

Tuu substrate in Khoekhoe? The case of compound verbs

In memory of Michael P. Besten

1 Introduction

- “Generally speaking the study of Khoisan language contacts is still in its infancy” (Voßen 2011:189).
- Pioneering article by Güldemann (2006) in which he proposes that the Cape region in Southern Africa is a linguistic area.
- Convergence area comprising Tuu (aka South Khoisan) and Khoekhoe languages (Khoe, aka Central Khoisan)
- Twelve features in the phonology, lexicon and especially the morphosyntax of Khoekhoe that are supposedly due to a Tuu substrate. One of these features is verb compounding.

Structure of this paper

- Güldemann’s (2006) case for compound verbs as a contact induced feature in Khoekhoe
- Historical background of Tuu–Khoekhoe contact and previous work
- Compounding in Khoe
 - Khoekhoe (involving weak flip-flop)
 - Kalahari Khoe (involving the Linker)
- Further uses of the Linker
- A similar pattern in Khoekhoe
- Evaluation and remaining issues

2 Compound verbs as a contact induced feature in Khoekhoe

- Güldemann (2006): “As opposed to canonical Kalahari languages, Khoekhoe is characterized by a heavy reliance on lexically complex predicates”.
- Güldemann traces Khoekhoe verb compounding to verb serialization in the Tuu language |Xam.
- Subject-to-object raising compounds where the raised subject is not a causee (as ‘hit-fall’) but an experiencee:

- (1) **audio-s-a ra mû-!goaxa**
car-2/3sf-OBL PROG see-approach
OBJ V1 V2
‘see a car approaching’

(Haacke 1995:357, cited in Güldemann 2006:”23”,
slightly adapted and glosses by CJR)

complement clause serialization (Aikhenvald 2006b:17).

- (2) |Xam [see do] OBJ
(3) Khoekhoe OBJ [see do]

- Güldemann (2006) views Khoekhoe verb compounding in general as a claque from Tuu.

3 Historical background of Tuu–Khoekhoe contact and Tuu features in Khoekhoe

- Intermarriage between Cape Khoekhoe and San is evident in communities of ‘mixed descent’ such as the Khoekhoe-San Ubiqua in the 18th century eastern Cape (Marks 2011).
- The cattle-herding Khoekhoe may have arrived at the Cape only shortly before the first Europeans (Sadr 2008, 2003 and 1989, cited in Marks 2011).
- Compound verbs like the one in (4) are already found in Knudsen’s 1845 primer in the Nama dialect of Khoekhoe (Moritz ³2001).

(4) !gù-+òá¹ 'to walk out'
walk.WF-go.out

- Terminology: Khoekhoe branch vs. Khoekhoe dialect cluster:
Branch = 'Khoekhoe-Korana-Cape' (*faute de mieux*).
'Kalahari' short for Kalahari Khoe whenever the context is sufficiently clear.

3.1 Tuu substrate features in Khoekhoe

- Cape linguistic area: "including the region along the Orange River".
- Dire data situation: Sizeable amount of data available only for !Ora and Khoekhoe (Khoe) and †Unkwe and |Xam (Tuu). No Tuu data from outside of the area.
- San languages spoken along the coast (West and South): Tuu or not?
- Some of the features supposedly transferred from Tuu to Khoekhoe are also found in Naro and possibly G||ana, sometimes in a more incipient form.
- Güldemann's perspective suggests that the features in question did not diffuse from Tuu to Khoekhoe and then on to Naro and G||ana, but were adopted independently in the Kalahari languages.

4 Compounding in Khoe

4.1 Compound verbs in Khoekhoe

- Compound verb formation is a frequent process in Khoekhoe, though it does not appear to be fully productive (Hagman 1997:69).
- Various subtypes based on form and meaning. They all have in common that they typically undergo a tone change called "weak flip-flop" on the first element of the compound (V1).

¹ Khoekhoe data are represented in the current official orthography as far as the segments are concerned. Tone marks are taken from Haacke and Eiseb (2002).

