqw deponent *dawiit* 'be annoyed', and the denominal middles *xuruut* 'suspect, be in doubt' from *xuree* 'doubt, thought', *muunuut* 'sulk' from *munee* 'anger', and *dayuut* 'fear' from *da'ee* 'liver, fear'. Afar has denominal middles *dannite* 'blame, suspect, be bitter towards, be dissatisfied with', *cunxite* 'fear', *nammabagite* 'doubt, be of two minds'. Oromo has deponents *maraad'd'a* 'be(come) mad, confused', *dagad'd'a* 'be careless, unwatchful', *harifad'd'a* 'be frightened', *burungefad'd'a* 'grimace in scorn, despise', *ofad'd'a* 'be hypocrite, dishonest'. Somali has deponents *cabso* 'fear, be afraid', *gedmo* 'be confused or mistaken', and the derived middle *dhibso* 'be annoyed at, feel irritated by'.

Kemmer distinguishes a related subdomain Emotional Speech Action containing verbs like 'complain', 'lament', 'blame'; and a domain of other Speech Actions including verbs like 'confess', 'boast', 'accuse', 'threaten', 'deceive', 'refuse'. In this domain Somali has *cabo* 'complain, reproach', *barooro* 'mourn, keen, wail' from *baroor* 'high-pitched women's lament'. Afar denominals include a set of negative or emotional speech verbs: *xamite* 'slander', *itrite* 'invoke some name when startled', *sahite* 'reprove', *warqite* 'talk incessantly', *malkite* 'complain', Hayward (1976:413), while other verbs for 'complain' are not middle.

Kemmer distinguishes two subdomains for Cognitive Events: Simple and Complex. This distinction is not important here because the Cushitic verbs in the domain of Cognitive Events are primarily 'forget' and 'consider': Iraqw has a deponent middle *alqaytsiit* 'go and look, consider' and denominal *gunqaruut* 'forget' from *gur'a+qara* stomach+poison, Afar has middle deponents *karcite* 'be inattentive, forget', *cisaabite* 'consider, try to remember', *wagite* 'look at, notice, consider, expect, oversee, try out', *ayreynite* 'deceive', Oromo *irraafad'd'a* 'forget'.

The domain of Spontaneous Events, where there is no agent at all (or the agent is essentially irrelevant) is the most important semantic domain of middle verbs that are not directly conceptually linked to the "body". Saeed (1995) has termed this domain more appropriately Uncontrolled Inchoation and it contains many examples in the Cushitic languages and particularly for those lexical units mentioned in Kemmer (1993), i.e., 'sprout', 'grow', but also 'appear' and 'spill'. Iraqw has deponents such as *ti'iit* 'appear, come out', *harasliqiit* 'come upon by chance', *bintloqiit* 'shake and spill over', *ku'uut* (intransitive) 'spill', middle denominal *slaaslakuut* 'come up, grow (of crops)' from *slaaslakwi* 'vertical sticks of the wall'; Somali has denominals *caleemayso* 'sprout and put forth leaves (of a tree)', *ubaxayso* 'flower, produce flowers', *daado* 'spill down, pour down, flow away'; Oromo has deponents *mullad'd'a* 'appear', *bilc'aad'd'a* 'become ripe, mature, be fit for cultivation', *mulk'ad'd'a* 'get out off balance, slope, slant (of a load that is going to fall from a beast of burden), separate from a group'.

The domain of Facilitative middles is also called Passive middle by Kemmer (1993) because of its characteristic of genericity. It is the productive meaning in Fulfulde of middle verbs in the future/habitual tense/aspect, e.g., *deftere nde'e nde janngoto* 'is this book readable?' Abu-Manga and Jungraithmayr (1988: 72 note 4). I noted only one derived middle in Iraqw which renders the verb facilitative, *waraahhaat* 'be passable' from *waraahh* 'to pass'.

Natural Reciprocal or Inherently Reciprocal events are a clear subdomain of middle semantics in Somali: *beecso* 'sell (a possession)', *ganacso* 'do business, trade, *jarayso* 'play Somali checkers', *qooggaaleyso* 'pose a riddle, play a game of riddles'. The domain also contains a set of family reciprocals: *dhaxso* 'marry, get married, take a wife', *qaraabayso* 'treat as one's own relative, consider as a relative' derived from *qaraabo* 'relatives'. Very few examples of Inherently Reciprocal middles were found in the other Cushitic languages. Candidates are Oromo *fakaad'd'a* 'seem, look like, resemble', *mald'ad'd'a* 'discuss a matter, give an opinion', and Afar middle deponent *abite* 'marry' and derived *digibaasite* 'marry (polite)'. How-

ever, typical inherently reciprocal verbs like 'play', 'discuss', 'agree', 'resemble', 'sell', 'borrow', 'hire', 'rent', 'exchange' show no signs of middle marking in Afar.

The domain of Indirect middle is the productive meaning of the middle in the sense of "for one's own benefit" in Afar, Oromo and Somali. Indeed the middle derivation is commonly termed Autobenefactive in Cushitic studies. In Iraqw and other Southern Cushitic languages, however, there is no productive autobenefactive meaning of the middle suffix, and Indirect middle verbs such as 'acquire', 'request', and 'receive' have no middle marking.

Kemmer's domain of Commissive, Intentive verbs such as 'intend', 'promise', 'vow', is not represented in Cushitic middles. Her domain of Logophoric middles has no relevance for Cushitic.

A semantic domain of Intensive Action might have to be added to the typology of middles. Abu-Manga and Jungraithmayr (1988: 70) note that Fulfulde has pairs of (unrelated) verbs where the difference in meaning is solely that the middle verb expresses an intensive action, e.g., *yid'a* (active) 'like, want, love' versus the middle marked verb *beegoo* 'love earnestly'. Moreover, active verbs are transformed into the middle accompanied by perfect tense to express intensity of action. I have noticed something similar in Tunen, where 'think hard' is expressed as the middle form of 'think' (Mous to appear). The Cushitic languages do not show evidence of intensive action meaning for the middle verbs.

We have noted that a high proportion of the verbs in the subdomains of State of Body and of State of Mind have negative connotations. A similar tendency towards negative connotations led Kemmer to single out "Emotional" Speech Actions verbs such as 'complain', 'blame'. In fact, nearly all of the denominal middles in Iraqw have negative connotations, e.g., 'covered by soot, dust', 'be bitter', 'be old, worn out', 'be worn out', 'be spoilt, bad', 'become bad (of food)', 'be greedy' (see Mous and Qorro 2000). Apparantly there is a recurrent tendency for middle marked verbs to acquire negative connotations.

Another remarkable recurrent semantic feature is that of Separation. Several of the middle marked verbs in the various subdomains have separation as part of their meaning or have an additional sense which involves separation, e.g., Oromo *bargafad'd'a* 'spread the legs, split, bifurcate', *hitad'd'a* 'stretch out one's limbs', *mulk'ad'd'a* 'get out off balance, slope, slant (of a load that is going to fall from a beast of burden), separate from a group', *birbifad'd'a* 'wriggle, vibrate, struggle to get free from a strong grip or a trap', Afar *sissiibite* 'take divergent paths', *seecite* 'go away angry, be indignant, go off in a huff'; Iraqw *palaat* 'be split', *binkiliit* 'spread aside', *gweeriit* 'open', *haatliit* 'transplant seedlings'; to which we may add the recurrent verbs for 'to spill' in the subdomain of Spontaneous Actions.

(11) Semantic subdomains of middles in Cushitic (++ = productive, (+) = poorly attested)

subcategory	Iraqw	Somali	Oromo	Afar
body care (groom and wear)	(+)	+	+	+
body motion (nontranslational motion)	+	+	+	-
motion of hands	+	+	+	-
body activity	+	+	+	+
(negative) body state	+	+	+	+
(change in) body posture	+	+	+	(+)
hide oneself	+	+	+	+
remain-stay	+	+	+	-
body focused displacement/transl. motion	+	+	+	+
(negative) state of mind (emotion)	+	+	+	+
cognition	+	+	+	-
commissive, intentive	-	-	-	-
(emotional) speech	-	(+)	-	+
(inchoative) non-control/spontaneous action	+	+	+	+
facilitative	-	-	-	-
inherent reciprocal	-	+	-	-
autobeneficactive	-	++	++	++
logophoric	-	-	-	-
intensive	-	-	-	-
separate	+	-	+	+
negative connotations	+	-	+	+

3. Conclusion

The Cushitic languages ascribe a strikingly high degree of centrality to the body in the semantics of middles. The evidence for this lies in the presence of the subcategories of the body in all the languages in the table in (11) and the fact that a number of derived verbs are used for actions performed by the *body* per se as opposed to the individual. The fact that the marking is derivational allows for a more lexical or concrete and a less grammatical meaning, when compared to inflection and to syntactic constructions. For Creek, where the middle suffix is also derivational, Hardy proposes (1994:66) that "in the absence of a reflexive source for the Creek middle, Creek could have exploited the low elaboration of a marker of 'bodily action' to develop a middle marker."

The Spontaneous Action middles are well represented in Cushitic; this poses a problem for Kemmer's analysis, whereby the essential characterization of middles involves indistinguishability of agent and patient. It is significant that such middles find expression in Cushitic via derivation, i.e., the most lexical and least syntactic way of encoding middles. Spontaneous action, being a possible function of syntactic middles too, is represented across the morphological range of expression of middles. For this reason there are no arguments to exclude it from the core functions of middle marking.

The Facilitative use, which is closely connected to the Spontaneous Action middle (Kemmer 1993: 148), is not or rarely present in the Cushitic languages.

The most noticeable aspect of Cushitic middles is the development of a productive Autobenefactive meaning.

In the Cushitic languages there is less use of Inherent Reflexive and Inherent Reciprocal middle meanings, which is not surprising given the presence of reciprocal/reflexive pronouns. Equally the absence of Logophoric uses is expected since Cushitic languages have no logophoric pronouns. Remarkable is the near absence of certain lexicalization patterns: There are virtually no Commissive, Intentive middles and relatively few Emotional Speech middles. On the other hand lexicalization patterns emerge that have not been observed before, such as the middle marking of verbs for 'to hide', 'to remain, stay', and a middle denominal verb 'to work'. Finally there are indications that additional categories of middles need to be posited for Cushitic, categories not included in Kemmer's typology: Negative Connotations and Separation.

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Segmental effects on (de)gemination in Western Gurage

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0. Introduction

There is a curious interplay between the nature of the final root consonant and a voicing alternation of the preceding consonant in some Western Gurage[1] (South Ethiopian Semitic) dialects. In some verbs, the penultimate root consonant is voiceless in the perfective, but voiced in the imperfective (1a). Yet in other verbs, there is no alternation (1b). Examples are from Chaha, and are given in the 3rd person masculine singular form.

(1)		**Perfective**	**Imperfective**	
	a.	sət̪əβ-ə-m	jɨ-sə**d̪**iβ	'curse'
	b.	gə**d̪**əf-ə-m	jɨ-gə**d̪**if	'break the fast'

Banksira (2000) established that the devoicing of the penultimate root consonant in the perfective of verbs such as (1a) is dependent on the final root consonant. He proposed that final consonants unspecified for laryngeal features condition loss of voicing in the penultimate consonant. In this paper, we argue that this account is untenable for other Western Gurage dialects, Inor, Gyeto and Endegeň. Instead, we provide a historical account that relies on the phonetic duration of the final consonant. Specifically, the penultimate consonant in question was historically a geminate which degeminated, but degemination was blocked if the final root consonant had short phonetic duration, as in (1a). Remaining geminates were devoiced and then simplified, giving rise to the voicing alternation. This is a surprising and important result, as degemination has the hallmarks of a phonological effect, but yet it is constrained by phonetic detail.

1. Chaha Data

We begin in (2) by illustrating the pattern in Chaha, the best-described dialect (Banksira 2000). Penultimate obstruents alternate between voiced and voiceless.

[1] The Western Gurage dialects are spoken approximately 180 kilometers southwest of Addis Ababa. Western Gurage includes the dialects Chaha, Inor, Ezha, Gyeto and Endegeň; Masqan and Muher are also sometimes classified within the Western Gurage group (Leslau 1969).

(2)	Root	Perfective	Imperfective	Jussive	
a.	/gza/	gəsa-m	ji-gəza	jə-gza	'own, buy'
b.	/dβr/[2]	dəpər-ə-m	ji-dəβir	jə-dβir	'add'
c.	/sdβ/	sətəβ-ə-m	ji-sədiβ	jə-sdiβ	'curse'
d.	/zgr/	zəkər-ə-m	ji-zəgir	jə-zgir	'jump'
e.	/grdm/	girətəm-ə-m	ji-grətim	jə-gərdim	'plough'
f.	/drgr/	dirəkər-ə-m	ji-drəkir	jə-dəŋgir	'throw carelessly'

In 'Type A' triliteral verbs[3], the perfective penult is voiceless whereas the imperfective and jussive penult are voiced obstruents (2a-d). In quadriliterals, the perfective and imperfective penult is voiceless, whereas the jussive penult is voiced (2e-f).

Unlike the verbs in (2), some verbs have a consistent voiced obstruent throughout the paradigm (3a-b). In addition, voiceless obstruents and sonorants do not alternate (3c-d).

(3)	Root	Perfective	Imperfective	Jussive	
a.	/gdf/	gədəf-ə-m	ji-gədif	jə-gdif	'break thefast'
b.	/rzk'/	nəzək'-ə-m	ji-rəzik'	jə-nzik'	'be fortunate'
c.	/ktf/	kətəf-ə-m	ji-kətf	jə-ktif	'chop (meat)'
d.	/k'ms/	k'əməs-ə-m	ji-k'əms	jə-k'ims	'taste'

The non-alternating verbs are not a set of lexical exceptions, as previously assumed (Leslau 1979, McCarthy 1986). The pattern first noticed by Banksira (2000) is that if the final root segment is a sonorant or [t], the penult in the perfective (and the imperfective if the verb is quadriliteral) is devoiced if obstruent. If the final root segment is a fricative, ejective or voiced stop, there is no alternation. Penultimate voiceless obstruents are unaffected and penultimate sonorants remain voiced. The main pattern is summarized below. The jussive penult provides the clue as to whether the root has a voiced obstruent or not:

(4) **Jussive Penult**	**Final root segment**	**Perfective Penult**
voiced obstruent	[r β m w j t a (x)[4]]	voiceless obstruent as in (2)
voiced obstruent	[t' k' f s z d g]	voiced obstruent as in (3a-b)

[2] [β] is actually a sonorant in Chaha, a fact convincingly argued by Banksira (2000), but alternates with obstruent [p].

[3] Type A is a lexical conjugation class and the least phonologically opaque of the verb types in Chaha. See Banksira (2000) for details.

[4] There is only one verb *məsəxəm* 'chew, ruminate' that seems to condition devoicing. It has no alternations in the paradigm, but related dialects show a voiced penult [z]: ex. Ezha *məzzəxəm*.

Before trying to make sense of the peculiar segment classes shown in (4) for the final root segment, we discuss the historical motivation for the alternations: templatic gemination of the positions where devoicing occurs.

2. The Historical Motivation

It is uncontroversial that penultimate devoicing in Chaha affects consonants that were historically geminate (Leslau 1948). Western Gurage dialects divide into three groups with respect to gemination. Ezha, Masqan and Muher[5] show gemination. Endegeň also has gemination, but its geminate obstruents are devoiced, and Chaha, Gyeto and Inor have no gemination, but like Endegeň have a devoiced obstruent in the penultimate position. The cognate root 'curse' is illustrated below across four of the dialects. The Endegeň data are taken from Leslau (1976, 1978, 1979) and the Inor data from Chamora (1997). Ezha and Chaha data are from our own field notes or Leslau (1967) and Banksira (2000).

(5)	**Root**	**Language**	**Perfective**	**Imperfective**	**Jussive**
	/sdβ/	Ezha	sə**dd**əβ-ə-m	ji-sə**d̲**iβ	jə-s**d̲**iβ
	'curse'	Endegeň	sə**tt**əβ-ə	i-sə**d̲**iβ	ə-s**d̲**iβ
		Inor	sə**t̲**əβ-ə	ji-sə**d̲**iβ	ə-s**d̲**iβ
		Chaha	sə**t̲**əβ-ə-m	ji-sə**d̲**iβ	jə-s**d̲**iβ

As discussed in Ohala & Riordan (1979), maintaining vocal fold vibration during a prolonged constriction is articulatorily difficult, so geminate obstruents have a tendency to devoice. Based on this tendency, we surmise that Ezha represents the historical form, and that in Endegeň, Chaha, Gyeto and Inor, devoicing of the penult geminate occurred. In the latter three dialects this geminate was ultimately simplifed. This is outlined in (6), and forms the first part of our analysis. The three stages correspond to attested modern dialects.

(6) **Part 1 of analysis**:

Historical form	*səddəβ	(= current Ezha)
Geminate devoicing	səttəβ	(= current Endegeň)
Degemination	sətəβ	(= current Chaha, Gyeto, Inor)

Such a scenario is uncontroversially assumed by most researchers working on Gurage. They differ in whether geminates are assumed synchronically in the underlying representation and then simplified on the surface (e.g. Lowenstamm

[5] The classification of Masqan and Muher as Western Gurage is controversial. See Leslau (1969) and Hetzron (1972, 1977). For this reason, we will concentrate on Ezha as the 'geminating' dialect for the remainder of the paper.

1996, Banksira 2000), or whether they have only a diachronic status as we will assume here.

3. Segmental effects of final root consonant–synchronic licensing of [voice]

We now return to the question of why the peculiar sets of final consonants in (4) should affect devoicing of the penult. Banksira (2000) proposes that the final consonant has a *direct* connection to devoicing. In his account, the laryngeal specification of the final segment affects the licensing of the feature [voice] on the penult geminate. Let us consider again the set of final consonants and their division into classes which trigger or do not trigger penultimate devoicing.

(7) **Chaha final consonant classes**

Non-Trigger Class:	[t' k' f s z d g]
Trigger Class:	[ɾ β m w j a t] ([a] < *ʔ h ħ ʕ)[6]

Banksira (2000) adopts privative phonological features with underspecification. Given this model, segments in the Non-Trigger Class have laryngeal specification. Ejectives are [constricted glottis], voiceless fricatives are specified with [spread glottis] (a view supported by Vaux (1998) for other languages), and voiced obstruents are specified [voice]. In contrast, the segments in the Trigger Class are laryngeally unspecified segments. Sonorants lack a [voice] specific-ation. Banksira argues that [k] is underlyingly /x/ and draws no firm conclusions about its status in the group. This leaves /t/ as the only other obstruent lacking a voicing specification.

The relationship between the laryngeal specification of the final root segment and the penultimate geminate is expressed with a constraint: 'No Doubly Linked Final [voice]' (Banksira 2000:77), where 'final' corresponds to the rightmost specification in the stem. If the consonant to the right of the geminate has Laryngeal specification, no devoicing occurs, as shown in (8) for two verbs.

(8)

Non-Trigger Class		**Trigger Class**	
n ə zz ə k'	--> nəzzək'-	s ə bb ə ɾ	--> səppər-
\/ |		\/	
Lar Lar		Lar	
| |		|	
[voice] [cg]		[voice]	

Banksira assumes that there are underlying geminates in modern-day Chaha, but that they are simplified on the surface, as shown in the sample derivation in (9).

[6] The segment [a] occurs in verbs whose final root consonant was a guttural, one of the set /ʔ h ħ ʕ/. In Inor, Endegen, and Gyeto, the /ʔ/ is still found.

(9)	Underlying Form	/səbbər-ə-m/	/nəzzək'-ə-m/
	Geminate devoicing	səppər-ə-m	*does not violate constraint*
	Degemination	səpər-ə-m	nəzək'-ə-m
	Surface Form	[səpər-ə-m]	[nəzək'-ə-m]

While the synchronic licensing approach handles the Chaha data, the analysis fails to extend to the closely related dialects Inor, Gyeto and Endegeň, in which the voiced stops [d g] are members of the Trigger Class for penult devoicing. In order to apply the laryngeal licensing account to these dialects, [d g] would need to be unspecified for [voice], but [z] would not. Yet [d g] contrast with both ejectives and voiceless stops, so to maintain the laryngeal licensing account, one would have to resort to language specific specification, despite similar inventories.

It turns out that Chaha is the most opaque dialect to examine in trying to make sense of the devoicing problem. The effect of the final consonant becomes clear when we examine the other dialects.

4. Segmental effect of final root consonant - impact on historical gemination

In Inor, Endegeň and Gyeto, the two classes of final consonants are divided as follows:

(10) **Inor, Endegeň, Gyeto**

Non-Trigger Class (prevents devoicing of penult):	[t' k' f s z]
Trigger Class (allows devoicing of penult):	[ɾ β m w j a t **ʔ d g**]

These dialects differ from Chaha in the inclusion of the voiced stops [d g] in the Trigger Class, along with [ʔ], which does not occur in Chaha. The triggering behavior of three final consonants ([f ɾ d]) is shown in (11).

(11)		'sting'	'jump'	'touch'
	Ezha	nə**dd**əf-ə-m	zə**gg**ər-ə-m	nə**gg**əd-ə-m
	Endegeň	nə**d**əf-ə	zə**kk**ər-ə	nə**kk**əd-ə
	Inor	nə**d**əf-ə	zə**k**ər-ə	nə**k**əd-ə
	Chaha	nə**d**əf-ə-m	zə**k**ər-ə-m	nə**g**əd-ə-m

The final consonant [f] in the verb 'sting', a member of the Non-Trigger Class, does not cause devoicing of the penult in any of the dialects. The final consonant [ɾ] in

the verb 'jump' is a member of the Trigger Class and triggers devoicing in Endegeň, Inor and Chaha. The final [d] in the verb 'touch' causes devoicing in Endegeň and Inor (where it is a Trigger), but not in Chaha (where it is a Non-Trigger).

A further point to note is that in Endegeň, the devoiced penult is geminate, whereas the voiced penult is singleton. In fact, there is a strong predictive relationship between gemination and the two Classes identified in (10), irrespective of devoicing. If the final consonant is a member of the Non-Trigger class, the penult is singleton, but if the final consonant is a member of the Trigger class, the penult is geminate. This is shown in (12) with penults that do not devoice. The final consonants [k' f] are members of the Non-Trigger Class and co-occur with singleton penults (12a), whereas the final consonants [ɾ ʔ] are members of the Trigger Class and co-occur with geminates (12b):

(12) a. **Non-Trigger Class - singleton penult**

nət'ək'ə	'snatch away'
k'ənəf-ə	'hit with a stick'

b. **Trigger Class - geminate penult**

gəffəɾ-ə	'release'
sənnəʔ-ə	'steal'

Problematic for the laryngeal licensing analysis is the fact that two [constricted glottis] segments, [k'] and [ʔ] occur in different classes. More importantly, given that laryngeal licensing pertains only to devoicing, the relationship between the final consonants and the presence of penultimate gemination would have to be treated separately. We contend, however, that they are crucially connected.