Result compounds

Weak flip-flop on V1. V2 denotes the result of V1. The logical subjects of V1 and V2 may be same or different.

same-subject

- (5) **kóó** ‘to look’ (tr.)
!gànú ‘to penetrate’ (tr.) **kóó-!gànú** ‘to see through’ (tr.)

different-subject

- (6) **mǎi** ‘to stand (tr.),
set in upright position’
(stand.(up/still).CAUS)
khǎi ‘to rise’ (itr.) **mǎi-khǎi** ‘to place in a
higher position,
promote’ (tr.)

- (7) **‡gae-s-a** **‡khorog-u** **|kha** **mâi-loa!**
crate-3sf-OBL bottle-3pm with stand(itr.).CAUS-become.full

‘Fill the crate with bottles by placing them upright!’

Manner compounds

In manner compounds V1 is subject to weak flip-flop, too, but the tones of V2 are in the Sandhi form.² Semantically, V2 codes the manner by which V1 is carried out:

- (8) **‡nòà** ‘to shoot (at), throw at’ (tr.)
|húru ‘to play’ (tr.) **‡nòà-|húru** ‘to shoot in play’
(itr.)

Perception compounds

Perception compounds constitute the type discussed by Güldemann (2006). See below for details.

- very few verbs are found in this construction:

In 6,300+ words Haacke (1995:358) found the following verbs as V1 in such compounds:

- (9) **!khóé** ‘to run’ (itr.);

² The Sandhi rule refers to a tone change typical of words in non-phrase initial position.

		‘to run (so.o.) close, outrun’ (itr)
lnàrì		‘to drive’ (tr.);
		‘to go (by car/train/bus)’ (itr.)
mùù		‘to see’ (tr.)
hòò		‘to find’
!khóó		‘to catch, hold’

- Logical subject of V2 = DO of [V1V2]
- Depending on the speaker, V1 does or does not undergo flip-flop.³
- The (first two) tones of V2 change to tones 21 (v̂v̂), although with an underlying 43 (v̂v̂) melody this change is optional (Haacke 1999:172).

- (10) **mùù** ‘to see’ (tr.)
!gòàxá ‘to move towards (N) deictic centre’ (itr. stat.)
~ **!gòàxá** (D)
- mùù-!gòàxá** ‘to see approaching’ (tr.)
~ ...-**!gòàxà**,
!gòàxà
- (11) **!khóé** ‘to run’ (itr.)
!gòé ‘to lie down’ (itr.)
- !khóé-!gòé** ‘to run towards s.o. lying’ (tr.)

- It does not seem to be productive (based on Haacke’s (1995, 1999) observations)
- An exceptional, marginal category
- Disregarding the perception compounds, there are very few exceptions where V1 of a compound does not undergo any flip-flop (Haacke 1999:116, 118).
- These odd examples do not seem to fit a specific pattern and call for more research.

4.1.1 The weak flip-flop tone rule

<i>weak</i>			<i>strong</i>	
1	2	< >	1	3
3	2	< >	2	2
4	3	< >	2	4

Figure 1: Flip-flop pairs
(Haacke 1999)

³ Whether this is weak or strong flip-flop is a topic for further research.

- 1 = lowest (ǁ), 4 = highest tone (ǂ)
- Flip-flop is not triggered by specific tonal constellations (such as e.g. melody 1 2 followed by tone 3), but is purely triggered by morphosyntactic constellations.
- Weak flip-flop: Sub-rule according to which only the weak melodies (on the left of Figure 1) switch to the corresponding strong ones; the strong melodies on the right of the figure are not affected in the same environment.

4.2 Compound verbs in Kalahari Khoe

Naro

- (12) **kóm-a** **!āa** ‘to understand’ (Visser 2010:178, glosses adapted)
 listen-LINK know

- The Linker is “usually” present, but it can be omitted (except after nasals or nasalised vowels).
- Tones: any high tone in V1 usually changes to mid (Visser 2010:181-182).

Khwe (Kilian-Hatz 2006, 2008:169)

4.3 The origin of the Linker

- Elderkin (1986:234): < conjunction used between verbs, of the probable form **ǁ**.
- Heine (1986): < copula **a**, which is still attested with this function in Khoekhoe-Korana-Cape, along the following grammaticalisation path:

- (13) copula > nominalizer/object-like complement marker > Linker

This development went hand in hand with the development of TAM and derivation markers⁵ from erstwhile verbs:

⁴ Haacke (1999) has a slightly different terminology. According to Haacke (1999:73) flip-flop only occurs in the formation of compound words. As we shall see presently, its domain is larger in fact.

⁵ according to e.g. Voßen (2010) and Kilian-Hatz (QQQ). Heine (1986) is not concerned with derivation.

(14) lexical verb > AUX > TAM/derivation marker

- Together, these developments in Heine's (1986) view conspired to derive constructions of the type V-LINK-TAM/DERIV from V COP AUX and V NML V.
- The Linker is seen as Kalahari innovation, Khoekhoe-Korana-Cape having remained at the initial stage of the copula in (13) (Heine 1986:9, Voßen (2010:50, 58)).⁶
- Problems with Heine's scenario:
 - Only one example
 - Unclear interpretation
- Main problem with Elderkin's hypothesis is the apparent lack of synchronic evidence of a conjunction of the form à or the like (Voßen 2010:47).

(15) **hàà si ga !'uuka a !xáfa te ||x'aà.**
come 2s FUT tomorrow CONJ clothes 1s wash
'You will come tomorrow to wash my clothes.'

(16) **tàà-è-r ko a !õò tama.**
defeat-PASS-1s CONT CONJ go NEG
'I am defeated and don't go.' > 'I can't go.'

5 Further uses of the Linker in Kalahari Khoe

- Two main further functions:
 1. Connecting a tense-aspect marker to the preceding verb
 - Most ubiquitous in Khwe (Linker I for PRES and FUT, Linker II for PAST tenses. Linker I is a Khwe-specific innovation.
I gloss and refer to Linker II as 'LINK'/Linker for the purpose of this paper.)

⁶ Heine (1986:9): "[the Linker], for which there is apparently no correspondence in the better documented Central Khoisan languages of the Khoekhoe group like Nama or !Ora (Korana)" (transl. by CJR). Similarly Voßen (2010:50, 58): "explain the creation of the Linker in only one of the two primary branches of Central Khoisan (i.e. Kalahari); "Khoekhoe languages are not known to dispose of the Linker in finite verb constructions."

category	form		
	Proto-Khoe	Kalahari	Khoekhoe
applicative	*-ma ‘to give’	-mà (Tsua)	-pà
middle	*-sani	-hì (Kua)	-sèn
causative II °	*-si	-sí (Ani)	-sì
terminative-itive °	*-xu ‘to leave behind’	-xú (Buga)	-xùú
directional-locative °	PWK *-!ʔo	-ʔò (Cara)	-!ʔá (?)
frequentative °	–	-kásì (Danisi)	–

Table 1: Verb derivation markers involving the Linker in Kalahari

- In the case of multiply derived verbs, finally, the Linker sometimes fails to appear in some combinations of the markers in Table 1.

(19a) build-CAUSI-APPL ‘to let build for’

(19b) build-CAUSI-LINK-APPL-MIDD ‘to let build for oneself’

- All the verb derivation markers in Kalahari other than the ones in Table 1 do not involve the Linker, cf. following Table:⁹

category	form		
	Proto-Khoe	Kalahari	Khoekhoe
passive ¹⁰	*-he	-e (Kua)	-hè
reciprocal	*-ku	-kù (≠Haba)	-kù
comitative	*- xǝa	- xòà (Ani)	- xàà
repetitive	*REDUP	REDUP (Naro)	REDUP (!Ora)
causative III	*REDUP	REDUP (Khwe)	REDUP

Table 2: Verb derivation markers reconstructed to Proto-Khoe not involving the Linker in Kalahari

⁹ Labels slightly adapted by CJR. Sources of reconstructions: Voßen (1997:349ff.); Kalahari: Voßen (1997); Khoekhoe: Haacke and Eiseb (2002), with adapted transcription to match Voßen’s.

¹⁰ Synchronically, Voßen (1997), Kilian-Hatz (2008) i.a. view the passive in Kalahari/Khwe as a voice operation rather than a derivation marker. However, Voßen (1997:360) assumes that it functioned as a derivation in Proto-Khoe.