While there is no set of phonological features that cleanly distinguish the Trigger and Non-Trigger classes, the two groups do form natural phonetic classes in terms of their duration. As laboratory measurements bear out, the segments in the Non-Trigger Class are all longer than those in the Trigger Class. We propose that, rather than affecting *devoicing* directly as argued by Banksira (2000), the final consonant influenced the preservation or loss of penultimate gemination. Indeed, Leslau (1976) observes that gemination in Endegeň as shown in (12) is 'phonetically conditioned' and remarks on the short duration of [ɾ] in this respect. The penult degeminated in verbs with relatively longer final segments, but if the final segment was short, gemination (basically increased duration of a segment) was maintained to avoid compromising some minimal duration constraint on the stem.[7] Voiced obstruent geminates were subsequently devoiced, and eventually simplified in Inor, Gyeto and Chaha.

[7] There are two ways of interpreting degemination. One possibility it that a constraint against two long segments (a geminate and a long consonant) triggered degemination. Constraints on two geminates in a word have been reported for Latin and Japanese (Itô &Mester 1998, Suzuki 1998),

Evidence from Ezha supports the contention that duration of the final consonant can condition gemination of the penult. In a form that is unique in Semitic, Ezha jussives typically have a geminated penult if the final consonant is [ɾ] (Leslau 1967), as shown in (13) with Chaha jussive forms for reference.

(13)		**Ezha**	**Chaha**	
	a.	jə-fɨ**kk**'əɾ	jə-f**k**'əɾ	'be fat'
	b.	jə-mɨ**gg**əɾ	jə-m**g**əɾ	'suppurate'
cf.	c.	jə-n**f**əs	jə-n**f**əs	'blow (wind)'

We note that [ɾ] is the shortest consonant in the language, and that the presence of final [ɾ] seems to evoke gemination of the penultimate consonant, an alternation without historical precedent. This shows that the final consonant *can* condition the presence of gemination, even without regard to whether the resulting geminate is ever devoiced. This is precisely what we are arguing for in the other dialects.

Let us now consider the exact duration of Trigger and Non-Trigger segments obtained through phonetic measurement. We recorded a 30-year-old male speaker of Chaha using a Sony professional tape recorder. A wordlist of third-person masculine singular perfective verb forms was constructed. This form has the shape CəCəC- with final suffixes -ə-m, (e.g., [kəfətəm]). The target final consonant was in intervocalic position as the onset of an unstressed syllable, and we obtained three tokens of each consonant. Sonorants and fricatives were measured from the loss of vowel formants until their return after the segments. Two measurements were taken for stops corresponding to the closure period and the burst. These were added together to obtain the overall measurement. This is crucial, since it distinguishes ejectives from regular voiceless stops. Although the latter have some degree of aspiration, the ejective burst is significantly longer.

The average duration results are presented in table (14)[8]:

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but these cases involve phonological dissimilations and depend on similar structure (mora count or skeletal positions), whereas the Western Gurage case involves interplay for phonetic duration. The other possibility is that degemination has an independent motivation, but was blocked when the final consonant was short to maintain a minimal duration. This seems the most plausible scenario for Western Gurage, given the Ezha jussive facts discussed in this section. Of course, we recognize that establishing that duration threshold is difficult due to the fact that consonants have different intrinsic durations when geminate.

[8] Several consonants could not be measured. The segment [ʔ] does not occur in Chaha. We did not have access to speakers of other Gurage dialects, so we were not able to obtain measurements of this segment. We assume, however, that its duration would be short. The glides [j w] do not occur in final position of the verb stem. Finally, [x] patterns like the other fricatives, making it relatively long. However, it was historically *k, and as such would have patterned with the other voiceless stop [t] in conditioning degemination and therefore devoicing. As mentioned earlier, however, there is only one verb which might indicate its Trigger class membership.

(14)

Non-Trigger Consonant	Duration	Trigger Consonant	Duration
ejectives [t' k']	118 ms	voiceless stops [t k]	90 ms
fricatives [z f s]	116	voiced stops [d g]	73
		sonorants [β m]	70
		liquid [ɾ]	30

The Non-Trigger Class are longer than 115 ms, while the Trigger Class are shorter than 90 ms, a difference of 25 ms, which is significant.

Part 2 of our analysis incorporates the effects of the final consonant on degemination. First, degemination applied, but was *blocked* in verbs with short final segments. Devoicing applied to the remaining voiced obstruent geminates, i.e. those followed by a short segment. At a later stage, degemination was applied across the board, leveling the paradigm. This is illustrated in (15).

(15) **Part 2 of analysis**

Historical form	*səbbəɾ	*nəddəf	
Degemination 1	*blocked*	nədəf	
Geminate Devoicing	səppəɾ	—	(=Endegeň)
Degemination 2	səpəɾ	nədəf	(=Chaha, Gyeto, Inor)

We emphasize that the duration of the final consonant cannot be equated with mora count. Such an analysis fails for several reasons. First, due to inflectional verb suffixes, the final consonant appears as an onset in roughly half the forms, as shown here, and a coda in the other half of the paradigm, ex. *nədəf-nə-m* 'we stung'; all forms act identically with regard to the alternations we are describing. Second, the final consonant of Semitic verb stems is usually analyzed as lacking a mora (McCarthy and Prince 1990). Third, Zec (1995) shows that sonorants are more likely to bear moras than obstruents, but the final consonants which act to maintain gemination include the sonorants, exactly the opposite effect of what would be expected if moraic count were the relevant consideration.

5. What about [d g] in Chaha?

Even though they are relatively short, the segments [d g] appear to belong to the Non-Trigger Class in Chaha. In the other dialects, they are clearly in the Trigger Class (compare the cognates for 'touch' from (11) *nəkkəd-ə* in Endegeň, *nəkəd-ə* in Inor, but *nəgəd-ə-m* in Chaha.) We hypothesize that the difference between the dialects is not a difference of the class into which [d g] fall, but rather whether or not the geminates which remained before [d g] could be devoiced.

Western Gurage dialects have a tendency towards *laryngeal agreement*, a requirement that (primarily adjacent) coronal and velar stops in a root match for laryngeal features (Leslau 1979, Banksira 2000, Rose & Walker 2000). As shown in (16), cognate words in the related language Amharic with a mix of ejectives and voiced stops agree in laryngeal specification in Chaha. This pattern of laryngeal agreement was leftward–the laryngeal specification ([constricted glottis] or [voice]) of the rightmost consonant caused the consonant to the left to match.

(16)

Amharic	**Chaha**	
k'ɨda	gɨda	'draw liquid!'
mɨt'ad	mɨdad	'griddle'
dɨk'ək'	t'ɨk'ək'	'be crushed, be ground!'

There is no evidence among cognate examples that voiceless segments trigger agreement. In fact, penults which are in fact devoiced do not in turn trigger devoicing of a voiced consonant to their left, e.g., the root /gdɾ/ is *jigədir* in the imperfective and *gətərəm* in the perfective. This result is consistent with the view in Lombardi (1995) and others that laryngeal features are privative, so that voiceless consonants cannot trigger agreement in the consonant to their left (since they have no laryngeal features to agree with), but they may receive a [voice] specification through assimilation or distance agreement.

Our proposal is that verbs with final [d g] maintained gemination in Chaha, just as in all the other dialects. However, because of laryngeal agreement, the geminates could not be devoiced in Chaha. The requirement for the penult to agree in laryngeal features with the final consonant outweighed the pressure for the geminate to devoice in Chaha, whereas in the other dialects, the laryngeal agreement was ignored in favor of devoicing. In an Optimality Theoretic grammar, this could be modeled as alternate ranking between two constraints. When all the geminates were simplified to singletons, only penults before [d g] maintained voicing in Chaha in spite of previous gemination. This gives the appearance that they are members of the class that allowed previous degemination in Chaha. This historical derivation is illustrated in (17).

(17) **Part 3 of analysis**

	Endegeň	**Inor, Gyeto**	**Chaha**
Historical form	*nəggədə	*nəggədə	*nəggədəm
Degemination 1	*blocked in all dialects because of short final C*		
Geminate Devoicing	nəkkədə	nəkkədə	*blocked by laryngeal agreement*
Degemination 2	—	nəkədə	nəgədəm
	[nəkkədə]	[nəkədə]	[nəgədəm]

With this final piece of the puzzle, our analysis is complete. In the next section we provide answers to some possible criticisms of this analysis.

6. Additional considerations

6.1 Why two rounds of degemination?

Perhaps the first criticism that could be leveled at our analysis is that it relies on two distinct rounds of degemination, one of which is sensitive to the duration of the final root consonant, and another which applies across the board. However, the first context-sensitive round of degemination is clearly required for the dialect Endegeň, so that verbs with short final consonants maintain surface gemination and verbs with long final consonants do not. Given that Endegeň requires an episode of degemination which is sensitive to the duration of final consonants, and that this duration-sensitive degemination explains the voicing alternations in the other dialects, the principle of economy argues for the inclusion of this episode of degemination in all dialects, and a second round of across-the-board degemination in those dialects which lack surface geminates, as a means of paradigm leveling.

6.2 Why assume that the Trigger Class verbs ever had a geminate?

A second possible criticism involves our conclusion that all penults were historically geminate, even those which show no surface alternation which would suggest historical gemination (the forms which under our analysis underwent the first round of degemination). This conclusion is based on two arguments. The first, which we have already mentioned, is that all penults are geminate in related dialects which maintain surface gemination without alternations. Admittedly, this argument relies on data from related dialects and nothing internal to the dialects we are treating. The second argument is more compelling. There is a systematic alternation between the continuants [β x ɾ] and the stops [b x n] with the stops appearing in the penult of the perfective, and the continuants elsewhere.[9] This alternation is illustrated in (18) for Chaha.

(18)	**Root**	**Perfective**	**Imperfective**	**Jussive**	
a.	/t'βs/	t'əb̲əs-ə-m	jɨ-t'əβ̲s	jə-t'ɨβ̲s	'roast'
b.	/mkɾ/	mək̲ər-ə-m	jɨ-məx̲ɨɾ	jə-mx̲ɨɾ	'advise'
c.	/k'nf/	k'ən̲əf-ə-m	jɨ-k'ər̲f	jə-k'ɨr̲f	'strike sthg down'

We view this alternation as another example of the well-established resistance by geminates to lenition, as discussed in Kirchner (2000). Given that these forms were historically geminate, the stops can be explained as the historical residue of geminate-blocked lenition. Without historical gemination, there is no explanation

[9] Like many generalizations in these languages, this is an oversimplification. The stops appear in other places as well, as a result of a number of interacting constraints. See Banksira (2000) for a complete account.

for the stops in this location. Note that this stop alternation affects verbs even if they do not (as in 18a) also undergo devoicing.

7. Conclusion

In conclusion, we have shown that the loss or retention of templatic gemination of the penultimate root consonant in some Western Gurage dialects (Chaha, Gyeto, Inor, Endegeň) was originally conditioned by the final root segment. Short segments (sonorants and stops) disfavored degemination, while longer segments (fricatives and ejectives) allowed it. Subsequently, geminates were devoiced and geminates were later simplified to singletons in Chaha, Gyeto, and Inor. In contrast to the other dialects, Chaha did not devoice geminates in verbs with final root voiced stops due to the overriding effect of laryngeal agreement, an independently motivated construct.

On both theoretical and empirical grounds, our diachronic account should be preferred to the laryngeal licensing account which Banksira (2000) proposes for the synchronic grammar of Chaha. First, all aspects of our account are independently motivated, in contrast to Banksira's constraint 'No Doubly Linked Final [voice]', which is tailor-made for the alternation in question. Second, unlike Banksira's our diachronic approach can account for all four dialects.

Finally, there are a number of questions which we have not attempted to resolve and which remain for future inquiry. First, as we have been careful to couch our account in diachronic terms, there is a very real question about what the synchronic grammar of these languages must look like, and how much of the history should be included in the synchronic grammar. Perhaps as importantly, there remains a fundamental theoretical question about the relationship of this phonetic duration effect to the morphophonology. It calls into question the intrinsic connection between moras and phonetic duration that has been advocated for other languages (e.g. Hubbard 1994, Broselow et al 1997). Finally, we have yet to explore whether the duration interplay we have identified is related to the templatic nature of the languages involved.

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The Vocalism of Strong Verbs in Afar

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1. Introduction

Afar is a Cushitic language spoken in the Horn of Africa. In this study, I aim to show that Afar strong verbs have specific structural characteristics that account for their particular conjugation. The examination of their vocalism reveals a correlation between the structure of strong verbs and their lexical vowel. The behaviour of long vowels in closed syllables leads me to propose a specific status for such vowels. This hypothesis allows us to account for their behaviour and unify the strong verbal class into a unique template. All the surface patterns and their vocalism can be derived from this template according to the nature of the root. The relationship between structure and vocalism is a crucial point in my analysis.

This work follows the theory of Generative Phonology with the *CVCV* option (cf. Kaye et al. 1990, Lowenstamm 1996) that reduces the syllabic constituency to a strict succession of onsets and nuclei, respectively linked to consonantal segments and vocal segments. I use the Theory of Elements (cf. Kaye et al. 1985) to represent vowels: a vowel corresponds to an expression in Elements that are the final constituents distributed on autosegmental lines.

2. Characterization of Strong Verbs

Two different types of conjugation exist in Afar (following Hayward 1978, Bliese 1981, Parker and Hayward 1985). On the one hand, the predominant verbal class consists of weak verbs. It exclusively uses suffixes as shown in the following examples (throughout the text, examples are spelled as in Parker and Hayward 1985, that is the A.P.I., except: *y*<->palatal glide, *x*<->voiced post-alveolar retroflex occlusive, *c*<->voiceless pharyngeal fricative and *q*<->voiced pharyngeal fricative):

(1) Perfect 1s: fak-e 'I opened'
Perfect 2s: fak-t-e 'you opened'
Imperfect 1s: fak-a 'I open'
Imperfect 2s: fak-t-a 'you open'

On the other hand, the conjugation of strong verbs is characterized by prefix personal markers and by a particular determination of aspect based on a vocalic alternation on the first vowel of the stem:

(2) Perfect 1s: uktub-e 'I wrote'
Perfect 2s: t-uktub-e 'you wrote'
Imperfect 1s: aktub-e 'I write'
Imperfect 2s: t-aktub-e 'you write'

The derivational morphology of strong verbs also exhibits a strategy of prefixation whereas suffixation is always used for weak verbs. In (3), the position of the causative morpheme exemplifies this difference:

(3) Weak verb: fak-e 'I opened' > fak-is-e 'I caused to open'
Strong verb: uktub-e 'I wrote' > us-kutub-e 'I caused to write'

Beyond these specificities in conjugation and derivation, the surface patterns of strong verbs have the following distinctive characteristics:

- The root always starts by a vocal.
- The lexical vowel, which spreads in the stem, is never /a/: it must be one of the other vowels of the Afar vocalic system, that is /i/, /e/, /o/ or /u/.

The examination of the derivation of strong verbs provides another indication concerning the restriction of the lexical vowel quality. As shown in (4), the timbre of the lexical vowel of a verb with an initial long middle vowel changes in the causative forms:

(4) eeqete 'walk' > iysiqite 'cause to walk'
eedeqe 'be pregnant' > iysiqide 'make pregnant'
ooqore 'cover' > uysuqure 'cause to cover'
ookome 'come' > uysukume 'cause to come'

In these examples, the middle vowels /e/ and /o/ alternate with their corresponding high vowels, respectively /i/ and /u/. But this vocal mutation is not the only difference: the structure of the verbal stem is also modified. It can be seen that there is an absence of long vowels in the derivative forms.

Based on this fact, I will argue that there is a relationship between the quality of a lexical vowel and the structure of a strong verb.

3. The Vocalic Distribution

3.1. Surface Patterns of Strong Verbs

From an exhaustive list of strong verbs compiled by Parker & Hayward (1985), 19 surface patterns can be identified. Table (5) below shows the distribution of the lexical vowel as a function of the surface pattern of strong verbs. For each pattern, this table gives the number of verbs exhibiting a particular surface structure and

vocalism (*C* positions represent the consonants and *v* position are identified by the lexical vowel; the final *e* is a suffix; a long final *ee* corresponds to an underlying *eye*).

(5) Vocalic distribution

#	Patterns	I	U	E	O	Examples
1	vCvCvCe	0	4	0	0	uqurufe 'rest'
2	vCvvCvCe	0	0	4	0	ebeereke 'surrender'
3	vCee	0	0	1	0	ecee 'give'
4	vCCvCvCCe	0	0	2	0	essecekke 'criticize'
5	vCCvCCe	0	0	8	0	endebbe 'return'
6	vvCCe	0	0	0	2	oobbe 'hear'
7	vCvCCvCe	30	6	0	0	iqiggibe 'be amazed', ucussule 'size'
8	vCCvCvCe	4	1	0	0	imsicise 'be rubbed out', umbudude 'cover'
9	vCCvCCvCe	17	6	0	0	itqissife 'be sad', umcugguye 'help'
10	vCCvCvvCvCe	0	0	5	4	emreqeeqede 'stretch', onkonoonoce 'burn'
11	vvCvCe	0	0	7	7	eeqete 'walk on', ootoke 'hit'
12	vvCe	0	0	1	2	eexe 'suck the breast', oofe 'reach'
13	vCvCCee	2	3	2	0	igibdee 'be hard', uqusbee 'become new', ekexxee 'become old'
14	vCCvCe	64	35	5	0	icfide 'memorize', uktube 'write', embexe 'be finished'
15	vCCe	0	1	13	1	uble 'see', erde 'run', okme 'eat'
16	vCCvCvvCe	0	1	1	3	unsumuume 'be diluted', enfedeege 'relax', omcoroore 'become thin'
17	vCvvCe	5	8	5	5	idiike 'faint', uduure 'return', egeere 'bail out', odoore 'turn'
18	vCCvvCe	1	3	2	2	illiile 'be bold', usguude 'slaughter', exxeere 'become long', obboode 'give up hope'
19	vCCvvCvCe	1	1	8	1	ingiicile 'fight', uybuuruce 'fan', endeecere 'appear', ongoorowe 'meet'

The examination of this distribution provides the following information:

(i) The four vocal qualities (/i/, /e/, /o/, /u/) are only present in three structures (17, 18, 19). Although this might have been expected, it concerns only 42 verbs out of 284.

(ii) Within the 15 other patterns, representing 242 verbs, one or more vowels are excluded. This absence could occur by chance in certain patterns representing only a few verbs, but it cannot explain the absolute absence of some timbres in highly represented patterns. So, the vocalism of strong verbs is not free. Furthermore, neither semantics nor syntax conditions the choice of the vocalism: these restrictions seem to coincide with prosodic verb structures.

(iii) Another characteristic of this vocalic distribution lies in patterns 7, 8, 9, 10, 11 and 12, which only harbour two timbres. There is a partition between verbs with a high lexical vowel (/i/ or /u/) and verbs with a middle lexical vowel (/e/ or /o/), depending on their prosodic structure. The above six patterns exhibit a complementary distribution between verbs with a high vowel and verbs with a middle vowel.

(iv) At first sight, this complementary distribution doesn't seem to account for the important pattern 14 (104 verbs) which harbours three timbres (/i/, /e/, /u/). However, the number of verbs with a vocalism in /e/ is very low (only 5 verbs). A sharp analysis of these verbs shows that their structure differs from the structure of verbs with a high lexical vowel. Indeed, these verbs have only two root consonants whereas the others have three. In fact, their initial consonant is a prefix that can alternate with other consonantal derivational prefixes, as in (6):

(6) embexe 'be finished' vs esbexe 'cause to finish'

Consequently, pattern 14 is completely in accord with the complementary distribution and harbours only high lexical vowels.

(v) We can include patterns 1 and 13 in this complementary distribution, within the class of patterns with high lexical vowels. The exceptions with an /e/ can be explained by the presence of derivational consonants that modify the underlying verb structures, in the same way as above.

(vi) Patterns of verbs with middle lexical vowels highlight another distribution: in patterns 2, 3, 4, 5 and 15, the vowel /o/ is neutralized. The remaining patterns (6, 10, 11, 12) allow both /e/ and /o/.

Thus, from studying the distribution of the lexical vowel quality as function of the surface pattern of strong verbs, we can identify several distributional classes summarized below (7) - in order to simplify the analysis, this study has been limited to verbs with at most three radical consonants, though my hypothesis can extend to the remaining patterns (2, 10, 16, 19) for which the distinction lies at the same level as in Classical Arabic, that is between roots with three and four consonants (cf. McCarthy 1979 and Guerssel et al. 1993).

(7) Class I = patterns 1, 7, 8, 9, 13, 14 <-> high lexical vowel (/i/ or /u/)
Class II = patterns 6, 11, 12 <-> middle lexical vowel (/e/ or /o/)
Class III = patterns 3, 4, 5, 15 <-> front middle lexical vowel (/e/)
Class IV = patterns 17, 18 <-> non low lexical vowel (/i/, /u/, /e/, /o/)

Two main questions arise from this distribution. First, what are the characteristics shared by the patterns of each class wich can trigger the same kind of vocalic

restrictions? Second, how can differences in prosodic structure account for distinct vocalism?

3.2. Characterization of the Distributional Classes

First, the examination of the vowels reveals that long vowels only appear within distributional classes that harbour middle lexical vowels (class II and IV).

Second, one has to take into account the nature of the consonants: some belong to the verbal root while the derivational morphology provides others. The origin of the latter can be found in alternations with other affixes, as shown in (8). It could be the first or the last consonant or a gemination of the second root consonant:

(8) Prefix consonant:	endebbe	'return'	vs	eydebbe	'cause to return'
Geminate:	ifrige	'unload'	vs	ifirrige	'empty'
Suffix consonant:	uqusbuye	'be refreshed'	vs	uqusbuse	'refresh'

Once the derivational consonants are identified, we can look at the root consonants. Then we notice that all the verbs with three root consonants belong to class I. On the other hand, verbs from classes II, III and IV possess only two root consonants. The derivational morphology allows us to derive every pattern from the pattern that contains only the root consonants (patterns 14, 11, 15 and 17 for classes I, II, III and IV respectively).

Moreover, the presence of a long vowel in patterns of classes II and IV can be observed. We can argue that it corresponds to a compensatory lengthening when a root consonant is missing. Thus, the underlying template of these verbs is of the same size as verbs of class I. This template contains three consonantal positions to receive the root consonants. In this case, the position of the long vowel corresponds to the position of the missing root consonant:

- The initial long vowel in patterns of class II corresponds to the absence of the first root consonant.
- The internal long vowel in patterns of class IV corresponds to the absence of the second root consonant.

This analysis suggests that the relationship between the presence of long middle vowels and the absence of radical consonants is crucial in order to understand vocalic distribution. The presence of a long vowel is related to the absence of a root consonant, whereas the presence of three root consonants restricts the vocalism to the high vowels /i/ and /u/.

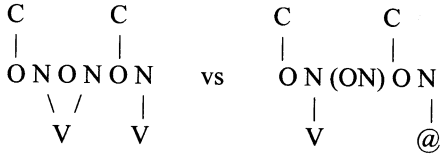
4. Nature of Long Vowels

Independently, the vocalic length in Afar raises a problem. There are two types of long vowels according to their behaviour within closed syllables, that is, depending on whether or not they can be abridged, as shown in the examples in (9):

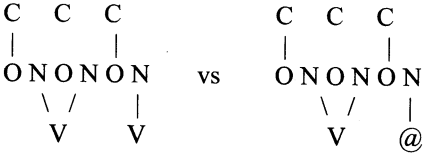
(9) daqaara 'the waterfall-SUBJECT' vs daqar 'the waterfall-OBJECT'
musaana 'the shawl-SUBJECT' vs musaan 'the shawl-OBJECT'

If the behaviour of long vowels differs in the same context, we have to assume that what we see as long vowels on the surface correspond in fact to two different phonological configurations: these imply different properties. Thus, I suggest that their phonological representations have to be different.

In the context of Generative Phonology with the *CVCV* option, a long vowel is represented by a vocalic segment that spreads on two nuclei; an underlying onset remains empty in between. This vowel can be long if Proper Government licenses its second nucleus. Thus, it has to be in an open syllable. Within a closed syllable, the following nucleus is empty and cannot properly govern the preceding one: the long vowel must be abridged and the second *CV* position drops without license. The example in (10) shows the representation of an abridgeable long vowel (a nucleus linked to @ is an empty nucleus that cannot properly govern the preceding nucleus, *C* a consonant, *V* a vowel, *O* an onset and *N* a nucleus):

(10)


This representation accounts for abridgment within a closed syllable. In order to account for long vowels that are never abridged, I propose that their representation also corresponds to the spreading of a vocalic Element on two nuclei but with an added consonant Element. This consonant Element remains in the underlying structure and cannot be linked to the prosodic structure - and so cannot be heard. Though a following empty nucleus cannot govern properly the second nucleus of the long vowel within a closed syllable; the latter is licensed by the underlying consonant. As a result, the vowel is able to spread on the two nuclei and remains long within closed syllables. The representation of a long unabridgeable vowel is given below (11):

(11)


My hypothesis ties the impossibility of abridging to the presence of an underlying consonant. The immediate effect of this consonant is to block shortening. However, we assume that its presence might produce secondary surface effects. In

particular, following the Theory of Elements, this can alter a vocalic timbre by supplying a vocalic Element.

Now the long vowels in strong verbs are never found to be abridged in closed syllables, as exemplified below (12). Thus, following our hypothesis, strong verbs with a long vowel must contain an underlying consonant.

(12) oobbe 'I heard'
egeer 'bail out!'
ifiil 'pick up!'
uduur 'come back'

In fact, it is possible to observe the missing consonant: among strong verbs, Afro-Asiatic loans exhibit the missing radical consonant. These could be consonants that don't exist in Afar (such as certain gutturals) or glides that drop in a post-consonantal context. Some examples are given in (13):

(13)	eemene	'believe'	<->	?mn	(Semitic root)
	osoome	'fast'	<->	Swm	(Semitic root)
	iqiide	'celebrate'	<->	qyd	(Semitic root)
	uduure	'come back'	<->	dwr	(Semitic root)
	oobbe	'hear'	<->	Hub	(Oromo)
	oome	'become bad'	<->	Cum	(Somali)

In the context of the Theory of Elements, the glides /y/ and /w/ are respectively the Elements I and U linked to an onset and a guttural is able to transmit the Element A (cf. Ségéral 1995). These vocalic Elements, originally within the missing consonant, can modify the quality of the lexical vowel. The presence of an Element such as I, U or A accounts for the presence of middle vowels because these correspond to expressions containing A and I or U (E=I.A and O=U.A). Thus, on the one hand, we expect to have no middle vowel when the three root consonants are present. This is indeed the case in class I, which contains verbs with three root consonants. On the other hand, this hypothesis explains the presence of long middle vowels that are expected in class II and IV, which miss a root consonant.

Moreover, glides drop in a post-consonantal context. We would therefore expect to find high long post-consonantal vowels but never in the initial, position where glides take place. This is indeed the case: verbs of class II never have a high vowel whereas any vowel, high or middle, can appear in verbs which miss a second root consonant (see class IV verbs).

This hypothesis on the phonological representations of long vowels allows us to account for their behaviour in closed syllables and to derive the vocalism of strong verbs according to the nature of the root.

5. The Template of Strong Verbs

This hypothesis on the nature of long vowels and the vocalism of strong verbs leads me to argue for a unique template shared by every strong verb.

The verbal roots contain at most three consonants. I therefore assume that the simple stem comprises three *CV* positions which onsets receive the root consonants (noted *R* below).

There also exists for every strong verb a specific position in the initial where personal and aspectual markers are found, namely $[CV]_{p/a}$. Personal markers correspond to a set of consonants that are linked to the onset, *C* (see example 2). The aspect marker is an alternation on the nucleus *V* between the lexical vowel in the perfect tense and an /a/ in the imperfect, whatever the lexical vowel as shown in (14):

(14)	*Perfect*	vs	*Imperfect*	
	egeere	vs	ageere	'bail out'
	icfide	vs	acfide	'learn'
	oogore	vs	aagore	'beat'
	uktube	vs	aktube	'write'

As long as the Perfect marker always corresponds to the lexical vowel of the verbs, we can suppose that there is no marker for Perfect and so that the alternation between the Perfect and the Imperfect is *@/a*. Since a nucleus cannot remain empty in this position (because initial consonant clusters are forbidden in Afar), it copies the lexical vowel in the Perfect tense.

Elsewhere, the vocalic positions are identified by the lexical vowel of the verb in accordance with the phonotactic strategies of Afar and Proper Government.

Thus, the simple stem of strong verbs is:

(15)
$$\begin{array}{l} \quad\quad R_1\ R_2\ R_3 \\ \quad\quad\ \ |\ \ |\ \ | \\ [CV]_{p/a}\text{-}[CV\ CV\ CV]_{root} \end{array}$$

However, this simple stem doesn't account for all verbal patterns. Nevertheless, the derivational morphology allows us to identify other positions and to construct an extended stem as follow. Three possibilities are offered, exemplified in (16) below: the adjunct of a prefix, the adjunct of a suffix and the gemination of the second radical consonant (which often comes with prefix adjunction). These possibilities can be combined.

(16)	Prefix:	uktube	'write'	<->	uskutube	'cause to write'
	Suffix:	ifdige	'release'	<->	ifdigise	'cause to release'
	Geminate:	irgide	'dance'	<->	iyriggide	'cause to dance'

Thus, I believe we can construct an extended stem by adding three *CV* positions to the simple stem in order to account for these derivations. In doing so, we obtain a $[CV]_{pref}$ in front of the root, a $[CV]_{suff}$ after the root and a $[CV]_{gem}$ inside the root, between the positions of the first and the second root consonants (it makes sense to think that derivational positions are closer to the root than the inflexional position $[CV]_{p/a}$). The representation of the extended stem is given in (17):

(17) $[CV]_{p/a}$-$[CV]_{pref}$-$[CV[CV]_{gem}CVCV]_{root}$-$[CV]_{suff}$

This extended stem constructed on the basis of derivation allows us not only to account for this kind of morphology, but also allows us to derive all the strong verbal patterns given in table (5). Even in case of derivation, strong verbs that filled the whole template with root and derivational consonants never outsize this template - non-root consonants alternate with other derivational consonants (see example in 6). When $[CV]_{pref}$, $[CV]_{gem}$ and $[CV]_{suff}$ are not identified by any derivational consonants and are consequently not licensed, they drop. The other prosodic positions of the template must be identified or licensed to remain empty. Thus, when a root consonant is missing in the surface, there is a vocalic lengthening in order to maintain the size of the template given above. Then, the underlying consonant can modify the quality of the vowel.

The representation of long unabridgeable vowels and the template proposed above allow us to unify the verbal class of strong verbs not only according to their conjugation but also based on their shared underlying prosodic structure.

6. Conclusion

The new data gathered by the observation of a distribution of lexical vowel as a function of strong verb surface patterns leads us to argue for two different phonological representations of long vowels depending on their behaviour in closed syllables. On the one hand, this hypothesis allows us to account for the vocalism of strong verbs; on the other hand, it makes it possible to unify strong verbs within a unique underlying template from which every existing surface pattern can be derived.

Furthermore, this analysis suggests that the only phonological vowels are the three cardinals, /i/, /a/ and /u/. The occurrence of a middle vowel on the surface seems to be conditioned by the prosodic structure. In strong verbs, middle vowels have to be long, they are derivated from the lexical vowel and a missing root consonant. Our phonological representation of long vowels account for their behaviour in closed syllables and higlights the relationship between the prosodic structure and the sound of a vowel.

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On *At*-Causatives of Transitive Verbs in Chaha[1]

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1. Introduction

Chaha, a Semitic language spoken in South-West Ethiopia, is an SOV, pro-drop language in which verbs are heavily inflected for agreement, such as person, number, and gender of the subject and the object (Hetzron 1977) as in (1).

(1)

a. aləmu	jəmʷəta	aŋgatʃa	k'əpʷərənɨm
Alemu	dead	cat	buried.3smS.3smO
'Alemu buried the dead cat'			
b. *pro*	jəmʷəta	aŋgatʃa	k'əpərnem
	dead	cat	buried.1plS.3smO
'We buried the dead cat'			

In (1a), the verb shows subject agreement with 'Alemu (3sm)' and object agreement with 'the dead cat (3sm)'. Probably due to the strong verbal agreement, a null pronominal (*'pro'*) can be used as the subject (or the object), as in (1b).

Besides agreement-marking, Chaha verbs host prefixes to yield transitivity alternations, passivization, and causativization. Hetzron's (1977) summary of the three main verbal prefixes for these purposes, *tə-*, *a-*, and *at-* is shown in (2).

(2) Hetzron (1977)

tə-	passive-reflexive
a-	causative, adjutative ('help to')
at-	factitive ('make someone do something')

[1] I am grateful to my consultant, Tadesse Sefer, for his patience and cooperation. I would also like to thank Sharon Rose, Maria Polinsky, John Moore, Gina Taranto, Todd O'Bryan, Andy Hickl, and the audience of BLS 27 for thier helpful comments on various versions of this work and Michael Klieman for translation of French. They do not necessarily agree with the analysis presented here and any shortcomings and errors are strictly my own responsibility.

To form causatives of transitive verbs, *at-* is used as shown in (3).

(3)
a. Simple transitive

raxel	jəm^{w}əta	aŋgatʃa	k'əp^{w}ərətʃiniim
Rachel	dead	cat	buried.3sfS.3smO

'Rachel buried the dead cat'

b. Accusative causee

jə-raxel	jəm^{w}əta	aŋgatʃa	at-k'əpərnəjam
ACC-Rachel	dead	cat	CAUS-buried.1plS.3sfO

'We had Rachel bury the dead cat'

c. Oblique causee

jəm^{w}əta	aŋgatʃa	bə-raxel	at-k'əpərnem
dead	cat	OBL-Rachel	CAUS-buried.1plS.3smO

'We had the dead cat buried by Rachel'

At-prefixation to a simple transitive sentence like (3a) yields two types of causatives. One is the type shown in (3b), with an accusative-marked causee 'ACC-Rachel' and the verb exhibiting object-agreement with it for '3sf'. The other type is with an oblique-marked causee 'OBL-Rachel' and the verb showing object-agreement with the base object 'dead cat' for '3sm' as shown in (3c).

In addition to triggering different verb-object agreement, the two constructions correlate with different grammatical properties of the causee. For instance, it is possible to omit the oblique-marked causee, which is not shown in verb-object agreement. However, although the accusative-marked causee may also be null, agreement must still be shown on the verb. Additionally, the accusative-marked causee controls PRO in a purpose clause, but the oblique-marked causee cannot, as in (4).

(4)
a. Accusative causee

[PRO$_{i/*arb}$ waga	tɨrəxβe]	jə-raxel$_{i}$	jəm^{w}əta	aŋgatʃa	at-k'əpərnəjam
money	get.3sfS.to	ACC-R	dead	cat	CAUS-buried.1plS.3sfO

'We had Rachel bury the dead cat in order for her (Rachel/*someone else) to get money'

b. Oblique causee

[PRO$_{*i/arb}$ waga	tɨrəxβe]	jəm^{w}əta	aŋgatʃa	bə-raxel$_{i}$	at-k'əpərnem
money	get.3sfS.to	dead	cat	OBL-R	CAUS-buried.1plS.3smO

'We had the dead cat buried by Rachel in order for her (*Rachel/someone else) to get money'

In (4a) the causee 'ACC-Rachel' is the only possible recipient of money, while in (4b) the recipient must be someone other than the causee 'OBL-Rachel'.

In this paper I provide a structural account of the two *at*-causatives of Chaha transitive verbs. Building on Hale and Keyser's (1993) semantic decomposition of verbs, I show that they are formed using different verbal heads. Following Amberber (1996) and Harley (1995, 1996), I argue that the different verbal heads have different functions: CAUSE adds an external argument while BECOME suppresses it. The accusative causee causative combines the CAUSE morpheme *at-* with a transitive predicate headed by another CAUSE. The oblique causee causative combines *at-* with a detransitivized predicate headed by BECOME. In the latter construction the suppressed external argument licenses an argument adjunct, or the oblique-marked causee, as argued by Grimshaw (1990). In these derivations, I show that different Event heads play a crucial role. Section 2 provides the background for my analysis, followed by my proposal in Section 3. Section 4 shows why alternative accounts to similar types of causatives do not work for Chaha, and conclusions are given in Section 5.

2. Background

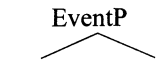
2.1 Event Heads

Hale & Keyser (1993) posit a structural configuration of arguments in the lexicon (L-syntax): verbs are made of different types of verbal heads such as DO, CAUSE, and BECOME, incorporated with lexical heads, such as A, N, and P. For example, all forms of the English verb *thin* involve the adjectival head *thin*. 'Inchoative *thin'* is headed by BE and BECOME while 'transitive *thin*' is headed by CAUSE and BECOME. In both cases, the internal argument (*the gravy* as in *The gravy thinned* or *The cook thinned the gravy*) is a part of the lexical projection. On the other hand, the external argument (*The cook* in the transitive example), if it exists, is introduced in [Spec, IP] at the real syntax level, S-syntax.

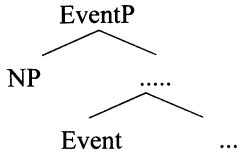
With the development of the Minimalist Program, Hale and Keyser's (1993) ideas on semantic and syntactic decomposition of verbs has been transported from the L-syntax level to the real syntax level. Harley (1995, 1996) proposes the use of EventP for both L-syntax and S-syntax, suggesting that EventP is headed by a light verb which delimits the eventiveness of a base verb. If the event denoted by the verbal head has an argument in its specifier (external argument), the Event head is interpreted as CAUSE. If there is no argument in the specifier of EventP, the Event head is interpreted as BECOME/HAPPEN. (5a) shows inchoative *thin* with a BECOME/HAPPEN head and (5b) shows transitive *thin* with a CAUSE head. Notice there is no external argument in the inchoative *thin* (5a) while there is an external argument (*the cook* in this case) in the transitive *thin* (5b).

(5)

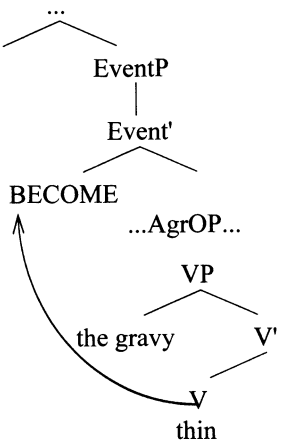
a. Event=BECOME/HAPPEN



b. Event=CAUSE

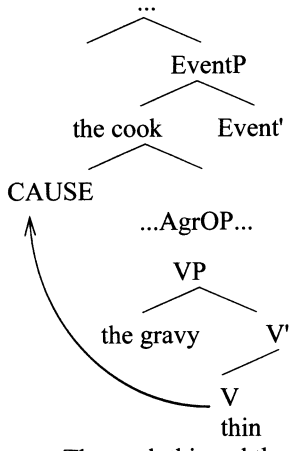


e.g. inchoative *thin*



The gravy thinned

e.g. transitive *thin*



The cook thinned the gravy

2.2 Intransitive/Transitive Alternations in Chaha

The intransitive/transitive alternations of Chaha verbs are shown in (6).

(6)	Intransitive		Transitive	
a. Suppletive				
	nədədəm[2]	'burned'	məkʲərəm	'burned'
	mʷət'əm	'died'	k'ət'ərəm	'killed'
b. Transitives only				
	--		k'əpərəm	'buried'
	--		nəkəsəm	'bit'
c. Inchoative/Transitive (with *tə-*)				
	tə-kəfətəm	'opened'	kəfətəm	'opened'
	tə-səpərəm	'broke'	səpərəm	'broke'

[2] I use the standard citation forms (third singular masculine perfect) as basic verb forms.

d. Unaccusative (?[3])+ *a-*

tʃənəm	'came'	a-tʃənəm	'(let come-->) brought'
nəpərəm	'lived'	a-rəpərəm	'(let live-->) supported'

Some alternations (6a-b) are lexically specified, while others require the use of *a-* for increasing the valence or *tə-* for decreasing the valence[4]. Amberber (1996) argues that in Amharic, a closely related language, intransitive/transitive/causative alternations are 'an artifact of Event-type alternations' that can be captured configurationally by phrase structure. For example, the *tə-* prefix has two functions. It is both a passive morpheme that absorbs the external argument, and an aspect head that suppresses the CAUSE morphology of transitive verbs. Amberber (1996) argues that the class of transitive verbs that are conceptualized as events which normally come about by external causes, such as 'open' and 'break', can become inchoative by taking *tə-*. For instance, transitive 'break' has two lexical VPs. However, if *tə-* is inserted as an aspect head, the CAUSE morpheme in the higher VP is suppressed (thus the higher VP is eliminated along with the external argument) and the inchoative 'break' is derived. On the other hand, *a-* and *as-* are used to add an argument by adding another VP shell[5].

3. Structural Account on Chaha *At*-Causatives of Transitive Verbs

In this section I show that accusative-causee and oblique-causee constructions are formed by embedding different verbal heads into the *at-* 'CAUSE' head. I adopt phrase structure trees based on MPLT (Chomsky 1993) with the 'attract' (Chomsky 1995) version of the feature checking mechanism: syntactic heads have strong category features that need to be checked before Spell-out, while DPs raise when attracted by heads. Along with this process, other features (phi, Case) on heads get checked-off as free riders. Recall that the points to account for are: (a) different verb-object agreement, (b) omissibility of the oblique-causee, and (c) different PRO control properties associated with the two types of *at*-causatives.

3.1 Chaha *At*-Causatives with the Accusative-Marked Causee

Following Harley (1995; 1996) and Amberber (1996), I argue that different verbal heads have different functions: CAUSE adds an external argument while BECOME suppresses it. Let us start with the simpler case of the Chaha *at-*

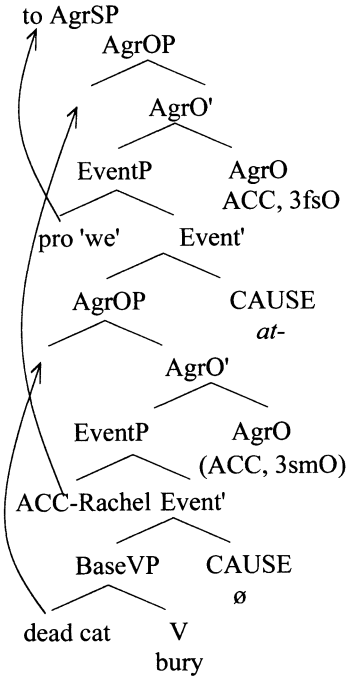
[3] There are intransitive verbs that can take only the *a-* prefix ('arrive', 'get fat', 'grow', 'survive', etc.) and those that can take both *a-* and *at-* prefixes ('run', 'dance', 'get better', etc.) for causativization in Chaha. In Ueno (1999) I argue that the first group is unaccusative verbs, while the latter group is unergative verbs. Also see Petros (1996a) for a different account.

[4] Besides the above, there is a class of verb called stem necessitating verbs that can only exist with certain prefixes. See Petros (1994) for details.

[5] Amberber (1996), however, does not provide a separate structural account for the oblique-marked causee construction in Amharic. He attributes the difference in case-marking to the competition to one AgrO for two objects (causee and base object).

causative: the accusative-marked causee construction. Again following Harley (1995; 1996) and Amberber (1996), I assume that a transitive verb has two VP shells: a BaseVP that has the internal argument, and an EventP headed by CAUSE that has the external argument. I propose that the accusative-causee construction is formed by embedding the transitive EventP into another EventP headed by *at-* 'CAUSE' as shown in (7)[6].