The table ignores concomitant segmental and tonal changes, cf. the fact that both repetitive and causative III are formed by reduplication

6 A similar pattern in Khoekhoe

6.1 TAM

- Khoekhoe has only one TAM marker that follows the verb in the unmarked word order, the Perfect.
- The Perfect marker in Khoekhoe triggers weak flip-flop on the verb, while its counterparts in Kalahari have a Linker:

| acc. to Haacke 1999:195 and elsewhere in 1999, *hâ* is in the Sandhi form

Khwe

(20) **khùrîí-na-xu-a-hâ.**

end-LINK-COMP-LINK-PERF

‘It (= the story) is finished just here.’ (adapted from Kilian-Hatz 2008:102)

Khoekhoe

(21) **||í-b ge hàrá-hàà.**

(underlying melody: **hára**)

3-3sm DECL swallow.WF-PERF

‘He has swallowed.’ (adapted from Haacke 1999:195)

V+Perfect marker likely < compound verb, but synchronically a different construction:

(22) **hára=b ge hàà.**

swallow.WF = 3sm DECL PERF

‘He has *swallowed*.’ (adapted from Haacke 1999:195)

6.2 Verb derivations

	marker in Kk	Linker in KalK	weak flip- flop in Kk
applicative	-pà	√	√
middle	-sèn	√	(√)
causative II	-sì	√	(√)
terminative-itive	-xùú	√	√
directional-locative	(-!ʔóá)	√	√

Table 3: Verb derivation markers in Khoekhoe I

Applicative

- (23) **mǎí** ‘to say’
mǎí-bà ‘to tell’
- (24) **lnàrí** ‘to steal’
lnàrí-bà ‘to steal for’

Middle

For Khoekhoe it can be argued that this suffix is a pronoun rather than a derivation marker (Rapold forth). The usual middle marker (**-sèn**) does not normally trigger flip-flop (Haacke 199:142)¹¹ (25); however, there is a shorter allomorph **-n̩** that triggers weak flip-flop. It occurs in certain verbs with an incorporated noun.

- (25) **lnàm** ‘to love’
lnàm-sèn ‘to love oneself’
- (26) **‡kháù** ‘to smear’
mùú-s ‘eye’ (eye-3sf)
‡kháù-mùú ‘to apply ointment to someone’s eye’
‡khàù-n̩-mùú ‘to apply ointment to one’s own eye’

(Haacke 1999:143)

- (27) **lǎó** ‘to milk’

¹¹ Haacke (1999:215) reports one verb that optionally undergoes strong flip-flop.

 kháá-b	‘body’ (body-3sm)	
 ǎǎ-ǎ- kháà	‘to squirt milk onto oneself while milking’ ¹²	

Causative II

Causative II triggers strong flip-flop. In other words, while it does trigger weak flip-flop (28), the tone changes it causes go beyond that to affect strong melodies as well (29). However, Haacke (1999:144) also notes one example where the flip-flop is weak.

(28)	dài	‘to suck (milk)’ (tr.)	
	dàí-sì	‘to give suck’	(Haacke 1999:144)
(29)	†ùú	‘to eat’ (tr.)	
	†úú-sì	‘to feed, spoon-feed’	(Haacke 1999:144)

Terminative-itive

(31)	áo	‘to throw lightly’	
	ào-xùú	‘to throw away/out’	
(32)	 hàbú	‘to exhale heavily’ (itr.)	
	 hàbú-xùú	‘to spit out’ (tr.)	

The terminative-itive suffix is probably related to the verb **xùú** ‘to let go, leave (tr.)’, as Voßen (1997:354) already notes.

Directional-locative

(33)	máá	‘to stand’	
	máá-lǎá	‘to resist, withstand’ (tr.)	
(34)	dǐí	‘to do’	
	dǐí-lǎá	‘to retaliate against s.o.’ (tr.)	

The directional-locative marker **-lǎá** is probably related to the postposition **lǎá** ‘to, towards, in the direction of’.

¹² The tones in the incorporated noun **|kháà** are caused by the so-called Sandhi rule, which is irrelevant to the discussion here. In the previous example, the noun retains its tone because Sandhi has no effect on the melody 13 (ǎǎ).

	marker in Kk	Linker in KaK	weak flip- flop in Kk
passive	-hè	–	–
reciprocal	-kù	–	–
comitative	 xàà	–	–
repetitive	REDUP (!Ora)	–	n.a.
causative III	REDUP	–	(√)

Table 4: Verb derivation markers in Khoekhoe II

Passive

- (35) |húru ‘to play (game)’ (tr.)
|húru-hè ‘to be played’

Reciprocal

For Khoekhoe it can be argued that this suffix is a pronoun rather than a derivation marker (Rapold forth., in prep.).