(7) Accusative-Causee Construction



jə-raxel jəmʷəta aŋgatʃa at-k'əpərnə**jam**
ACC-R dead cat CAUS-buried.1plS.**3sfO**
'We had Rachel bury the dead cat'

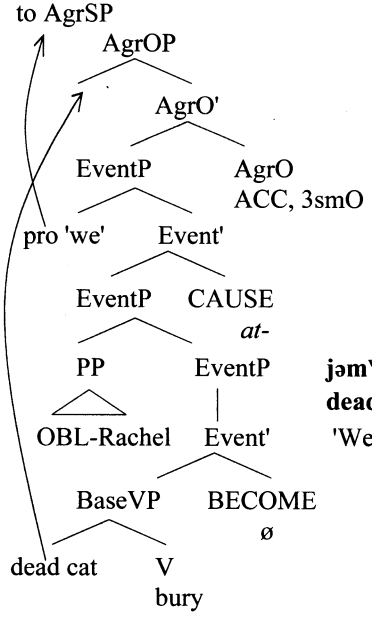
The embedded Event P has a specifier for the external argument of *bury*, thus, AgrOP is projected above. I assume overt raising of argument DPs, due to the canonical word order of the oblique-causee construction (see below). The base object DP 'dead cat' raises to Spec, AgrOP of the lower EventP to check its D feature. The (abstract) accusative Case and (abstract) object agreement features on the AgrO are checked as free riders. The causee DP 'ACC-Rachel' raises to Spec, AgrOP of the matrix EventP headed by *at-* to check the D feature of AgrO. Accusative case and verb-object agreement features on the matrix AgrO are also checked along with this process, requiring accusative marking of the causee and verb-object agreement with it. The causer pro 'we' also raises to Spec, AgrSP.

[6]Cf. Petros (1996b) for arguments against AgrOP in Chaha and other Ethiopian Semitic languages.

3.2 Chaha *At*-Causatives with the Oblique-Marked Causee

Next, I illustrate below how the oblique-causee construction is formed. I propose that in this case the *at*-causative is formed by embedding the detransitivized EventP with the external argument suppressed by a null BECOME head into another EventP headed by *at-* 'CAUSE' as shown in (8).

(8) Oblique-Causee Construction



jəmʷəta aŋgatʃa bə-raxel at-k'əpərnem
dead cat OBL-R CAUS-buried.1plS.**3smO**
'We had the dead cat buried by Rachel'

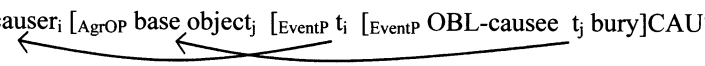
The derivation is as follows: first, the external argument (causee) of the transitive EventP is suppressed by the BECOME head. This is similar to the *tə-* prefix suppressing the external argument of transitives to form passives or inchoatives, such as *səpərəm* 'break (transitive)' vs. *tə-səpərəm* 'be broken (passive)/break (inchoative)', although in this case the BECOME head is null instead of *tə-*. There is no need for an AgrOP for an EventP headed by BECOME with no specifier, thus AgrOP is not projected above the lower EventP. Second, the suppressed external argument (causee) licenses an argument adjunct, as discussed later. Finally, the detransitivized EventP is combined with the matrix EventP headed by *at-*, that licenses the causer in its Specs[7].

[7] Similar analyses to the present analysis have been offered in the GB framework. Romance languages have a similar oblique-causee construction (the *faire par* construction) as shown in (i).

(i) Pierre a fait reparer sa voiture par le mecanicien
Peter had repaired his car by the mechanic
'Peter had his car repaired by the mechanic'

Since the canonical word order in this construction is [causer, base object, OBL-causee], as in *'pro*, dead cat, OBL-Rachel', I propose overt raising of argument DPs, thus strong D features on Agrs, as shown in (9).

(9)



The base object 'dead cat' raises to Spec, AgrOP of the matrix EventP to check the D feature of AgrO. Along with this, the (abstract) accusative Case and object-agreement features on AgrO are checked by DP, requiring verb-object agreement with the base object. The causee DP 'Rachel' gets its Case checked within its PP.

Adopting Grimshaw's (1990) analysis of argument adjuncts, I propose that the oblique-marked causee is an argument adjunct. Grimshaw (1990) argues that argument-adjuncts (a-adjuncts) are licensed by suppressed argument positions, including passive *by* phrases and possessives. A-adjuncts are adjunct-like in that they are optional and behave like adjuncts with respect to omissibility, anaphora, and extraction. However, even though a-adjuncts are licensed by argument positions, they lack several properties of true arguments. When an a-adjunct is present, control is impossible, as the relevant argument position of the verb or noun is not syntactically satisfied and thus not available for a syntactic control relationship. Besides the omissibility, recall from (4) that the oblique-marked causee cannot control PRO in a purpose clause, while the accusative-marked causee can. This is in the spirit of Grimshaw (1990), who argues that a construction with an argument adjunct involves suppressed argument that cannot participate in control.

4. Alternative Accounts and Why They Do Not Work for Chaha

In this section I briefly discuss alternative accounts to similar types of causatives and why they do not work for Chaha *at*-causatives.

4.1 Oblique Causee Construction: *A-/At-* plus *Tə*-Passive?

Recall that the passive in Chaha is formed by *tə*-prefixation, as in *bənam* 'ate' and *tə-ßənam* 'was eaten'. This may lead us to believe that the oblique-marked causee construction is the causative of *tə*-passive, as in *a-* or *at-* + *tə-* + verb = *at*-verb. However, not many verbs can take the *tə-* prefix[8] in Chaha, while *at*-causatives

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Burzio (1986) argues that if the verb cannot assign a theta-role to the subject, either when (a) a verb has passive morphology or (b) there is no subject position, a *par* 'by' phrase can appear. The former yields the passive construction while the latter yields the *faire par* construction. Zubizarreta (1985) argues that *faire* functions as an indirect trigger of deletion or blocking of the external argument of the verb, thus substituting for passive or anticausative morphology.

[8] Rather than the passive construction, Chaha often uses impersonal.

(with both accusative causee and oblique causee) are built on base verbs which cannot take the passive prefix *tə-* alone, as shown in (10).

(10)				
	a. məkʲərəm	'burned'	*tə-məkʲərəm	at-məkʲərəm
	b. k'əpərəm	'buried'	*tə-k'əpərəm	at-k'əpərəm
	c. dəpərəm	'price-increased'	*tə-dəpərəm	at-dəpərəm
	d. mʷək'əm	'boiled'	*tə-mʷək'əm	at-mʷək'əm

This rules out the *at-* as *a-* or *at-* plus *tə*-passive analysis.[9] So even if it may be still said that the oblique-causee construction in (8) is the causative of some form of abstractive passive, it is certainly not the causative of the passive form that can stand independently. The suppression of the external argument for the oblique causee construction must occur accompanied by the *at-* 'CAUSE' morpheme.

4.2 Baker (1988)

Similar to Chaha, Chichewa, a Bantu language, also has two constructions with an accusative-marked causee or an oblique-marked causee shown in (11: examples from Alsina and Mchombo 1990), depending on the dialect.

(11)

a. Nŭngu i-na-phík-íts-a kadzidzi maûngu (Chichewa-B)
9 porcupine 9S-PS-cook-CAUS-FV 1 a owl 6 pumpkins
'The porcupine made the owl cook the pumpkins'

b. Nŭngu i-na-phík-íts-a maûngu kwá kádzīdzi (Chichewa-A)
9 porcupine 9S-PS-cook-CAUS-FV 6 pumpkins OBL 1 a owl
'The porcupine made the owl cook the pumpkins' (OR 'The porcupine had the pumpkins cooked by the owl')

Based on the Uniformity of Theta Assignment Hypothesis (UTAH), which states that constructions with the same theta-roles share the same D-structure, Baker (1988) compares the morphologically derived causative construction with the bi-clausal causative construction and argues that they share the same D-structure, but incorporate verbal heads differently. He argues that due to the Extended Projection Principle (EPP), which requires all phrases to be fully projected, the morphologically derived causative remains bi-clausal at S-structure.

Chaha *at*-causatives show strong evidence for mono-clausality in terms of negation and subjacency, ruling out Baker's (1988) biclausal account. Assuming that at most one NegP can be projected in a clause, a bi-clausal structure could allow two NegPs. However, this is not the case in Chaha. As shown in (12) and

[9] For a similar causative pair in Chichewa, which will be discussed in (11), Baker (1988) denies the passive of causative analysis for the lack of passive morphology, as well as Alsina (1992) does so for the lack of passive morphology, different oblique-markers for the passive agent and the causee, and the fact that not all passivizable verbs can take the oblique causee construction.

(13), *at*-causatives of transitive verbs with both accusative- and oblique-marked causees can only negate the cause predicate (12a and 13a) but not the base verb predicate (12b and 13b).

(12) Accusative-marked causee

a. aləmu jə-raxel mət'af an-at-nəbəβəna
Alemu ACC-Rachel book NEG-CAUS-read.3msS.3fsO
'Alemu didn't make Rachel read the book'

b. *aləmu jə-raxel mət'af at-an-nəbəβəna
Alemu ACC-Rachel book CAUS-NEG-read.3msS.3fsO
'Alemu made Rachel not read the book'

(13) Oblique-marked causee

a. aləmu mət'af bə-raxel an-at-nəbəbəm
Alemu book OBL-Rachel NEG-CAUS-read.3msS
'Alemu didn't make the book read by Raxel'

b. *aləmu mət'af bə-raxel at-an-nəbəbəm
Alemu book OBL-Rachel CAUS-NEG-read.3msS
'Alemu made the book not be read by Raxel'

Moreover, this does not seem to be due to morphological ordering restrictions. For (12a) and (13a), the readings 'Alemu made Rachel not read the book' and 'Alemu made the book not be read by Rachel' are impossible.

Another test for mono-clausality is Subjacency. Using Subjacency violation, Baker (1988) provides data that supports the bi-clausality of Chicheŵa causative[10]. He argues that in Chicheŵa-A IP is the bounding node and oblique causees cannot be relativized, as they have to cross two IPs according to his proposal. However, this is not the case in Chaha, although IPs are bounding nodes, just like English or Chicheŵa-A, as shown in (14).

(14)

a. *Wh*-island

?/*zix [[m^{w}an __ jə-k'əpərə xəma] j-əçin] jəm^{w}əta aŋgatʃa u
this who REL-buried.3msS that REL-know.1sS.3smO dead cat is
*'This is the dead cat [which$_i$ I know [who buried __$_i$]]'

b. Long distance dependency

zix [raxel __ jə-k'əp^{w}ərətʃin xəma] j-əçirn] jəm^{w}əta aŋgatʃa u
this R REL-buried.3sfS.3smO that REL-know.1sS3msO dead cat is
'This is the dead cat [which$_i$ I know [that Rachel buried __$_i$]'

[10] Moore (1991) argues that this may be due to bi-clausal 'phenomena' rather than real bi-clausal structure.

In (14a), since Spec of the most embedded CP is occupied by 'who', 'dead cat' cannot be extracted, crossing two IPs. Conversely, in (14b) since Spec of the most embedded CP is not occupied, 'dead cat' can be extracted via the Spec, crossing one IP at a time. With respect to *at*-causatives, it is possible to extract either the causee or the base object for either construction as shown in (15)-(16).

(15)

a. [jə-aləm j-at-ʃəkətne k'awa] wahek'ar banə
ACC-Alemu REL-CAUS-made.1plS.3smO coffee good-thing pastAUX
'The coffee we had Alemu make was good'

b. [k'awa j-at-ʃəkətne miṣ] aləmu banə
coffee REL-CAUS-made.1plS.3smO man Alemu pastAUX
'The man we had make coffee was Alemu

(16)

a. [bə-aləmu j-at-ʃəkətne k'awa] wahek'ar banə
OBL-Alemu REL-CAUS-made.1plS.3smO coffee good-thing pastAUX
'The coffee we had made by Alemu was good'

b. [k'awa j-at-ʃəkətne miṣ] aləmu banə
coffee REL-CAUS-made.1plS.3smO man Alemu pastAUX
'The man by whom we had coffee made was Alemu'

From the above examples demonstrating negation and Subjacency, we conclude that Chaha *at*-causative is mono-clausal, unlike Baker's (1988) proposal.

4.3 Summary of Section 4

To sum up, we have seen that neither the causative of the *tə*-passive analysis nor the bi-clausal analysis works for Chaha *at*-causatives on transitive verbs.

5. Conclusion

For *at*-causatives on transitives in Chaha, I have shown that the accusative-causee construction is derived by embedding a transitive EventP into the matrix EventP headed by *at-*. The oblique causee construction is formed by detransitivizing a transitive EventP with the BECOME head and then embedding it into the EventP headed by *at-*. The suppressed external argument licenses an argument adjunct, or the oblique-marked causee, that can be omitted and cannot control PROs. The two constructions yield different object agreement on the verb, as different DPs raise to the AgrOP of *at-* and check AgrO's object agreement feature, depending on the construction. In deriving the two constructions, the most crucial issue was the nature of the event heads. The BECOME head detransitivizes or suppresses the external argument of a transitive predicate which was originally headed by the CAUSE head. This utilizes a language-internal mechanism similar to the *tə-*

prefix suppressing the external argument of transitives to form inchoatives or passives. This mechanism is able to account for the data, while alternative accounts cannot. Semantic decomposition of verbs, therefore, seems to be an effective approach to account for morphological causatives.

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On At-Causatives of Transitive Verbs in Chaha

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Verbal Plurality in Chadic: Grammaticalisation Chains and Early Chadic History

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1. Introduction

Chadic languages appear to encode a semanto-syntactic dimension related to the expression of number, which is much wider in scope and grammatical distribution than, for instance, the category of "plural" as known, for instance, from Indo-European languages. Some Chadicists, like the present author, have hence come to use the term "plurality" in this wider sense: Plurality in Chadic appears to be a dimension crossing over several major grammatical divides and domains, i.e.

1. morphology and syntax (cf., in particular, Frajzyngier 1997a),
2. determiners and nouns (Wolff 1992a, 1992b, 1993, 1995, Frajzyngier 1997a),
3. nouns and verbs (Frajzyngier 1977, Wolff 1977, Newman 1990),
4. verbal derivation and verbal inflection (Wolff 1977, 1979, 1984a, 1987a, Newman 1990),
5. within verbal inflection: agreement with grammatical subject (Newman 1990) and henceforth so-called "extensive" verb forms as encoded in the aspect/tense systems (traditionally referred to as "imperfective aspect" stems in Chadic literature);

The issues under 3-5 in particular had been at the core of a heated and very productive discussion some twenty to thirty years ago, focussing on the nature and historical development of the verbal inflectional system in Chadic with particular reference to its possible historical connection with similar typological issues in Semitic and other Afroasiatic languages.[1] The international discussion

[1] Cf. particularly Newman & Schuh (1974), Schuh (1976), Frajzyngier (1977), Newman (1977), Wolff (1977, 1978 published 1984a, 1979). The discussion rested heavily on previous and very influential work of H. Jungraithmayr published between 1966 and 1974 (cf. the quoted works for references). For another decade, the present author then took the investigation further, also giving particular attention to the emergence of tone in Chadic: Wolff (1982, 1983b, 1984b, 1984c, 1985, 1986, 1987a, 1987b, 1988).

ended somewhat abruptly,[2] and is only marginally referred to in P. Newman's otherwise excellent book on *Nominal and Verbal Plurality in Chadic*, which was published in 1990.

Recently, Frajzyngier (1997a) took up some of the salient issues again from the viewpoint of language typology and grammaticalisation theory. Had he previously argued in favour of a basically unilinear diachronic development of nominal plurality from verbal plurality (1977), he now argues in favour of more complex grammaticalisation paths from demonstratives to plural markers both for nouns and for verbs. Frajzyngier challenges Newman's (1990) distinction between inflectional plural subject agreement stems ("plural" verbs) and derivational plurality-of-event stems ("pluractional" verbs) on the basis that both share the same formal means of encoding plurality.[3] Independently and even more recently, the present author had also chosen to return to his once favourite research topic.[4] Interestingly, Frajzyngier's study (1997a) and most of the ideas propounded in Wolff (2000a, 2000b) tend to complement each other rather than provide conflicting accounts of what rests largely on the same data and similar assumptions concerning the nature and directions of grammaticalisation. The present paper readdresses the issue, also in the light of Frayjzyngier's latest contribution.

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[2] One of the reasons being that two of the authors who had critically taken up Jungraithmayr's pioneer studies on the history of the Chadic verbal inflectional system, had shifted their focus on issues in Hausa grammar in the 1990s: Newman published at least 18 important articles on Hausa since 1980, before his seminal work *The Hausa Language. An Encyclopaedic Reference Grammar* was finally published in 2000; Wolff published a few articles dealing with Hausa linguistics between 1990 and 1995 and compiled the first Hausa reference grammar (*Referenzgrammatik des Hausa,* 1993) since R. C. Abraham's days in the 1940s and 1950s.

[3] Frajzyngier's attempt to prove Newman wrong on this matter by adducing data from Muzgu, Gidar and Xdi rests, however, on the validity of his synchronic analyses, which not all experts on Central Chadic languages would automatically accept. As a matter of fact, with a few exceptions all of Frajzyngier's main arguments rest on selective data and their analysis which stem from F.'s own largely unpublished field notes: "Some or all data on Lele, Gidar, Masa, Mandara, Hona, Mina (also called Hina...), Xdi are from my field notes... The representation of data from the work in progress should be considered tentative pending the final analysis." (1997a: 238) The bulk of F.'s examples stem from his unpublished notes on Gidar, Mandara and Xdi. For the latter two languages the present author claims some expertise, which leads him to be quite sceptical about many of F.'s proposed analyses for the individual languages.

[4] Verbal plurality in Chadic was re-addressed in the light of some extra-linguistic historical and ecological factors (Wolff 2000a) and, closely linked to grammaticalisation theory, in terms of Chadic-internal areal contact and sub-classification (Wolff 2000b). Until some of the major details presented in this paper were first exposed to audiences at the 23rd West African Languages Congress (Legon, August 15-19, 2000) and at the 3rd World Congress of African Linguistics (Lomé, August 21-25, 2000), the present author had not seen the 1997a paper of Z. Frajzyngier to whom he is indebted for pointing out its existence on the occasion of the Lomé congress. The present paper thus supersedes the one presented in Lomé and duly acknowledges Frajzyngier's preceding publication.

2. Grammaticalisation vs. re-grammaticalisation

The fundamentals of grammaticalisation involve cognitive and semantic strategies by which "complex contents are expressed by means of less complex and more basic contents, and abstract concepts by means of more concrete concepts".[5] The study of grammaticalisation processes in African as much as in languages elsewhere in the world, therefore, tends to accept a set of basic assumptions regarding the direction of these processes. It is generally argued [6] that grammaticalisation

- is exclusively unidirectional,[7]
- most often starts from a lexical source,
- in general, proceeds from concrete to abstract or, in any case, from less abstract to more abstract,
- if it proceeds from one grammatical morpheme to another, the direction is from less grammatical to more grammatical,
- is sensitive to areal factors.[8]

For the purpose of this paper and in order to catch peculiar and long since noticed instances of "re-employment of grammatical morphemes in Chadic",[9] I will use the term "grammaticalisation" in a rather narrow sense, i.e. only for unidirectional processes from lexical source to grammatical marker. The term "re-grammaticalisation" will be used to refer to unidirectional or bi-directional processes involving two grammatical markers, i.e. elements of a grammaticalisation chain other than the lexical source. I consider the proposed terminological distinction useful for the clarification of some major differences with regard to three basic mechanisms involved when we discuss grammaticalisation chains:[10]

[5] Heine (1997:2); cf. also Lakoff/Johnson (1980).
[6] Traugott/Heine (1991), Heine/Claudi/Hünnemeyer (1991), Heine et al. (1993), Hopper/Traugott (1993).
[7] Heine (1997), but cf. Frajzyngier (1997b) for arguments in favour of bi-directionality.
[8] Heine (1997), which I take to involve genealogically and typologically motivated "drift" as much as interferences from neighbouring languages.
[9] Cf. the notion of "redesignation" of verbal stem forms, which is so essential in the arguments of Wolff (1977, 1979, 1984a), which conceptually links up, with Schuh's (1990) notion of "re-employment" of grammatical morphemes in Chadic.
[10] For the notion of grammaticalisation chain cf. Heine (1992).

(1) GRAMMATICALISATION CHAIN, involving

GRAMMATICALISATION: FROM LEXICAL SOURCE TO GRAMMATICAL MARKER	**RE-GRAMMATICALISATION:** FROM GRAMMATICAL MARKER TO GRAMMATICAL MARKER
de-semanticization: semantic *bleaching*	**Re-semanticization :** semantic *reorientation*
de-categorialization: *loss* in morphosyntactic properties	**Re-categorialization:** *shift* in morphosyntactic properties
erosion: phonetic reduction	

Instances of re-grammaticalisation in the above sense are theoretically and typologically particularly interesting because they

- have no lexical source but proceed from one grammatical category or marker to another,
- thereby involve a tricky theoretical problem as to differences in degree of "grammaticalness" or "abstractness" regarding the grammatical categories involved,
- are sensitive to areal factors (mostly Chadic-internal in the present case),
- are likely to shake widespread assumptions about the exclusive unidirectionality of grammaticalisation in general.

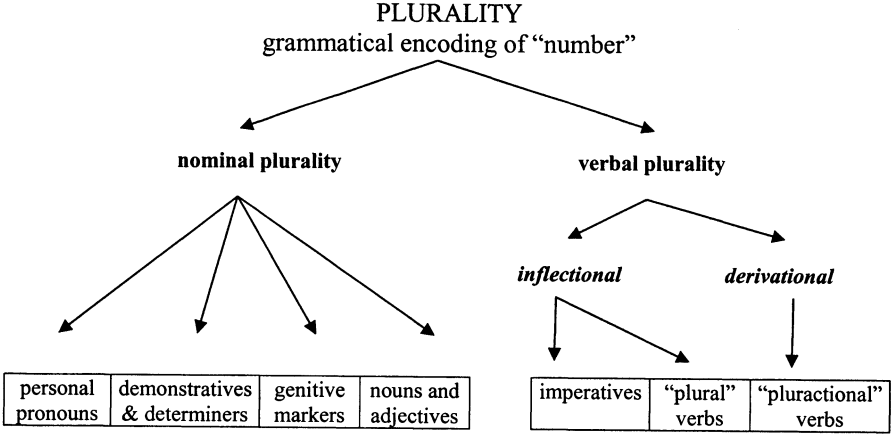
3. Plurality in Chadic

For a full understanding of the issue in Chadic linguistic history under consideration, it would be essential to take into account some fundamental linguistic and extra-linguistic information, which, for lack of time and space, cannot be reported here in any detail.[11] Suffice it to say that the expression of plurality in Chadic ranks among the richest and most complex areas of grammar. It "encompasses various notions of pluralness or multiplicity including distributiveness and repetitiveness" (Newman 1990:1). It is, further, subdivided into several subsystems with – synchronically at least – their own sets of morphological and/or sub-morphemic formatives each. Intriguing and far from being fully understood by Chadicists and Afroasiaticists is the observation that

[11] For a fuller linguistic picture the reader is referred to Paul Newman's excellent survey of *Nominal and Verbal Plurality in Chadic* (1990); for some details of the extra-linguistic background fostering areal contacts and questions of Chadic-internal interferences with their effects on Chadic sub-classification, reference is made to an unpublished paper presented to the *22nd West African Languages Congress* in Legon, Ghana (Wolff 2000a) whose major ideas, however, are repeated in the present paper.

some of the formatives cut across the subsystems in such a way that it is hard to know from which subsystem they originate and why and how exactly they have spread into other subsystems. The subsystems as found in most Chadic languages are given in (2).

(2) Hierarchical display of domains of plurality in Chadic



3.1 Verbal Plurality in Chadic

In addition to the more trivial manifestations of plurality, which most languages of the world appear to display in their nominal subsystems, Chadic languages possess – or did possess in earlier stages of their history – at least three more subcategories of plurality, neatly distributed over their verbal systems and therefore jointly referred to as "verbal plurality":

- plural imperatives are "used when a command is directed at more than one addressee" (Newman 1990:1);
- inflectional plural agreement verb stems are "required by concord rules" (Newman (1990:1) to match the grammatical subject and thus form part of inflectional verb morphology;
- pluractional (= plural action) verb formations "generally represent the free choice of plurality as a semantic element" and, therefore, "belong to the domain of optional derivational morphology rather than concordial inflection"; the "essence of these verb forms is 'plurality of process or action'" (Newman 1990:54).

Illustrations from the three major branches of Chadic are given below; the chart also shows that not all Chadic languages (still) make use of all domains of verbal plurality:[12]

(3) Verbal plurality in Chadic

Chadic branch	language	imperatives [-pl] [-fem]	imperatives [-pl] [+fem]	imperatives [+pl]	plural agreement [-pl]	plural agreement [+pl]	pluractional [-pl]	pluractional [+pl]
West	Hausa	*tàfî* go away!	*kà-tàfî*	*kì-tàfî kù-tàfî*			*búgàa* beat *táfàsáa* boil	*búb-bùgáa* *tá-fár-fàsáa*
	Bole	*mek-kô*	*mes-sî*	*mak-kû* return!	*dɔ̀ppu* (he) followed	*dɔ̀pp-an...* (they) followed	*dàppu* gather	*dà-dàppu*
Central	Margi	*tsa*	*ts-àm*	beat!			*ntàsə̀* swallow	*ntà-ntàsə*
	Lamang	*ksá*	*a-f-ksá*	catch! *a-wa-f-ksa* catch up!			*ksa* catch	*k-a-sa* *kasa-sa* *kasa-kasa*
	Gisiga				*ʔi kaɗ* I kill	*ʔi kəɗ-am* we kill		
East	Dangla	*pilù*	*pil-oŋ*	open!			*sìbìr-* make fire	*sib-aa-r-*
	Bidiya				*kinda ʔasí* you (sg) came	*kunda ʔas-oŋ* you (pl) came	*bàkàl-* eat dry food	*bàk-àa-l-*

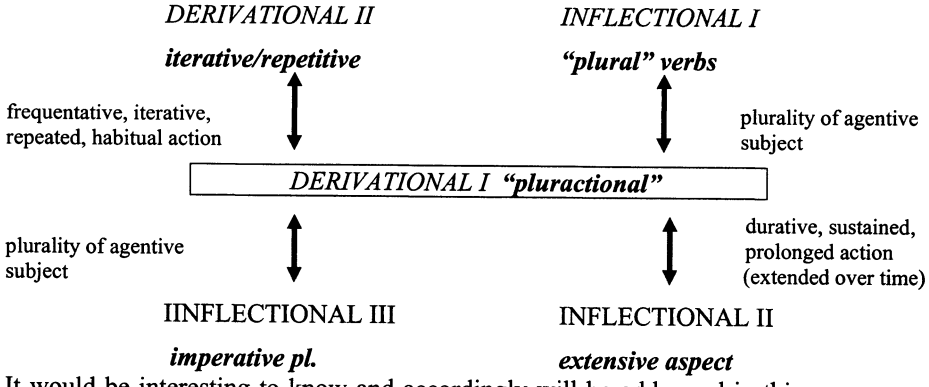
The semanto-syntactic categories of "sg/pl imperative" and "plural agreement (with grammatical subject)" don't appear to need any further comments. But note the semantic range of pluractional verbs in Chadic which encompasses a wide range of notions as given in (4).

(4) Functional labels in the domain of "pluractional" verbs[13]
- plurality of action or process
- plurality of agentive subject
- plurality of patient object
- distributiveness of location where action takes place simultaneously or in sequence
- frequentative, iterative, repeated, habitual action
- durative, sustained, prolonged action (extended over time)
- intensive action (usually involving repetition of action)

[12] For the sake of convenience the reader is referred to Newman (1990) for most of the language data used in this paper.
[13] Labels like the following are used by various authors for individual language descriptions.

It is quite obvious from this list of functional labels that there is heavy semantic overlap with notions, which other languages tend to grammatically encode in their tense/aspect system, or elsewhere in their derivational system; this situation is captured in the graphic representation (5): [14]

(5) Semantic overlap of "pluractional" readings with regard to other morphological categories



It would be interesting to know and accordingly will be addressed in this paper, whether and how these cases of semantic overlap have parallels with regard to re-grammaticalisation paths of grammatical marker.

3.2 Scope of this paper

In this paper, focus is on the subsystems of verbal plurality, and particular on pluractional verbs and their historical relationship to extensive aspect in Chadic, i.e. a particular inflectional category which is often labelled – quite inadequately, if not falsely – as "imperfective" and which, on first sight, would appear to have nothing to do with plurality in any way.[15]

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[14] Note that Newman, for instance, reconstructs PC (Proto-Chadic) ***-tV** as a derivational marker NOT marking pluractional and identifies it "definitely ... as an iterative (pluractional-like) stem formative" (1990:86) – yet and unfortunately he discusses reflexes of this suffix indiscriminately under "pluractionals". For reasons of time and space, the highly interesting history of this suffix (and the grammatical category as distinct from pluractional verb formation) in Chadic cannot be dealt with in any detail in this paper.

[15] I have come to revise my own rather uncritical acceptance of the label "imperfective" for what I now prefer to call "extensive" aspect, taking "extension in time" as the salient semantic property of these formations. Also, avoiding the term "imperfective" allows to get rid of the unhappy and, as I believe, wrong idea that the formations in question enter a systematic marked: unmarked dichotomy relation with formations which need to be labelled "perfective". In previous studies I have attempted to show that this dichotomic approach to Chadic inflectional systems yields synchronically highly unsatisfying and diachronically false results and veils the fact that, often, Chadic languages have a tripartite system of unmarked : marked : marked relationship where both

In particular, the following threefold character of subsystem transfer will be looked at which pertains to three different levels of abstraction of grammatical structure:

1. between the grammaticalisation of NUMBER and the grammatical encoding of situation-related TIME
2. between *derivational* verb morphology and *inflectional* verb morphology,
3. between *pluractional* verb forms and *extensive aspect* formation.

This subsystem transfer is graphically represented in (6).[16] For lack of time and space, reference to likely other subsystem transfers from nominal into verbal

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so-called "perfective" and "imperfective" are the marked members which contrast with an unmarked member (which, for simple convenience, I tend to call "aorist").

[16] In order to understand the full range of possible subsystem transfers in Chadic with regard to plurality, it is useful to look at the nominal plural formatives as reconstructed by Newman (1990). Given our insights into other properties of PC grammar, such as the elements of the PC determiner system as reconstructed by Schuh (1983), a compositional analysis becomes feasible, which would reduce the number of historically "original" and true noun plural makers from five to possibly one: ***-i***. Cf. Wolff (1992b, 1993, 1995) for such compositional reanalysis of Hausa plural markers as historically polymorphic complexes involving old determiners.

(7) Tentative compositional analysis of PC nominal plural markers

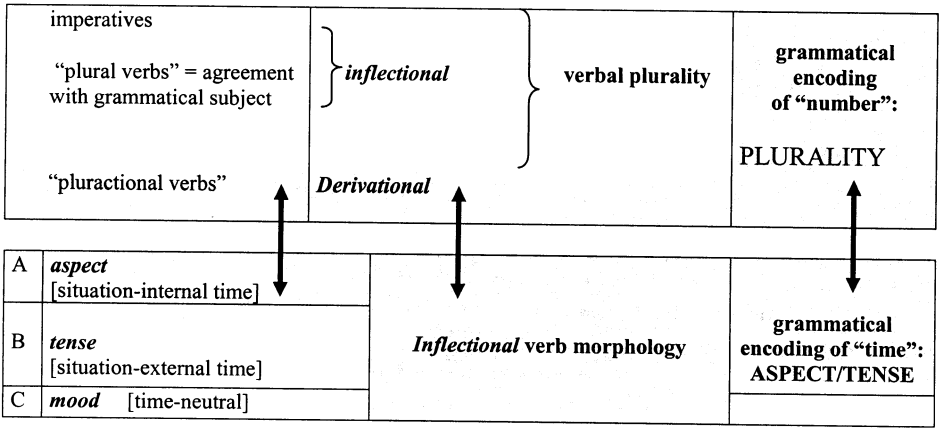
Newman (1990)	**tentative compositional analysis**	**transfer into verbal system?**
-aki	***-a-k-i***	YES
	1. internal a-insertion	***-k-, -(a)w(i) ~ -aw***
	2. determiner *-k	(with internal a-insertion)
	3. noun plural marker *-i	
-n-	***-n-***	YES
		-an (with internal a-insertion)
-d(i)	***-d-i***	YES
	1. determiner *-d	***-d-***
	2. noun plural marker *-i	
-i	***-i***	YES
		-i
-ai / -ay	***-a-i***	YES
	1. noun plural marker *-i	***-ay***
	2. with internal a-insertion	

An interesting question to be raised here is that of the possible cognation of the plural markers ***-i*** and ***-n*** with the determiners of the same shape – both reconstructed for PC by Newman (1990) and Schuh (1983) respectively. Frajzyngier (1997a) would appear to consider this question as already settled in favour of cognation. My own position is more cautious until we have more and harder comparative evidence with regard to how many different morphemes of this (or a similar) shape were around in PC grammar. As for ***-i***, for instance, one could immediately think of at least six candidates from modern Chadic languages of which only some may actually be cognate:

- determiner ("definite"?) – cf. Schuh (1983),
- noun plural marker – cf. Newman (1990),

morphology and between subsystems within nominal morphology in this paper will be only in passing rather than in any detail.

(6) Subsystem transfer involving verbal plurality in Chadic



4. Grammaticalisation and Reconstruction

Starting our exploration into Chadic linguistic history from pluractional verbs in modern Chadic languages, we begin by taking a closer look at the formatives reconstructed by Newman (1990) with more or less confidence; his list of formatives is given below under (9) with a number of modifications.[17] These modifications basically involve the recognition of "formative a-vocalisation" and the proposed tentative allomorphic distribution of the various markers of pluractionals.[18] The distinction in Chadic between "formative a-vocalisation" and

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- verb plural marker – as, for instance, in Muzgu and Munjuk,
- imperative (sg.) marker – cf. Newman (1990),
- subjunctive verb stem marker – cf. Newman/Schuh (1974) and Wolff (1979),
- verbal nominaliser – as, for instance, in Podoko and Xdi.

[17] Other modern pluractional formatives reconstructed by Newman (1990) which are not considered in this paper are

CVC-reduplication innovative in Hausa, frozen in Bade, restricted in Pero

full reduplication universal & iconic: found in Central-A (Margi, Mandara, Lamang, Daba)

Note that, since the following table is largely based on Newman (1990), the occurrence of ****-i*** as marker of verbal plurality is not included (cf. Frajzyngier 1997a: 214ff. for a critical appraisal of Newman's treatment of verbal plurality marking from a comparative point of view particularly regarding the "omission" of ****-i*** and an incomplete treatment of the marker ****-an***). However, the marker ****-tV*** occurs despite it's being identified as different (only "pluractional-like") by Newman himself (cf. also fn. 14).

[18] The notion of *formative a-vocalization* is considered to be quite useful for the diachronic study of Chadic languages (cf., for instance, Wolff 1983, 1984b). Diachronically, it belongs to the oldest stratum of the language family and reflects a typological situation largely comparable to the

"internal a-insertion" is required in order to be able to account for double formations as the following:

(8) Formative a-vocalization vs. internal a-insertion

	Ron-Daffo	**Dangaleat**
monomorphemic base	*ŗagot* 'throw'	*tapir-* 'help' *mat-* 'die'
formative a-vocalisation	*ŗagwăt* [pluractional]	*tápárí* [imperfective] *mata* [imperfective]
formative a-vocalisation* plus *internal -a- insertion	*ŗagwa-á-t* [habitative]	*tapà-a-re* [durative] *matà-a-we* [durative]

Table (9) offers a first approximation to a historical analysis of verbal plurality formatives in Chadic; the shaded areas may already represent domains in which a functional merger or subsystem transfer occurred at an early period in Chadic history. Note that there are other verbal markers of similar shapes, which might have played a role, like nominalizing suffixes for verbs (forming verbal noun/gerunds). All these are included in a preliminary fashion in the table below, and some hypotheses are advanced as to possible allomorphic distributions of some markers.

(9) Tentative historical analysis of verbal plurality formatives in Chadic

PC verbal plurality markers	**? allomorphic distribution of PLURACTIONAL**	**other PC categories within verbal morphology**	**possible transfer from PC nominal plurality**
formative ***a****-vocalisation*	"schwa verbs"		
internal ***a****-insertion*	non-"schwa verbs"		
C-reduplication *(pre-/suffixal)*	diconsonantal verbs		
infixal/suffixal *-k-	**monoverbs (*-k- > *-ɲ- ?!)**		**← nominal plural **-aki* ?**
suffix *-ay/*-aw	**monoverbs (*-y- < *-k- ?)**	**nominaliser **-i/y* ~ *-a-w ?**	
suffix *-d-			**← nominal plural **-d(i)* ?**
suffix ****-tV***		iterative	
suffix ****-an***		plural agreement	
suffix ****-i/*-a***		imperative	
suffix ****-unu***		imperative	

Semitic "root and pattern" system. "Internal a-insertion", on the other hand, is viewed as a still old but more recent device in Chadic languages and corresponds to morphological "infixation". One good reason to keep the two apart (and not lump them together indiscriminately as "internal-a") is the observation that the may cumulate, i.e. both occur together in one language; the resulting forms are synchronically different in terms of vowel length, cf. (8) and 6.1 below.

Cf. below for illustrations of some attested reflexes of PC suffixes, which may combine with other formatives, which the language may possess (examples, with the exception of Migama, from Newman 1990):

(10) Some attested reflexes of PC derivational formatives of verbal plurality ("iterative" & "pluractional")

branch	language	*-Tv	*-k-
West-A	**Pero**	additional pluractionals: *fundò* > *fundu-**t**-ò* 'cook'	
Bole Group	**Bole**	"repetitive": *'yor-**d**-ù wo* 'he stopped again'	Schuh (n.d.) *bid'aa* > *bi-**k**-d'aa* 'untie'
	Sura	frozen pluractionals: *mùut* > *mur-a-**p*** (<**mutat* ?) 'die'	
Central-A	**Dghwede**		in reduplicated continuous aspect: *à-bì-re-ba*>/*à-bì-re-bà-**ge*** frozen pluractionals: *ca* > *cə-**gè*** 'beat'
East-A	**Kera**	"iterative" (repetitive/habitual): *hàme* > *hàm-**t**-e* 'eat'	
	Kwang	additional pluractionals: *oge* > *og-**d**-e* 'call'	
	Tobanga	"répétitif/itératif" suffix ***–de***	
	Somrai	pluractional: *cawa* > *caw-**d**-a* 'balance'	
East-B	**Mukulu**	"frequentative": *wâldû* > *wâld-**ìt**-u* 'slaughter'	
	Migama		"imperfective", bi-radical verbs: *maat-* ~ *matt-* ~ *mátá-**kk**-á* 'die' *luw-* ~ *lòwò-**kk**-á* 'sow'

branch	language	*-ɗ-	*-ay/*-aw
West-A	Tangale	*ɗ'ib* > *ɗ'ibuɗ* 'cook'	
	Ron-Kulere		"habitative": *mot* > ***mótáy*** 'die'
	Ron-Bokkos		"habitative": *cu* > ***cwáay*** 'eat'
	Ron-Butura		"habitative": *wu* > ***waáy*** 'exceed'
West-B	Miya		additional to other formative (e.g. internal-***a***): *kàfə* > ***kàafâ*** 'send'
Central-A	Dghwede	monoradical verbs: *za* > ***zaɗ'a*** 'carry'	
	Podoko		pluractionals (with/without internal-***a***), may add repetitive/habitual meaning: *vəl* > *val(-**aw**)* 'sell', *tal* > ***talaw*** 'tough'
	Zulgo		*dzà* > ***dzàyà*** 'fall', *zəm* > ***zama*** 'eat'
	Daba		"durative": *pəm* > ***pəmay*** 'beat'
East-A	Lele		pluractionals: *al* > *al-**wi*** 'growl'
East-B	Bidiya	lexicalized: *law* > ***lawàɗ*** 'soften/become soft'	pluractionals, mono-/did-consonantal verbs: *laa* > ***leyèw*** 'pour', *tàl* > ***tàlàw*** 'see'
	Dangaleat		pluractionals, mono-/di-consonantal verbs: *té-* > *tiy**aaw-*** 'eat', *gìn-* > *gin**aaw-*** 'make'

Vis-à-vis the plethora of formatives, which are used in modern Chadic languages to indicate semantically similar concepts in the domain of verbal plurality, one wonders whether these do not – originally, in PC or even Pre-PC periods – represent different, albeit semantically similar, categories, which are related to each other through grammaticalisation chains. Quite possibly, the "old" Pre-PC system was already characterized by an inherited cross-over of formatives in the domain of "plurality" between inflectional nominal and (derivational) verbal morphology – or, in other words, plural marking was independent of category of speech, at least as far as the modern distinction of determiners, nouns and verbs was concerned.[19] The "new" system (post-PC) was then characterized, among

[19] Incidentally, this rather simple hypothesis would account for a number of observations which otherwise could cause authors to take great pains in order to establish series of mutually supportive claims. One might wish to claim that plurality in Proto-Chadic was, first of all, a syntactic category (of the noun phrase) rather than an inflectional category (of the noun itself), and "that coding of plurality was deployed only with determined arguments" and that "when the plural verbal form occurred with a determined noun phrase, both of these means could have been considered as encoding the plurality of the argument" which, finally, receives support through a language acquisition process by which "a child, when confronted by the two forms that occur together when the noun phrase has a plural interpretation, may reanalyse any of the two forms as a sole marker of plurality" (Frajzyngier 1997a:210f.).

others, by further re-grammaticalisation crossing over the domains of derivational and inflectional verbal morphology, as to be outlined in the following sections of this paper.

5. Proposed grammaticalisation chains

The grammaticalisation chains originally proposed in Wolff (2000b) and repeated here connect

- the Proto-Chadic determiner subsystems (viz. demonstratives, previous reference markers, definite markers),
- grammatical encoding of number, i.e. the overt marking of **plurality** (both in nominal and verbal morphology), and
- grammatical encoding of situation-internal time, i.e. aspect.

As graphically represented in (11) and (12) further below, the proposed grammaticalisation chains involve

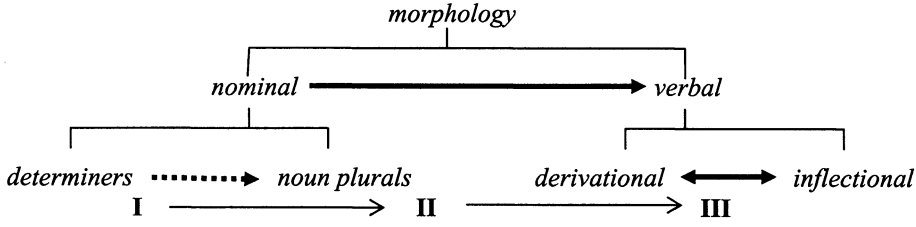
1. most PC determiners as reconstructed by Schuh (1983; with the sole exception of ***t*** = marker of feminine sg.);[20]
2. all PC nominal plural markers as reconstructed by Newman (1990; with no exception);
3. both inflectional ("plural") and derivational ("pluractional") markers of verbal plurality; and
4. a particular connection between derivational verbal plurality marking and inflectional verbal aspect marking.