- (36) |nàm ‘to love’
|nàm-gù ‘to love each other’

Comitative

- The comitative in Khoekhoe could be argued to be an incorporated postposition in Khoekhoe rather than a genuine derivation marker.
- The same possibly holds for the Kalahari Khoe languages, since Voßen (1997:354) notes that almost all of them have |xoa as a ‘conjunction’ ‘and’.¹³ More research is needed to determine the exact status of this category.

- (37) !gúù ‘to walk’
!gúù-|khàà ‘to walk (along) with s.o.’ (tr.)

Repetitive

- A repetitive by pure reduplication is not attested in Khoekhoe, though it is found

¹³ Voßen (1997:355) does not list comitative for Proto-Khoekhoe, but this is probably an accidental omission as he mentions that !Ora has it as a verbal suffix (*ibid.* p. 353) and reconstructs the comitative to Proto-Khoe (*ibid.* p. 355).

in !Ora (Voßen 1997:189).

- Khoekhoe has got a V-**ka**-V construction which Hagman (1997:73-74) treats as reduplication. However, Deoskar (2003:18) shows that the two verbs need not be identical.

Causative III

- This derivation is the only case here where Khoekhoe does have a tone change.
- V1 undergoes strong flip-flop, V2 has the tones 2 1 (**ṽṽ**).
- However, there is variation in the younger generation. Some speakers apply only weak flip-flop or are inconsistent (Haacke 1999:215).

(38) **||gòǎ** ‘to descend’
||góǎ||gòǎ ‘to dissuade’

- In Khwe the causative III also features some tone changes.
- Hence it is possible that these word formations already contained a tone change at the Proto-Khoe level. In that case the causative III in Table 4 would be independently motivated and would thus only be an apparent exception here.
- The causative III in Khoekhoe triggers strong flip-flop, which means strictly speaking it does not violate the complementary observation that “weak flip-flop in Khoekhoe corresponds to the Linker in Kalahari” either.
- Khoekhoe has other deverbal derivation markers that do not trigger weak flip-flop nor any other tone change, including the diminutive **-rǒ**, the inclinative **-xǎ** and the causative **-í** (found only in three verbs).
- Inclinative **-xǎ**: cf. the inclinative ***-kxʔao** reconstructed to Proto-West Kalahari, which incidentally does not involve the Linker.

7 Evaluation

- Strikingly similar distribution of weak flip-flop in Khoekhoe and the Linker in Kalahari Khoe in
 - compound verb formation
 - TAM formation
 - verbal derivation (both presence and absence)
- Unlikely the result of mere chance

- Linker accompanied by tone changes in Naro
- In all Kalahari languages except Danisi the Linker has a \emptyset -segmental allomorph/surface realisation among the many segmental variants (Voßen 1997:272, 2010:49).¹⁴
- In Khwe the zero form (or, according to Kilian-Hatz 2008:113, lengthening of the verb final vowel) varies with a longer, segmental marker in several verb classes. The zero form is actually the *preferred* form in several verb classes and its use has been *extending* over the last forty years (Kilian-Hatz 2008:113).
- Plausible and most economical explanation: weak flip-flop and the Linker are reflexes of a single category in Proto-Khoe.
- The Linker has grammaticalised the furthest in Khoekhoe, where all that is left of it after phonological erosion is a mere tone change.
- By implication, compound verb formation in both branches is most plausibly inherited, too.
- Conclusion: Khoekhoe is less divergent from Kalahari Khoe than previously thought.
- Not valid for the perception compound

8 Non-obvious abbreviations

KalK	Kalahari
Kk	Khoekhoe
PWK	Proto-West Kalahari
WK	weak flip-flop

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¹⁴ Kilian-Hatz (2008:113), but not Köhler's earlier work, disagrees on this point for Khwe. According to her, the alleged zero-allomorph in Khwe is rather a totally assimilated form of the Linker; this equals lengthening of the verb final vowel.

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