At variance with Frajzyngier's multidimensional model (cf. *Excursus* below and the two graphic representations therein combined), I am proposing grammaticalisation chains within a uni-dimensional model, which would appear to be quite conservative in terms of grammaticalisation theory, but challenges received wisdom with regard to the generally accepted uni-directionality of grammaticalisation by proposing highly localized instances of bi-directional grammaticalisation. Under (11), the semanto-syntactic categories are identified which take part in the grammaticalisation of plural markers as initially proposed in Wolff (2000b). Note that the grammaticalisation path from "determiners" to "noun plurals" as indicated by the broken line of the arrow is taken for granted as expected in the light of ample evidence from cross-linguistic grammaticalisation studies. Quite likely and incidentally, the direction from left to right in (11)

[20] Unless, however, we postulate cognation of the feminine sg. marker *t (reconstructed by Schuh) and the iterative marker *tV (reconstructed by Newman) – a step which, at the time of writing, I am very reluctant to take although elsewhere I have accepted re-grammaticalisation of PC *t(V) "feminine sg. marker" from nominal into verbal morphology as in Hausa efferential formations (Wolff 1993: 384f.).

represents the probable relative chronology of the diachronic processes (indicated by I ⇒ II ⇒ III):

(11) Directions and chronological sequence of grammaticalisation in the domain of plurality in Chadic

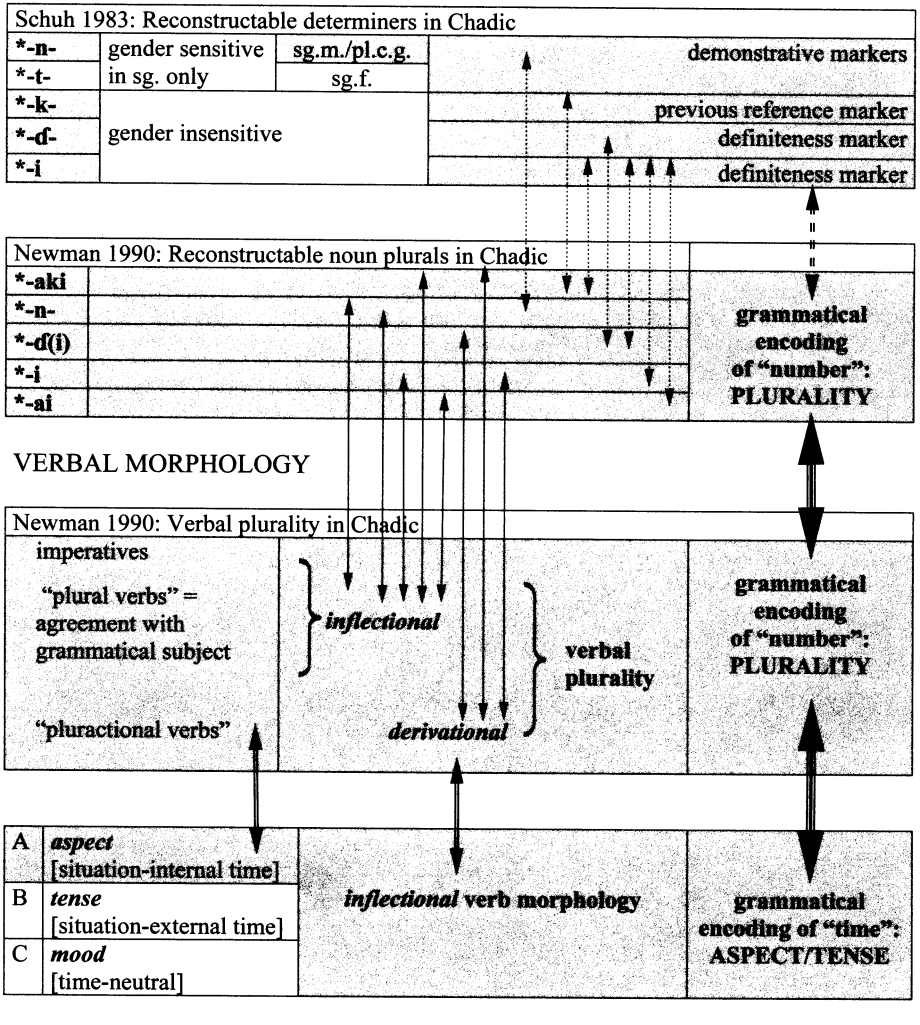


The details of the striking phonological similarity of the markers involved are made explicit under (12) below and are related to R. Schuh's (1983) and P. Newman's (1990) seminal comparative works on reconstructable Chadic determiners and plural markers respectively in much the same way, incidentally and independently, as in Frajzyngier (1997a). [21] Note that the arrows and shadowed categories in (12) should be read simply as "diachronically linked as possible cognates".[22]

[21] The chart in (12) has been modified since its first presentation in Wolff (2000b), not the least by following Frajzyngier's analysis for Muzgu and Gera (1997a: 215 [Muzgu], 227 [Gera]), which I had not been aware of then.

[22] In the chart below, I have linked Schuh's PC determiner ***-i*** **to** several of Newman's noun plural markers (****-i, *-ai, *-aki, *-d(i))*** for the sake of showing "possible" cognation, although I am fairly convinced that PC ****-i*** was a noun plural marker in its own right which only accidentally resembled a determiner. It will be useful to watch out for potential reflexes of formations where these two different markers co-occur within the same reconstructable noun form marked both for "definite + plural".

(12) Grammatical markers and categories possibly involved in grammaticalisation chains in the domain of plurality in Chadic

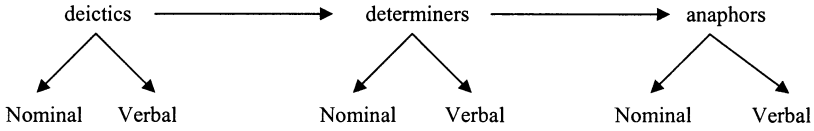


***Excursus*: Grammaticalisation of number in Chadic (Frajzyngier 1997a)**

Frajzyngier's most recent hypothesis on "the origin of segmental markers of plurality" is made explicit in the following graphic representation, which,

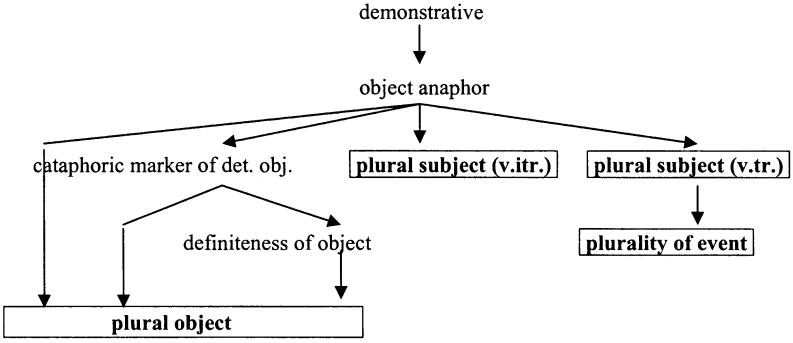
interestingly, involves two dimensions with regard to the directionality of grammaticalisation, which are graphically represented, by the horizontal and the vertical arrows. Both the graphic representation ("Figure 1") and the accompanying commentaries remain rather vague (1997a: 198f.):

> "The plural markers developed from one or more elements of the grammaticalisation chain that included deictics, demonstratives, anaphors, and pronouns. Each element in the chain may be a source of nominal and verbal plural markers, as illustrated in Figure 1."



> "Figure 1 does not imply that the same morphemes necessarily become plural markers in nouns and verbs, nor does it imply that the grammaticalisation of the two types of plural markers took place at the same time. It is quite possible that different elements in the grammaticalisation chain gave rise to different plural markers, and it is quite possible that different plural markers developed at different times."

Later in his paper, Frajzyngier proposes six "chains of grammaticalisation involving verbal plural in Chadic" (1997a: 217), which I here take the liberty to (hopefully correctly) compound into one graphic representation:



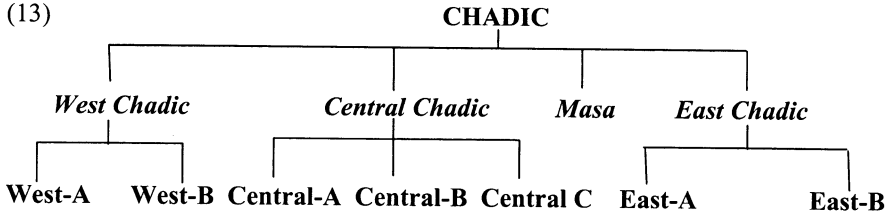
Note that the boxed markers represent the final stages of grammaticalisation chains attested in Chadic languages.

In addition to many details of Frajzyngier's particular language analyses, I also do not subscribe to some of his basic assumptions about plurality in Chadic. Rather following Newman (1990), I not only accept verbal plurality as an ancient category in Chadic (and Afroasiatic), but also in its various subsystems: grammatical agreement, pluractional, imperative, and a separate iterative-repetitive.

6. Grammaticalisation chains and Chadic sub-classification

The Chadic language family is now generally accepted to have four branches, three of which with at least two sub-branches each (cf. Newman 1990 for a more recent presentation of Chadic sub-classification).[23] This sub-classification rests on lexical comparisons involving the observation of regular sound changes.

(13)



The following table lists the languages, which are mentioned in this paper according to that sub-classification by branch, sub-branch, and group.

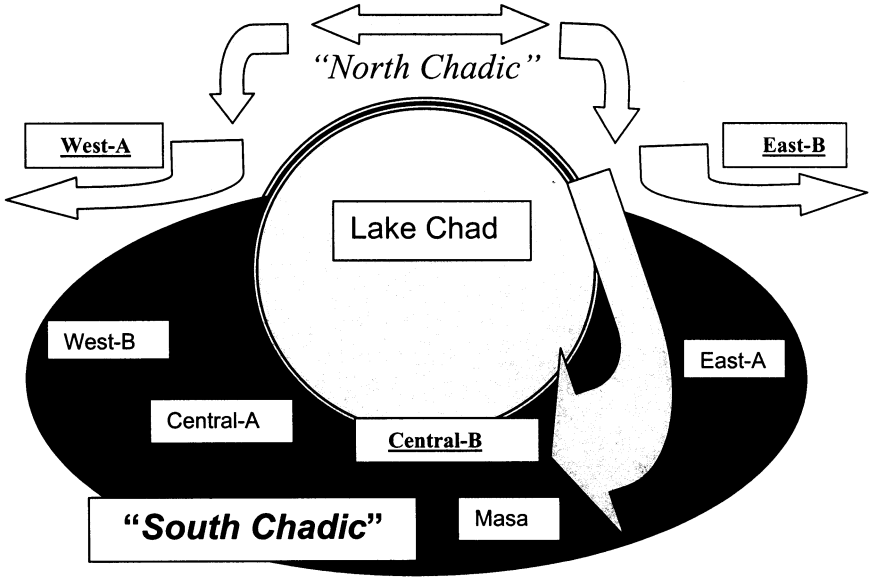
(14) Chadic language sample by branches and groups

West Chadic	**A**	1	Hausa	**Central Chadic**	**A**	1	Ga'anda
		2	Bole, Kanakuru, Pero, Tangale			2	Bura, Margi
		3	Angas, Sura			3	Higi/Kapsiki
		4	Ron: Butura, Daffo, Kulere, Sha			4	Dghwede, Mandara, Lamang, Podoko
	B	1	Bade, Ngizim			5	Zulgo
		2	Miya, Pa'a			6	---
		3	Saya			7	Daba
East Chadic	**A**	1	Somrai			8	Bachama, Gude
		2	Lele, Tobanga		**B**	1	Buduma, Musgu
		3	Kera, Kwang			2	---
	B	1	Bidiya, Dangaleat, Migama, Mubi		**C**	1	---
		2	Mukulu	**Masa**		1	Zime-Mesme
		3	---				

[23] Compared to his earliest sub-classification of Chadic when Newman/Ma introduced the terms "Plateau-Sahel" and "Biu-Mandara" for the then two major divisions within the family in 1966, Newman later substituted the term "Plateau-Sahel" by "West" and "East", but retained "Biu-Mandara". In my own work, I have long since replaced "Biu-Mandara" by "Central". In this paper, I will re-introduce Newman/Ma's old term "Plateau-Sahel" and use it quite differently, namely for a historically relevant subdivision of Chadic which unites the ancestral pre-cursors of only some (!) of today's "West" and "East" Chadic languages.

When we base sub-classification on grammatical comparisons, however, the different nature of the selected criteria tends to lead to different sub-classifications. In the following section, it is the proposed grammaticalisation chains in the domains of verbal plurality that are chosen as criteria for sub-classification. Also and in a corroborating manner, this will link up to the ecology and history of the wider Lake Chad area where most of the Chadic language are spoken until this day.

(15) Map of assumed migrations of "North Chadic" speaking groups due to ecological (desertification) and population pressure (Kanuri-Kanembu migrations and territorial expansions)



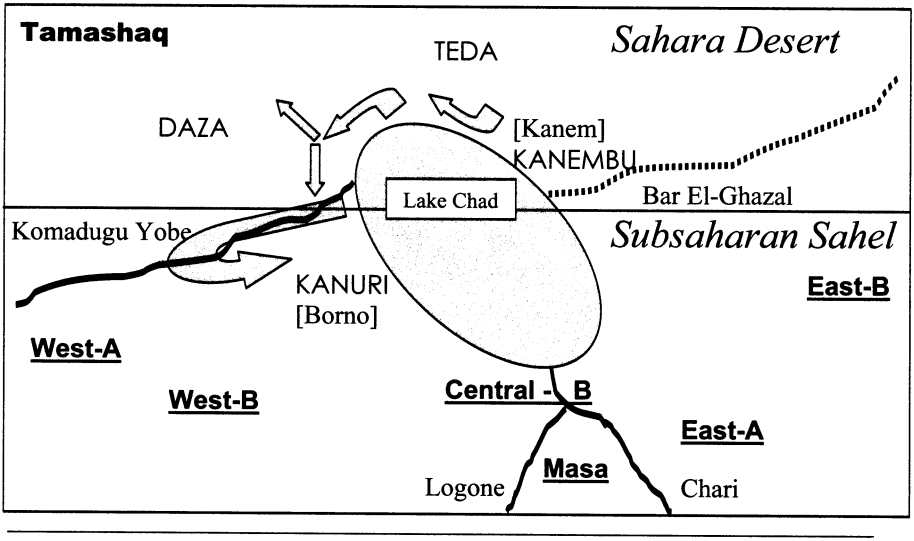
It is assumed that, before drastic ecological changes occurred and long before speakers of Saharan languages (particularly the Kanuri-Kanembu) began their south- and westward migration, the northern shores of Lake Chad were inhabited by speakers of Chadic languages – much as its southern and eastern shores were until quite recently (given the much larger surface of the Lake in past centuries and millennia). It is further assumed that these Chadic speakers shared in a PC dialect sub-continuum, which we could aptly call "North Chadic".[24] Also, a

[24] These "North Chadic" populations would have been in contact with the people in a "greener" Sahara to their north (some of which would have been speakers of Afroasiatic languages,

"South Chadic" dialect sub-continuum existed embracing the Lake at its southern shores.

With extreme desertification affecting their original habitat and with the closing in of Saharan language speakers, "North Chadic" speakers were forced to migrate: Their only way was to move southward around the Lake – either along the eastern or the western shores! And if there was not enough space for all of them, some would have been forced away from the vicinity of the Lake altogether – either westward or eastward, following the river beds of *Komadugu Yobe* to the west, and the *Bar El-Ghazal* to the east. With some more ecological force pushing them further south, we should not be surprised then to find offsprings of the "North Chadic" populations and their languages more than a thousand kilometres apart today, i.e. near the Central Nigerian Plateau in the west, and the Wadai mountains of Central Chad in the East.

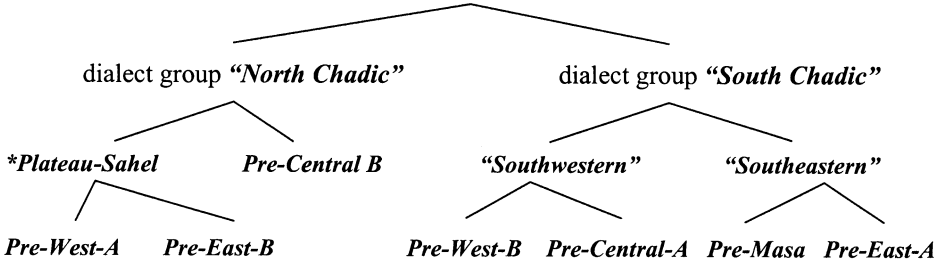
(16) Map of present distribution of the branches & sub-branches of Chadic in relation to Lake Chad, showing the approximate desert/sahel division line & Chadic's northern linguistic neighbours, and indicating assumed expansions of speakers of Saharan languages, particularly the Kanuri migration from Kanem to Borno.



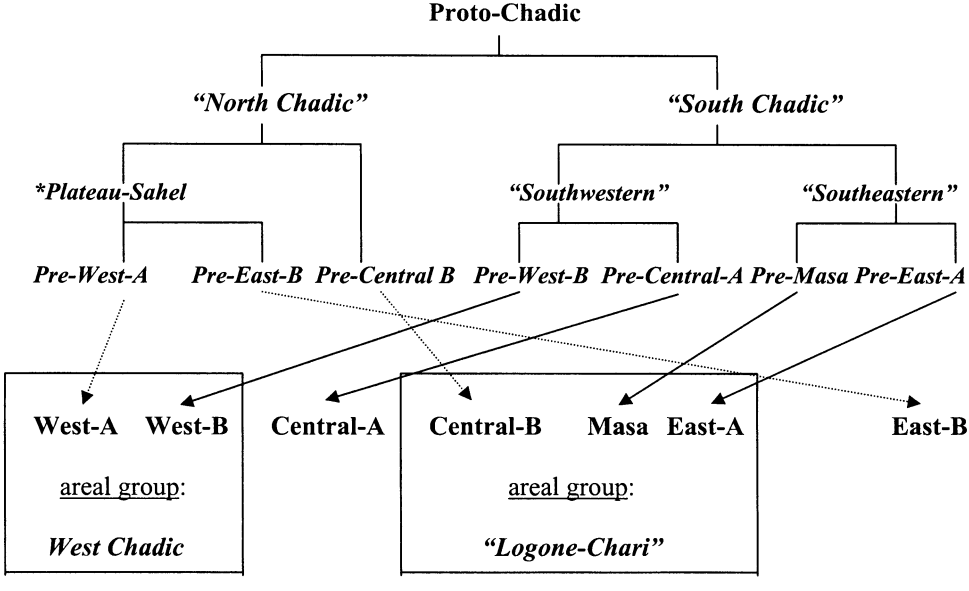
presumably, although the area is now inhabited almost exclusively by speakers of Saharan languages). I mention this in order to highlight the geographic position of "North Chadic" as being the closest of all Proto-Chadic dialects to the rest of Afroasiatic (Proto-Berber, Pre-Proto-Semitic, ...) – if the homeland of Afroasiatic was to be seen in what is now covered by the Eastern and Central Sahara. This neighbourhood could then be taken to explain why "North Chadic" shared and maintained certain features (e.g. "consonant gemination") with some other Afroasiatic languages, but not with their "South Chadic" sisters!

The pre- and post-migration scenarios are represented in the following tree diagrams.

(17a) **Assumed Proto-Chadic dialect chain**



(17b) Post-migration **areal regrouping** of PC dialect groups:



This migration scenario would exactly depict the historical background of a possible and plausible diachronic analysis of pluractional verb stem formation in Chadic. If we interpret our Chadic data[25] in front of this background, the following diachronic linguistic scenario would explain the present-day geographical distribution of linguistic facts. The linguistic criteria on which the

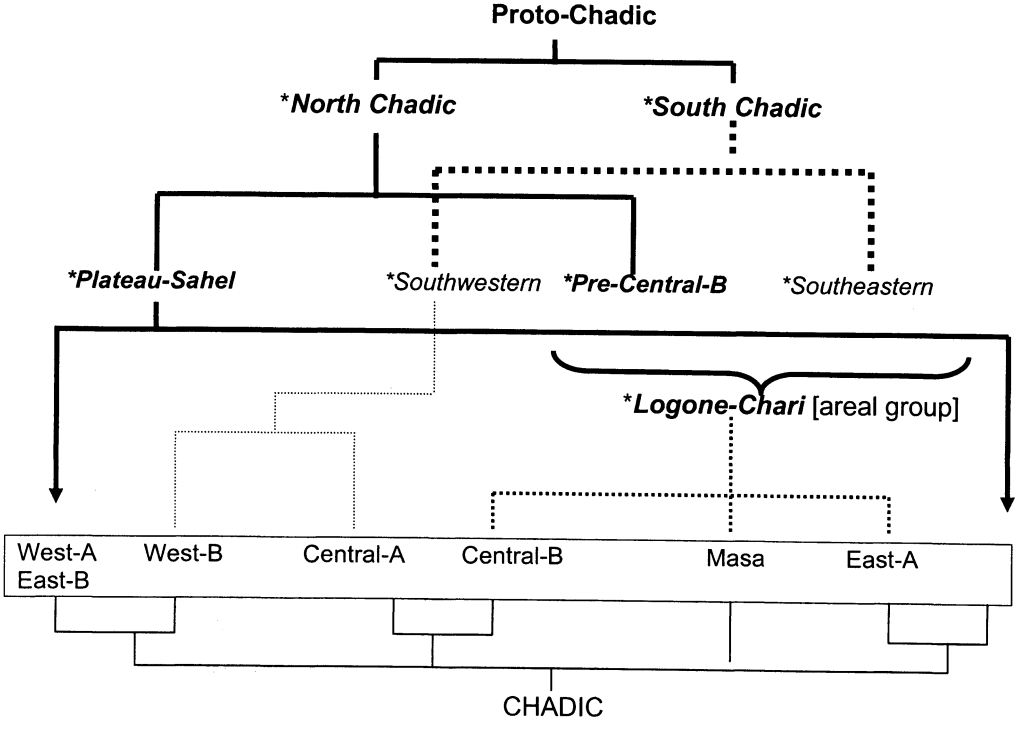
[25] Data from about 40 languages have been taken into account, i.e. between 30-40% of the estimated total of 120-140 members of the Chadic family.

scenario is based are the following, which we interpret to be either shared innovations or linguistic interferences due to new language contact situations involving mainly Chadic languages, which originally belonged to different peripheral sections of the Proto-Chadic dialect continuum. Our diachronic analysis is, therefore, based on observations regarding

- the **original distribution** of reconstructable pluractional formatives,
- **loss** of reconstructable pluractional formatives,
- intra-Chadic inter-dialectal **borrowing** of reconstructable pluractional formatives,
- **functional re-distribution** of reconstructable pluractional formatives to mark different categories, and/or
- **fossilisation** and total loss of the "pluractional" category.

The historio-linguistic scenario can be presented in terms of subsequent stages.

(18) Proposed sub-classification of Chadic based on a diachronic analysis of grammaticalisation chains in the domain of verbal plurality (upper part) & received sub-classification based on lexical reconstructions (lower part)



In the following subsections, I will outline the linguistic scenario on which this particular sub-classification of Chadic is based.

6.1 Proto-Chadic Pluractionals

As a shared characteristic feature, all PC dialects are assumed to have had a productive pluractional category. The availability, choice and combination of formatives were governed by PC dialect differences plus phonotactic (root structure) conditions similar to those still found in some present-day languages. I tentatively offer the following diachronic hypotheses.

1. Prefixal and suffixal reduplication did not co-occur in the same PC dialect:
   - NORTH CHADIC dialects strongly preferred **suffixal** reduplication;
   - SOUTH CHADIC dialects strongly preferred **prefixal** reduplication.
2. **Internal-a** (as reconstructed by Newman 1990) does not represent a uniform marker, quite contrary to our expectations, which are shaped by received Afroasiatic wisdom. As I have long since proposed, we distinguish between
   - **formative a-vocalisation** as a unique pluractional marker which was available to all PC dialects and was limited to "internal schwa verbs";[26] and
   - **internal-a insertion**, which was an additional (redundant/pleonastic) marker, which some languages would use to accompany the reduplicative or suffixal formations or "strengthen" the formative a-vocalisation.[27]
3. No clear picture emerges concerning possible reflexes of the suffix(es) of the shape ***-ay/*-aw** (including synchronic **–a**). If they were at all pluractional formatives in PC, my hunch is that they could have been originally restricted to mono-radical verbs.[28]

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[26] "Internal schwa verbs" are verbs whose internal lexical vowel(s) are either phonemic schwa (if the proto-language had such a phoneme) or contained no internal phonemic vowel at all; we can symbolise their base structure as *CəCə/V ~ *CC(V). Tri-consonantal schwa verbs would have at least one vowel slot filled by schwa or zero, e.g. *CəCəC(ə/V) ~ *CCC(V), *CVCəC(ə/V) ~ *CVCC(V), *CəCVC(ə/V) ~ *CC(V)C(V).

[27] It is this "redundant"/"pleonastic" nature of *internal-a* in Chadic, also seen in noun plural formations, which causes analytical problems as to which subsystem, nominal or verbal, to reconstruct it for. Further below I will advance the hypothesis that this "internal-a" was probably one of the earliest re-grammaticalisation cases in Afroasiatic linguistic history.

[28] On the other hand, this suffix may also be the reflex of a different PC stem formation altogether. It could be a "durative/habitual", like in present-day Ron, Daba, and Podoko. Alternatively, it could be a nominalizing suffix to form verbal nouns, which – characteristically – were and still are widely used in periphrastic constructions, which are traditionally referred to in Chadic studies as manifestations of "imperfective" aspect (with linear ~progressive ~ durative, sometimes habitual,

For PC, I propose roughly the following allomorphic systematics illustrated in (19).

(19) Proposed allomorphic systematics of pluractional marking in Proto-Chadic

PC dialects	***-ay/*-aw**	**a-vocalisation**	***C_1V_1-**	***-C_f**
NORTH	mono-radical verbs	schwa verbs	---	other verbs
SOUTH	***C(ə/V)***	***CəCə/V ~ CC(V)***	other verbs	---

The pluractional formatives could further enter combinations with **internal a-** insertion, which would yield something like the following surface structures, which are still found in some of the modern Chadic languages and are illustrated next.[29]

(20) Combinations of pluractional formatives with internal a-insertion:

simple formations	***-ay/*-aw**	**a-vocalisation**	***C_1V_1-**	***-C_f**
complex formations with **internal –a-**	***-a-ay/*-a-aw**	***-aa-**	***C_1-a(a)-**	***-a(a)-C_f**

6.2 "North Chadic" vs. "South Chadic": Innovations in Pluractional Formation

"North Chadic" is postulated as the common proto-language for languages found today in the sub-branches West-A, Central-B, and East-B. These languages are now found, on the one hand, closest to Lake Chad (i.e. those belonging to the sub-branch Central-B), and at the very western and eastern periphery on the other (i.e. West-A and East-B)![30] Innovations in North Chadic pluractional formation are

- *internal consonant gemination*;[31]

---

functions). Cf., for instance, Wolff (1987) for a discussion of synchronic "imperfective stems" in Chadic as possibly resulting from both pluractionals and verbal nouns.

[29] On the other hand, languages which do not (or: no longer) contrast vowel length, would neutralise these distinctions and make it difficult if not impossible for us to know whether we are dealing with reflexes of "base" level (lexical) or "stem" level (post-lexical) polymorphic formations.

[30] Interestingly, this totally independently arrived at regrouping of Chadic languages in terms of "North Chadic" dialects of PC coincides largely with the earliest assumptions of genealogical relationship in the Lake Chad area, i.e. Westermann's "Hausa-Kotoko" group of the 1930s and later Lukas' "Chadohamitic" group of the 1950s, which were both heavily based on internal typological criteria like, for instance, the mere existence of overt grammatical gender marking, but also other grammatical features.

[31] Note that we find reflexes of two different types of internal gemination which, however, overlap and thereby create some confusion:

- preference[32] for *suffixal *-C_f reduplication*;[33]

C_2 gemination proper (i.e. even in verbs with more than two consonants where C_2 is not the final root consonant), no further combination with internal-a appears to be possible.

West-A	East-B
Hausa "frozen" (C_2 = mostly a sonorant): *fal-l-àsaa* 'shame s.o.' *din-n-ìƙaa* 'fill with smoke' *tsàw-w-alà* 'become serious' Arabic origin: *bayyànaa* 'explain' *dawwàmaa* 'endure' *kammàlaa* 'finish'	**Mubi** *lèlè'-e / làl-l-à'je* 'taste'
Pero *ligunò / lig-g-unò* 'answer' *daaf-ò / daf-f-ufò* 'apply cream' *cuuk-ò / cuk-k-u-ò* 'spread water'	

Final consonant gemination (which in many instances, but accidentally so, may be C_2!); some languages combine this with either formative a-vocalisation or internal-a insertion.

West-A	Central-B	East-B
Bole *ɗolu / ɗòl-l-u* 'swallow' alternatively with *C_1V_1- reduplication: *pataa / pat-t-a ~ pa-patta* 'go out' *salu / sà-sàl-l-u* 'slash'	**Buduma** final C = r~l : *nárì / nár-r-ì* 'carry away' *hàgárá / hàgár-r-á* 'mount' with internal –a insertion: *həli / h-a-əl-l-i [hʌlli]* 'sow'	**Migama** "imperfective" with formative a-vocalisation (triconsonantal roots): *kútùm- / kótóm-m-* *(< *kwatwam-m-)* 'wrap' with dummy C_3 and internal-a insertion (di-consonantal roots): *pan- / pan-a-kk-* 'build'
Kanakuru *murì (*mut-) / mutè (*mut-t-)* 'die' *goowè (*goop-) / goopè (*goop-p-)* 'pass by'		**Mukulu** *ziiɗa / zid-ɗ-e* 'marry'

[32] I deliberately speak of "preference" here because I consider the available data as not sufficient to postulate a watertight complementary distribution between the two PC dialect groups. Quite likely, the PC dialects should be viewed as forming a dialect chain with degrees of mixed occurrence of "typical" North and South Chadic features. Note, for instance, the isolated occurrence of prefixal reduplication in East-B Mukulu (1 example only) and the somewhat isolated occurrence of (productive!) suffixal reduplication in two languages of the Mandara Group (Lamang, Dghwede). It is hard to know whether the closely related Central-A languages Lamang and Dghwede have innovated suffixal reduplication, or whether this has some historical significance of yet uncertain dimension.

[33] Some languages pleonastically insert **internal -a** to the left of the reduplicated stem-final consonant:

Note that the prefixal reduplication, which is found in some but not all modern West-A daughters of „North Chadic" dialects, is viewed as borrowing from now neighbouring West-B languages, which originate from "South Chadic" dialects of PC. Likewise, West-B languages like Bade and Ngizim have borrowed some suffixal reduplication from West-A languages![34] Note also that the eastern modern daughters of North Chadic dialects have drastically reduced and restructured their inherited pluractionals – a likely areal feature that they share with neighbouring "Logone-Chari" areal group languages within Chadic!

West-A			**Central-B**	
Hausa "frozen"; with internal –aa-:			**Buduma**	
	sùl-aa-l-à	'warm up'	*kawe/kawe-w-e*	'roast'
	kwàr-aa-r-à	'stalk'	*hobi / hobi-b-i*	'herd'
Pero	*daaf-ò / daff-uf-ò*	'apply cream'		
	cuuk-ò / cukk-uk-ò	'spread water'		
Ron: Sha ***"habitative"; with internal –a-:***				
	bàk / bàk-à-k	'break'		
	môt / mót-ô-t	'die'		
	lîg / lyág-â-g	'lick'		

West-B interference from West-A			
Bade			
only Ca(a)CV verbs:	*gàfu / gàaf-àf-u*	'catch'	
	tàahlu / tàahl-àhl-u	'break'	
frozen: *CCV; with internal-a:			
	à skw-à-kw-u	'spend time'	
before suffix:	*kàr-mu / kàr-à-r-mu*	'chop'	
	càp-tu / càp-à-p-tu	'gather'	
Ngizim			
with internal –a:	*gànu / gàn-à-n-u*	'get'	
	vàrku / vàrk-à--k-u	'shoot'	

[34] If, however, for some independent reason we need to assume that North Chadic dialects used both prefix and suffix reduplication, then we could attribute the non-occurrence of prefix reduplication in East-B languages to areal influence from neighbouring "Logone-Chari" areal group languages within Chadic.

6.3 "Proto-Plateau-Sahel":[35] Innovations Affecting North Chadic Pluractionals

The North Chadic dialects eventually split into two groups: "Pre-Central-B" and "Proto-Plateau-Sahel". "Pre-Central-B" probably migrated first, leaving the homeland on the northern shores of the Lake. The Buduma retired to the floating islands and eastern shores, their fellows moved on to the southern shores and the land between the two rivers, Logone and Chari. Here they are still found today as languages of the Central-B sub-branch. Left behind on the northern shores for quite some time were the "Proto-Plateau-Sahel" groups, they became ancestral to today's West-A and East-B sub-branches. The major innovation concerning pluractionals was their "grammaticalisation" in terms of partial subsystem transfer from derivational to inflectional grammar. More precisely some, in some languages even all of the pluractional formatives were re-analysed and re-assigned functionally to mark "***extensive aspect***" (formerly referred to as "imperfective").

6.4 "Proto-Logone-Chari": Innovations Affecting South Chadic Pluractionals

Within South Chadic, its Southeastern dialects (Pre-Masa & Pre-East-A) became separated from their Southwestern sisters (Pre-West-B & Pre-Central-A) by a kind of wedge, which the intrusion of the North Chadic Pre-Central-B group created (cf. maps above). The modern languages stemming from these old Southeastern dialects still live in fairly close neighbourhood and are geographically separated from East-B and Central-A languages. The Masa group languages, however, have thereby become direct neighbours to Central-B languages. It is not surprising, therefore, to observe areal features, which are shared by Masa, East-A and Central-B languages. This areal complex is referred to as "Logone-Chari" comprising of both former Southeastern and North Chadic (Pre-Central-B) languages. With regard to pluractionals, the languages of this new "Logone-Chari" areal complex underwent drastic *fossilisation* of the pluractional category with desemanticization in some and total *loss* in other languages, including loss of the characteristic formatives. [36] Today, the pluractional subsystem as such is no longer productive. We observe only a few fossilized pluractionals in each of these languages.[37] Note that in Buduma, quite exceptional

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[35] The label "Plateau-Sahel" revokes the first post-Greenberg sub-classification of Chadic by P. Newman and R. Ma (1966) and pays homage to the two authors. Note, however, that their *Plateau-Sahel* corresponded largely to present-day West Chadic & East Chadic. In later works, P. Newman gave up the term *Plateau-Sahel* and with it the idea of a common node for West and East Chadic in the genealogical tree. As pointed out in fn. 23, I am employing the term here in a related but different sense.

[36] Other – rarer – suffixes survive or have been redesigned, e.g. in Lele **–wi**, and Somrai **–d/b-**.

[37] Traces of prefixal ***C_1V_1- reduplication** can be seen in the initial consonant devoicing in Kwang, Kera and Tobanga (East-A) and the Zime-Mesme cluster (Masa Group); cf. Wolff (1985, 1986). Occasionally, ***C_1V_1-** reduplicated forms have spread into the neighbouring Central-B languages, resulting in lexicalised occurrences in, for instance, Muzgu and Buduma:

for a Central-B language, the pluractional has remained quite productive, making use of several formatives which reflect the double origin of both its North Chadic (= genealogical) and South Chadic (= areal) sources, used in addition to general inherited formatives from Proto-Chadic times:

(21) Double origin of Buduma pluractionals

		Buduma	
Common PC heritage	suffix ***-aw**	*ci / c-o*	'catch'
		fi / f-o	'beat'
	inernal-**a** insertion	*həm / haəm [hʌm]*	'eat'
		həli / haəlli [hʌlli]	'sow'
North Chadic heritage	C_f gemination	**final C = r~l :**	
		nárì / nárrì	'carry away'
		hàgárá / hàgárrá	'mount'
	suffixal C_f reduplication	*kawe/kawe-we*	'roast'
		hobi / hobi-bi	'herd'
		taba / taba-ba	'change'
South Chadic interference	prefixal reduplication	*təraku / tə-təraku*	'tear'
		lan / la-lan	'fill out'
		with internal –a:	
		tu / ta-du	'buy'
		tə / ta-də	'pound'
		fi / fa-bi	'beat'

7. Typology of re-grammaticalisation cases in the domain of verbal plurality

In this section, the linguistic scenario summarized in the previous section of the paper will be described and illustrated with data from all branches of Chadic.

7.1 Emergence of "extensive" aspect as a new verbal aspect category

One major innovation of Proto-Plateau-Sahel dialects was the creation of "**extensive aspect**" achieved by diagnostic re-grammaticalisation from

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Musgu	*tì-tìmi*	'taste'
Buduma:	*təraku / tə-təraku*	'tear'
	lan / la-lan	'fill out'

Traces of **internal-a** (or: external-a of the **-ay/-aw** suffix?) can be found in Zime-Mesme mono-radical verbs. Fossilized formations of either internal-**a** insertion or formative **a**-vocalisation are also found in Central-B Muzgu (adverbs tend to have **a**-vocalisation, whereas etymologically related verb stems have an overall high-vowel vocalisation) and Buduma (some mono-radical verbs):

Muzgu	adv. *tam*	verb *tìtìmi*	'taste'
Buduma	*tu* > *ta-du*		'buy'
	tə > *ta-də*		'pound'
	fi > *fa-bi*		'beat'

derivational to inflectional verb morphology. More precisely, some pluractional formatives, in some languages even all of them, were re-analysed and re-assigned functionally to mark "extensive aspect". I am here suggesting the term "extensive aspect" as a cover term for inflectional categories, which share the semantic notion of **extension in time**. This new term has two advantages:

a. It avoids the highly misleading if not totally inadequate or even false, term "imperfective aspect" which has hitherto been widely used to label this category.[38]
b. The proposed term highlights the common semantic denominator underlying the various language-specific usages of this category, i.e. "extension in time" as implied in descriptive terms like *frequentative, iterative, repeated, habitual, durative, prolonged, sustained action*.[39]

Note that prefixal reduplication (which was probably not a feature of the old North Chadic dialects anyway) does not appear to have been redesigned to mark extensive aspect in any Chadic language.[40] In some languages, pluractionals and extensive aspect coexist side by side using basically the same inherited formatives (like in Ron-Daffo, cf. also East Dangaleat), other languages have totally given up pluractional as a productive category after the sub-system transfer to "extensive aspect" had taken place. Sometimes new formatives, for instance, full reduplication and a peculiar CVC-reduplication have developed. In many instances it is impossible to know which formative or combination of formatives, lie behind the various "imperfective", "habitative", "habitual", etc. stems which share not only a morphological extension but also the notion of "extension in time" of the verbal action.[41] The following table illustrates the various formatives occurring in extensive aspect manifestations across "New Plateau-Sahel" languages.

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[38] The term "imperfective" immediately but unhappily and unnecessarily evokes the notion of a binary contrast of "perfective" vs. "imperfective" which is by no means implied in the diachronic grammaticalisation of "extensive aspect" from pluractionals in Chadic. Likewise, the otherwise fairly appropriate and better known term "linear" aspect would evoke yet another irrelevant binary contrast with "punctual" aspect. I consider it to be quite important to insist that "extensive" aspect does not take part in any kind of intrinsic aspectual dichotomy!

[39] Even their reading as describing *intensive action* can be understood as meaning *intensity* of action as achieved through *repetition* of action.

[40] I hereby explicitly disregard the one example from Mukulu (East-B): *niirè / ni-niirè* 'push'. "In Mukulu ... only one example of a pluractional formed by prefixal reduplication was found. It is hard to know whether this represents a real archaism or whether it is an isolated example of no significance." (Newman 1990: 63)

[41] H. Jungraithmayr, who had published several articles on the issue, occasionally referred to them in a semantically and functionally neutral way as "long stems" as opposed to "short stems", resting the distinction on the presence or absence of added phonological/morphological material. This useful formal distinction, however, becomes obsolete when more than one "marked" stem form part of the aspect system.

(22) "Extensive" Aspect Formations in New Plateau-Sahel Using PC "Pluractional" Markers

	West-A	East-B
C_r-gemination		**Migama** *with formative a-vocalisation:* *kutum- / kótómm-á* 'wrap' plus dummy C_3 for bi-radical verbs: *maat- / matt- / mátá-kk-á* 'die' *luw- / lòwò-kk-á* 'sow'
		Mubi with *–ay/*-aw suffixation: *bír- / bírr-à* 'fly' *zèɗ'î / zìɗɗ-áà* 'grow old'
C_r-reduplication	**Ron-Sha** with petrified formative a-vocalisation *(*mut > *mwat > mot)*: *mot- / mót-ôt* 'die'	
internal-a = formative a-vocalization & a-insertion	**Ron-Kulere** duk- / dwá-á-k *'beat'* **Ron-Daffo** *mot- / mwa-á-t* 'die' **Ron-Bokkos** *lûl / lwá-à-l* 'ask'	**Mubi** *filik / filá-a-* 'exchange' **Dangaleat** *"imperfective":* tapir- / tápárí *'help'* "durative": *tapir- / tapà-a-re* 'help'
suffix –ay/-aw	**Hausa** *dáfà- /dáfàa-wáa* 'cook' *fìtá / fìtá-a* 'go out'	**Migama** *ti- / tée-wá* 'eat'
	Kanakuru *pór- / pór-má* 'get out'	**Jegu** *maad- / maad-a* 'ask'
	Bole *sùrr- / súrr-à* 'fry'	**Dangaleat** "imperfective": *t- / tá-a* 'eat' *mat- / mat-a* 'die' "durative": *t- / tiyà-awe* 'eat' *mat- / matà-awe* 'die'
	Karekare *càw- / càw-áa* 'catch'	**Mubi** *bír- / bírr-à* 'fly' *zèɗ'î / zìɗɗ-áà* 'grow old'
	Ron-Kulere mot-/ mot-ay *'die'* **Ron-Sha** *nyà / nyà-y-ày* 'sleep'	

7.2 New Plateau-Sahel: Parallel Formations in Verbal Derivational and Inflectional Morphology

In the newly established Plateau-Sahel group of languages, PC high confidence formatives of pluractionals co-occur both in their original derivational function and in their re-grammaticalized inflectional function. In West-A Tangale and the languages of the Ron Group as well as in East-B Dangaleat and Mubi, for instance, the same formatives, which are used for the innovated extensive aspect, we also find in their original derivational function in other languages of the group.

(23) Verbal derivation ⟹ Verbal inflection in New Plateau-Sahel languages

	derivational morphology: pluractional	**inflectional morphology: "extensive" aspect**
formative a-vocalisation	***lexicalised*: Ron-Daffo;** ***internal schwa verb*: Miya, Ga'anda, Lamang, Podoko, Mandara, Zulgo, Gude**	
internal a-insertion	***lexicalised*: Angas;** ***generalized*: Miya, Saya, Bidiya (*polyradical verbs*)**	**➔ *habitative:* Ron Group** **➔ *durative-repetitive:* Dangaleat** **➔ *imperfective:* Mubi**
C-reduplication (pre-/suffixal)	(a) prefixal ***heavy 1st syllable verbs*: Bole** ***frozen*: Hausa, Ron, Ngizim; Margi, Kapsiki, Mofu-Gudur, Muzgu; Kera, Kwang, Tobanga; Mukulu;** ***generalized*: Bade, Pa'a, Miya; Ga'anda** (b) suffixal ***doubtful*: Pero;** ***frozen*: Hausa, Dghwede;** ***one of two strategies*: Ngizim; Bade, Lamang** (c) final consonant "gemination" ***generalized:* Pero** ***lexicalised*: Bole, Kanakuru, Mubi, Mukulu** ***CVVCV verbs:* Migama**	(a) prefixal **➔ *iterative* Tangale** (b) suffixal **➔ *habitative* Ron Group**

7.3 From Nominal to Verbal Morphology

Looking at potential reflexes of a common PC pluractional marker *-*k*-, the following unsatisfactory picture emerges:

(24) Likely and unlikely cognates of PC pluractional marker ***-k-***

	derivational morphology: pluractional	**inflectional morphology: "extensive" aspect**	inflectional morphology: plural agreement
infixal/suffixal ***-k-***	**frozen/monoverbs:** **Dghwede (*-ge*)**	**→ fossilized *repetitive -k-*: Bole** **→ *imperfective -kk-*: Migama (diconsonantal verbs)**	**→ *plural agreement*: Daba (*-igi*), Tera (*-kú*), Gisiga (*-ak/-am*)**

This interpretation is unsatisfactory for at least two reasons:

- The formatives in Dghwede, Gisiga, Daba and Tera (all Central-A sub-branch) are phonologically and functionally too different from those found in Post-Plateau-Sahel Bole and Migama. Newman (1990:118) offers a plausible explanation according to which Daba *–igí*, Tera *–kú*, and Gisiga *–ak* were pluralizers borrowed directly from the nominal system after the loss of the original ***-an*** plural verb stem. I see no reason why not to relate the Dghwede mono-verb pluractional marker *–ge* also to the nominal system.
- The Central-A languages Dghwede, Gisiga, Daba and Tera have no immediate Proto-Plateau-Sahel ancestry, as opposed to West-A Bole and East-B Migama.

It would be more plausible to postulate the following two direct cross-over re-grammaticalisations from nominal to verbal morphology as we would postulate for a second case as well, i.e. the subsystem transfer of the marker *-*d (i)*:[42]

[42] The true historical nature of Proto-Plateau-Sahel ***-k-*** as reflected fossilized in West-A Bole, and productive in East-B Migama, however, must remain unclear until we can be more certain as to whether it is an original noun plural marker of its own standing, or whether it represents the "unweakened" manifestation of the plurality marker which is discussed below under ***-aw***, the likely fact notwithstanding that it's ultimate source is more likely the PC determiner ***k*** as reconstructed by Schuh (1983)!

(25) Verbal derivation/inflection ⟸ Noun plurals ⋯⋯⋯ Determiner

	derivational morphology: pluractional	inflectional morphology: plural agreement/extensive aspect	source: noun plurals < *det
marker *-k-	→ *monoverbs/fossilized* **Dghwede** → *fossilized* **Bole (repetitive)**	→ *plural agreement* **Tera, Gisiga, Daba** → *extensive aspect* **Migama**	suffix *-(a) k (i)
suffix *-ɗ-	→ *generalized*: **Tangale** → *monoverbs*: **Dghwede** → *lexicalised*: **Bidiya**		suffix *-ɗ (i)

7.4 The Special Case of Gisiga

Central-A Gisiga provides a very spectacular case of multiple re-grammaticalisation within its verbal morphology:

- loss of plural agreement verb stem marking with ***-an*** leads to a compensational re-grammaticalisation and complementary distribution of two distinct morphemes: *-ak* (from the nominal system?!) and *–am* (from the imperative subsystem);[43]
- the marker *–am/-ak* thus acquires a generalized function to indicate "finite verb plurality" in the sense of a redundant feature of any "normal" subject-verb number agreement system. Highly economically but uniquely, Gisiga subsequently reduced this redundancy by doing away with the plural subset of subject pronouns, i.e. the functional load of plural marking is shifted entirely onto the verb:[44]

(26) Gisiga finite verb pluralization through suffix ***-am***

ʔi	*kaɗ*	'I kill'	*ʔi*	*kəɗ-am*	'we kill'
kə	*kaɗ*	'you kill'	*kə*	*kəɗ-am*	'you (pl) kill'
ʔa	*kaɗ*	'he/she/it kills'	*ʔa*	*kəɗ-am*	'they kill'

7.5 The Unsolved Problem of the *-aw/*-ay Suffix: How many Sources?

The nature and origin of the reconstructed suffix ***-ay/*-aw*** remains somewhat "inconclusive … since glides often derive through weakening of other consonants (e.g. ***k** > **w*** or ***sh** > **y***) or by means of epenthetic insertion at a very shallow time

[43] The synchronic allomorph *–ak* occurs in non-final position (followed by an object pronoun or the ventive extension), *-am* occurs elsewhere.

[44] Lukas 1970. The following paradigm, however, is taken from Newman (1990:113).

depth" (Newman 1990:85). There are other disturbing observations to be made:

- The marker ***-k-*** above is found only in two Post-Plateau-Sahel languages in which the fairly widespread reflexes of ***-ay/*-aw*** are conspicuously absent – reason enough to assume "weakening" of ****/k/*** and to postulate cognation?
- Whether East-A Lele *–wi* belongs here or rather reflects a direct crossover from noun plural marking (source PC ***-i***, with dissimilated epenthetic glide [*-w-*]?) remains to be investigated in more detail.
- Miya's final *–a* may reflect a redundant feature of pluractional verbs (formative a-vocalisation) rather than a suffix in its own right.
- The geographic distribution of ****-aw*** appears to cut across the whole range of Chadic sub-branches; this would strengthen its reconstructability for PC.[45] When we remove the doubtful cases from this list, the remaining distribution – Central-A (Podoko), East-B (Bidiya & Dangaleat) – renders the issue inconclusive. Likewise, the distribution of ***-ay*** remains inconclusive.[46] If, however, we follow Newman (1990) and take ***-ay/*-aw*** to represent a single pluractional marker, the present-day distribution would point again towards **Plateau-Sahel** (West-A: Ron Group, East-B: Bidiya and Dangaleat) – with its reflexes in Central-A (Podoko, Zulgo, Daba) remaining to be accounted for!
- Finally, the suffix PC ***-ay/*-aw*** could also reflect a nominalizing morpheme in Chadic of yet not fully investigated distribution. Verbal nouns are often used as the predicate basis for periphrastic constructions, which cover many of the semantic domains, which we have attributed to extensive aspect.[47] This would be an accidental phonological similarity to begin with. Note, however, that this accidental phonological similarity may have favoured the conceptual merger of extensive aspect formation and a particular verbal noun formation at a later stage, i.e. re-grammaticalisation of a verbal nominaliser as extensive aspect marker. This hypothesis, however, still needs more detailed investigation.

[45] Candidates are found in West-A (Hausa -*wáa* ?), West-B (Miya *–a* ?), Central-A (Podoko), East-A (Lele *–wi* ?), East-B (Bidiya & Dangaleat).

[46] It is found in West-A Ron ("habitative"), Central-A Zulgo ("pluractional") and Daba ("durative").

[47] This overlap had already been noticed in early works ultimately related to the question of Chadic "imperfective" stems (Klingenheben 1928/29:262ff. on Proto-Semitic; Wolff 1977, 1979, 1984a, 1987a.)

(27) Verbal derivation ⟹ Verbal inflection

	derivational morphology: pluractional	inflectional morphology: "extensive" aspect
suffix *-ay/*-aw < *-(a)k- ?	*-aw ***mono-/bi-radical verbs:*** **Bidiya** ***generalized*: Podoko** ***(may add repetitive/ habitual reading)*** ***doubtful:*** **Lele, Miya** *-(a)ya ***non-schwa verbs*: Zulgo**	*-aw ➔ ***durative:*** **Dangaleat (mono-/biradical verbs)** *-(a)y ➔ ***durative:*** **Daba** ➔ ***habitative:*** **Ron Group**

(28) ⇓ Likely reflexes of PC nominaliser

suffix *-(a)y/w = nominaliser ?	**nominaliser: e.g. Hausa (weak VN -*`wáa* ?), Lamang (*-o*), Migama (*-aw/-o*)** **nominaliser (y-prosody): Podoko, Ga'anda (VN linker)**

7.6 From Derivational to Derivational

The PC suffix ***-tV*** which Newman reconstructs "definitely...as an iterative (pluractional-like) stem formative" (Newman 1990:86) is considered to represent a derivational rather than an inflectional category, its use in addition to other reflexes of pluractional formation reflects its original nature as a derivational suffix.[48] Therefore, its usage as pluractional formative represents an instance of re-grammaticalisation from one derivational category to another.

(29) Verbal derivation ⟸ Verbal derivation

	derivational morphology: pluractional	source: derivational iterative/repetitive
suffix *-tV	➔ ***lexically restricted*: Sura** ➔ ***generalized*: Pero** ➔ ***lexicalised*: Kwang** ➔ **Somrai**	***repetitive* stem: Bole** ***iterative:*** **Kera** ***repetitive/iterative:*** **Tobanga**

[48] Cf. also Bybee (1985:151): "...where there is inflectional aspect, the iterative stands outside the general system as a derivational rather than an inflectional category."

7.7 From Inflectional to Inflectional

In passing, we note one more instance of re-grammaticalisation, which Newman (1990) had already pointed out, i.e. the substitution of the (pre-) PC plural imperative marker (***-a**) by a suffix containing a diagnostic nasal consonant. Newman assumes this suffix to be cognate to the old plural agreement marker of the verb. This allows us to state re-grammaticalisation from one inflectional category to another.

(30) Verbal inflection ⟸ Verbal inflection

imperative subsystem		source: plural agreement
	→ ***plural imperatives*:**	
-un(u)	**Saya, Ron-Sha, Logone, Dangaleat, Migama, Bidiya, Mubi**	suffix *-an

8. Summary and Conclusion

Verbal plurality forms a complex and old set of subsystems in the grammar of Chadic languages. Most Chadic languages have pluractional verb stems either as a productive category, or they have given up pluractional as a productive category and only show fossilized reflexes of it, if any. Some Chadic languages have innovated an inflectional formation referred to as "extensive aspect". In very few languages, pluractionals and extensive aspect coexist side-by-side using basically the same inherited formatives (like in Ron-Daffo and Dangaleat). Few languages have also retained a system of plural agreement with the grammatical subject that is marked on the verb. Many again use a special marker for plural imperatives. Many languages use same or very similar formatives, but at times for quite different categories, derivational and/or inflectional. Some of these formatives appear to have spread into verbal morphology from nominal morphology and can ultimately be traced back to markers of the PC determiner system.

Regarding grammaticalisation chains and the re-grammaticalisation processes involved, we arrive at the following conclusions:

1. **Areal factors:** Our study confirms, first of all, the sensitivity of grammaticalisation processes to areal factors as expected following Heine (1997). Indeed, grammaticalisation processes can be used to identify early divisions of the Proto-Chadic dialect chain.
2. **Exclusivity of unidirectionality**: As expected, a fair number of re-grammaticalisation processes were unidirectional:

(31) Unidirectional re-grammaticalisations

subject-verb plural agreement	→	plural imperative
	→	finite verb plurality
noun plural	→	plural agreement (subject-verb)
	→	pluractional
	→	extensive aspect (continuous/progressive, durative, frequentative, habitual, etc.)

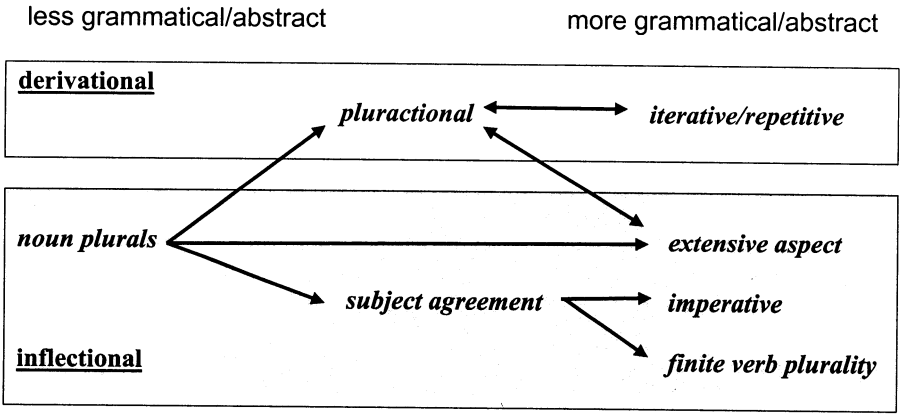
However, as Frajzyngier had already argued (1997a, interestingly also using Chadic data), we are forced to also accept bi-directionality, at least for cases here referred to as re-grammaticalisation, i.e. from one grammatical marker to another. If our analysis is historically correct, then PC pluractional markers were re-grammaticalized as either extensive aspect markers or as otherwise indicating durative and habitual connotations of repeated actions and processes in several New Plateau-Sahel languages (West-A and East-B), and the PC iterative marker was re-grammaticalized (in a merger of categories) to mark pluractionals in at least four languages quite independently in two branches (West-A: Sura, Pero; East-A: Kwang, Somrai), which share no particular connection in our historical scenario.

(32) Bi-directional re-grammaticalisation

pluractional	→	extensive aspect (continuous/progressive, durative, frequentative, habitual, etc.)
	←	iterative/repetitive

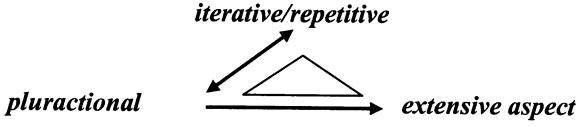
3. **Direction from less grammatical or abstract to more grammatical or abstract:** Since the cases of re-grammaticalisation discussed in this paper involve exclusively grammatical markers rather than lexical sources, any classification in terms of more and less abstract and/or grammatical would appear, on first sight, to be rather ad hoc. However, looked at in terms of grammaticalisation **chains** – and if our basic assumptions about the directions of grammaticalisation hold – we would be able to identify the Chadic-internal degrees of grammaticalness and/or abstractness as indicated by the unidirectional arrows in (33):

(33) Grammaticalisation chains in the domain of verbal plurality in Chadic



Taking the generalizations a bit further, the following overall pattern of re-grammaticalisation is identified, taking into account a wider array of grammatical subsystems in Chadic: Re-grammaticalisation of plurality markers appears to proceed, first of all, unidirectionally from nominal morphology to verbal morphology. Within nominal morphology, it appears likely that it proceeds unidirectionally from determiners to nouns. Within verbal morphology, however, re-grammaticalisation may proceed bi-directional between derivational and inflectional morphology, yet with what appears to be a systematic lack of symmetry between the three grammatical categories involved:

(34) Asymmetry of re-grammaticalisation within verbal plurality



Further, we notice that all inflectional (imperatives, agreement with subject, aspect) and all derivational (pluractional, iterative) categories within the domain of verbal plurality are affected, but that the highly remarkable bi-directional re-grammaticalisation processes in all cases affect at least one member of the derivational subsystem (pluractional, iterative). However, if we are willing to accept that "extensive aspect" in Chadic, because of its derivational origin from pluractionals, remains a derivational category (somewhat counter-intuitively when we look at its integration into the synchronic inflectional systems of the languages where it is found), then we are allowed one further generalization to the effect that bi-directionality of re-grammaticalisation is restricted to derivational categories

(and if only diachronically derivative!). Future investigations into other grammatical subsystems within or beyond Chadic must show how "local" or how "universal" this last generalization is.

APPENDIX:
Overall discussion of grammaticalisation of plural marking in Chadic, i.e. beyond verbal plurality as treated in the present paper

Within an overall discussion of grammaticalisation of plural marking in Chadic, we are faced with different scenarios expressed in the literature:

1. Morphological plural marking said to be independent of or prior to, noun/verb distinction in Chadic or Afroasiatic (Frajzyngier 1977:37).

2. Origin: Pre-existing different plural marking paradigms: A. nominal & B. verbal, with subsequent "internal borrowing" A ⇔ B (Frajzyngier 1977:37, Newman 1990); in particular
   - Verbal plural markers ⇒ nominal plural markers
     Frajzyngier (1977) for consonant gemination, syllable reduplication, a-insertion;
   - Nominal plural markers ⇒ verbal plural markers
     Newman (1990) for Daba *{-igi}*, Tera *{-ku}*, Gisiga *{-ak}*.

3. Common source (deictic/determiner/anaphor) morpheme(s) ⇒ nominal & verbal plural markers, combined with hypothesis that "nominal plural markers in Chadic languages are never inflectional" (Frajzyngier 1997a: 194ff.).

On the other hand, the truth for Chadic may lie in the typological validity of all three scenarios with regard to the "expression" of plurality in both the common proto-language as well as a given modern language:

(a) "Plurality" could have well been <u>also</u> a syntactic category (domains: clause, noun phrase, verb phrase – deictic / determiner / anaphor / pronominal subsystems); this would explain some of the idiosyncrasies of Chadic plural marking:

> "In the majority of Chadic languages, even if a languages has nominal number coding, its use is said to be 'rare' or 'optional'. In no Chadic language can the nominal plural marker, even if bound to a noun, be said to be an inflectional morpheme in the sense of being obligatory when the referent of the noun is more than one." (Frajzyngier 1997a: 195)

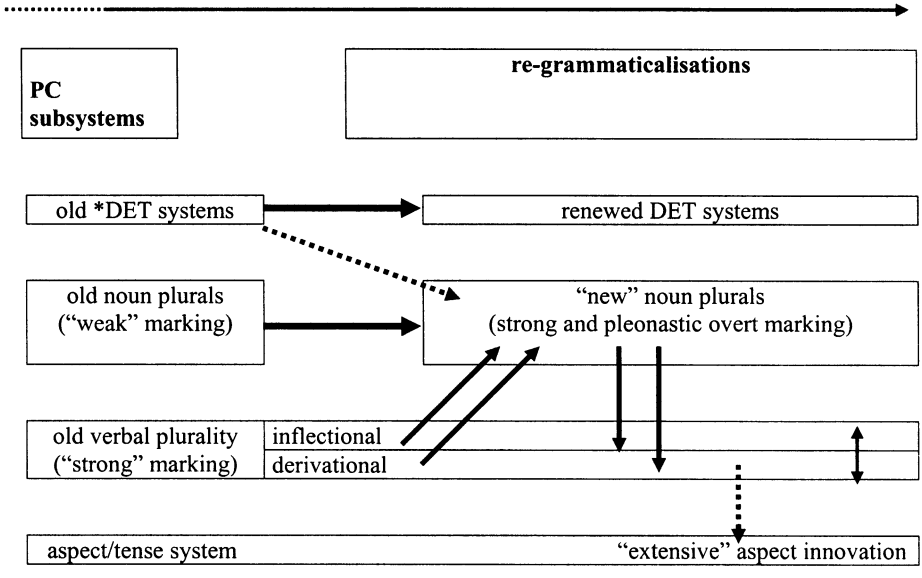
(b) "Plurality" was most likely also an inflectional category for both nominal & verbal lexemes; this would mean to accept

- a PC system with bound determiner morphemes as reconstructed by Schuh (1983) which, however, became functionally weak and was superseded by "new" determiner systems; the "old" determiner markers either became defunct and fused with the noun stem (cf. Lamang dialect forms *fiti* ~ *fitək* 'sun', *pala* ~ *palak* 'rock', etc.) or became re-employed elsewhere in the language, for instance, for overtly and redundantly marking plurality;
- and a kind of "weak" noun plural marking (probably by simple vocalization patterns: vocalic polarity of some sort, possibly prominent: final ***-i***, cf. below) which later became "reinforced" by re-grammaticalisation of other markers to overtly but pleonastically re-mark noun plurals where necessary (e.g. internal-a and semantically re-orientated PC determiners);
- "strong" marking of plurality in the verbal system, both inflectionally (imperatives, plural subject agreement) and derivationally (pluractional, iterative);
- once the "new" overt noun plural markers had established themselves, they began to fluctuate between the domains of verbal and nominal morphology.

This is basically the underlying assumption regarding the graphic representation in (12) further above – allowing for uni- and bi-directional re-grammaticalisation processes.

If our proposed historio-linguistic assumptions are acceptable, then the grammaticalisation story of Chadic plural marking will have to be revised again towards a more complex scenario (35) to supersede the rather simplistic one depicted in (11) further above and to be compared to the one proposed by Frajzyngier (1997a, cf. *Excursus* further above):

(35) Revised scenario of re-grammaticalisation of plurality in Chadic



A basic and yet unsolved problem underlying this scenario remains and needs further study: If most synchronic markers of nominal and verbal plurality in Chadic are cognate to PC determiners and can or must be explained in terms of re-grammaticalisation – what were the original markers of nominal and verbal plurality? An outlook on possible answers is given below.

1. In terms of my present working hypothesis, it might turn out that there was initially a partial number-sensitive **vocalic polarity** at work in the morphology of PC verbs (cf. Newman 1990:135 for PC imperatives and reference to Cushitic), and possibly in nouns as well:

vocalic polarity	SINGULAR	PLURAL	
VERBS	***-i [~u]***	***-a***	/ imperatives
	schwa verbs	***-a-***	/ pluractionals
NOUNS	***ə [~i ,~u]***	***a [~e,~o]***	vocalic polarity
	a [~e,~o]	***ə [~i~u]***	

2. The verbal plural formative ***a** of schwa verbs ("*formative a-vocalisation*"), the archaic ***-i/*-a*** polarity of the imperative, plus the [+low] vocalic pattern

for some noun plurals later together developed into a "new" generalized plural morpheme ***-a-*** (*"internal-a"*) which could freely and pleonastically combine with verbs and nouns independent of lexical vowel patterns and morphological structure. As such, "internal-a" is neither verbal nor nominal by origin, it rather represents a very early instance of re-grammaticalisation![49] At about the same time, the [non-low] vocalic pattern for the other nouns could have developed into a generalized (noun) plural marker ***-i***.

3. The re-grammaticalisation scenario sketched out in (35) would yield complex overt plural marking involving two or more formatives of different origin; this would also provide tentative answers to some of the questions left open in Newman's (1990) comprehensive study. Still in terms of working hypotheses, I would assume the feasibility of the following more specific reconstructions:

(36) Tentative compositional analysis of PC nominal and verbal plural markers

Newman	**noun plural marker**	proposed	compositional analysis
(1990:16ff.)	***-aki**	****-k-i*** ****-a-k-i***	****-k*** previous reference ****-i*** noun plural ****-a-*** internal-a
(1990:21ff.)	***-n-** (-VN, -NV, -VN ?)	****-n-i,*** ****-a-n-i***	****-n*** demonstrative [non-f/sg] ****-i*** noun plural ****-a-*** internal-a
(1990:26ff.)	***-ɗ (i)**	****-ɗ-i*** ****-a-ɗ-i***	****-ɗ*** definite ****-i*** noun plural ****-a-*** internal-a
(1990:28ff.)	***-i ([-e])**	****-i*** ****-a- + -i***	****-i*** noun plural ****-a-*** internal-a (before final C)
(1990:31ff.)	***-ai/*-ay ([-e])**	****-a-y-i***	****-i*** noun plural ****-i*** definite or [-y-] epenthetic glide ****-a-*** internal-a
(1990:36ff.)	**-au / -aw**	*?*	phonological variant of ****-a-y-i*** ?

[49] This would explain why "even though internal-**a** noun plurals are widely found in Chadic, the evidence for reconstructing them back to the PC level is weak... The numerous examples of internal-**a** pluractionals, on the other hand, do look like cognates deriving from a common reconstructable structure." (Newman 1990:134)

	pluractional marker		
(1990:72ff.)	***vocalic ablaut/apophony***		*formative a-vocalisation* *(&) *-a-* internal-a
(1990:77ff.)	**-ɗ-**	****-ɗ*** ****-a-ɗ***	****-ɗ*** definite ****-a-*** internal-a cf. noun plurals ****-ɗ-i, *-a-ɗ-i***
(1990:78ff.)	**-ay/-aw , (-a)**	****-a-y***	****-i*** definite ****-a-*** internal-a cf. noun plurals ****-a-y-i***

	agreement marker		
(1990:117f.)	***-(a)n**	****-a-n***	****-n*** demonstrative [non-f/sg] ****-a-*** internal-a cf. noun plurals ****-n-i,*-a-n-i***

	imperative marker		
(1990:127ff.)	**-a**		
(1990:125ff.)	***-am(ə)**	****-a-mə***	Proto-Central-A innovation (1990:131) ****-mə*** pers. pronoun [pl. incl.] ? ****-a-*** internal-a
(1990:129ff.)	***-unu**	****-nə*** ****-a-n(a)***	****-n*** demonstrative [non-f/sg] ****-a-*** internal-a cf. plural agreement ****-a-n*** cf. noun plurals ****-n-i,*-a-n-i***

	iterative marker		
(1990:80ff.)	***-tV**		purely accidental phonological similarity with ****-t*** demonstrative [+f/sg]

It is hoped that comparative Chadicists and Afroasiaticists might find all this a useful starting point for further investigations.

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