A 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): the Cape region in Southern Africa is a linguistic area, comprising Tuu (aka South Khoisan) and Khoekhoe languages (Khoe, aka Central Khoisan)

Map 1: Pre-colonial distribution of Khoisan languages in Southern Africa
(© Bill McGregor 2011, based on Güldemann and Voßen 2000:100)
• 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.

(1) V1 男神  ‘to see’ (tr.)
V2 ǂán‘to know’ (tr. stat.)

[V1-V2] 男神-ǂán  ‘to recognise, realise’ (tr.)

• tight nexus between V1 and V2 (tone changes, no intervening material between V1 and V2)
• Khoekhoe verb compounds are generally semantically compositional
• V1 and V2 can be used independently as simple predicates

Structure of the 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: involves weak flip-flop
  Kalahari Khoe: involves 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 back to verb serialization in the Tuu language |Xam.
• Subject-to-object raising compounds where the raised subject is not a causee (as in ‘hit-fall’) but an experiencee:
(2) **audo-s-a**  **ra**  **mû-goaxa**
car-2/3sf-OBL  PROG  see-approach
OBJ  V1-V2
‘sees a car approaching’

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

(3) **tsì̂  |gam**  **doe-ʔom-kha=b**  **ge**  **huri-ro-b**
DO=SUB  TAM  PP
COOR  two  move-building-3dm.OBL = 3sm  DIST.PAST  sea-DIM-3sm
am-lgâ  mû-mâ,…
V1-V2
next_to  see-stand
‘And he saw two boats lying next to the lake,…’ (Luke 5:2)

complement clause serialization (Aikhenvald 2006b:17)

(4) |Xam  [see do] OBJ
(5) 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 the Cape
linguistic area

• 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).
• Compound verbs like the one in (6) are already found in mid-19th century sources
(Knudsen 1845 in Moritz ‘2001, Wallmann 1854).
(6) \textit{ǃgû̩û̩-ǂòà} ‘to walk out’
walk.WF-go.out

- Terminology: Khoekhoe branch vs. Khoekhoe dialect cluster:
  Khoekhoe branch = ‘Khoekhoe-Korana-Cape’ (\textit{faute de mieux})
  ‘Kalahari’ = short for Kalahari Khoe

3.1 (Tuu) substrate features in Khoekhoe and other Khoe languages

- 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 ǂUnkwe and ǀXam (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 Gǁhana, 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 Gǁana, 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).

\footnote{Except for a few minor deviations, 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).}
The weak flip-flop tone rule

<table>
<thead>
<tr>
<th>weak</th>
<th>strong</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2</td>
<td>&lt; &gt;</td>
</tr>
<tr>
<td>3 2</td>
<td>&lt; &gt;</td>
</tr>
<tr>
<td>4 3</td>
<td>&lt; &gt;</td>
</tr>
</tbody>
</table>

*Figure 1: Flip-flop pairs (Haacke 1999)*

- 1 = lowest (\(\text{v}^\text{̏}\)), 4 = highest tone (\(\text{v}^\text{̋}\))
- 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.

<table>
<thead>
<tr>
<th>weak</th>
<th>strong</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2</td>
<td>&gt;</td>
</tr>
<tr>
<td>3 2</td>
<td>&gt;</td>
</tr>
<tr>
<td>4 3</td>
<td>&gt;</td>
</tr>
</tbody>
</table>

*Figure 2: Weak flip-flop*

**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

(7)  kõõ 'to look’ (tr.)

!gânú 'to penetrate’ (tr.)

kõõ!gânú ‘to see through’ (tr.)

F
different-subject

(8)  mấ́ ‘to stand (tr.), set in upright position’ (stand.(up/still).CAUS)

khấ́ ‘to rise’ (itr.)

mấ-khấ ‘to place in a higher position, promote’ (tr.)

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2 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.
(9) ǂgae-s-a ǂkhoro-gu ǀkha māi-joa!
---DO--- ---------PP-------  V1-V2
crate-3sf-OBL bottle-3pm with stand(itr.).CAUS-become.full

‘Fill the crate with bottles by placing them upright!’ (Haacke & Eiseb 2002)

**Manner compounds**
V1 is subject to weak flip-flop; the tones of V2 are in the Sandhi form.³ Semantically, V2 codes the manner by which V1 is carried out:

(10) ǂnồ ‘to shoot (at), throw at’ (tr.)
ǀhûrù ‘to play’ (tr.) ǂnồ-hûrù ‘to shoot in play’ (itr.)

**Non-causative S-to-O raising compounds**
Non-causative S-to-O raising compounds constitute the type discussed by Güldemann (2006).
• very few verbs are found as V1 in this construction:
  In 6,300+ words Haacke (1995:358) found the following verbs as V1 in such compounds:

(11) ǃkhố ‘to run’ (itr.);
    ‘to run (so.o.) close, outrun’ (itr)
ǀnầri ‘to drive’ (tr.);
    ‘to go (by car/train/bus)’ (itr.)
ǀmû̀ ‘to see’ (tr.)
ǀhồ ‘to find’
ǃkhố ‘to catch, hold’

• Logical subject of V2 = DO of [V1-V2]
• Depending on the speaker, V1 does or does not undergo flip-flop.⁴
• The (first two) tones of V2 change to tones 21 (v̋v̋), although with an underlying 43 (v̏v̏) melody this change is optional (Haacke 1999:172).

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³ The Sandhi rule refers to a set of tone changes typical of words in non-phrase initial position.
⁴ Whether this is weak or strong flip-flop is a topic for further research.
(12) mʊʊ ‘to see’ (tr.)

!gòxā ‘to move towards mʊʊ-!gòxā ‘to see deictic centre’ (itr. stat.) ~ …-!gòxā, approaching’ (tr.)

(13) !kʰõé ‘to run’ (itr.)

!gõé ‘to lie down’ (itr.) !kʰõé-!gõé ‘to run towards s.o. lying’ (tr.)

• Such compounds does not seem to be productive (based on Haacke’s 1995, 1999 observations)
• An exceptional, marginal category

• Disregarding the NON-CAUSATIVE S-TO-O RAISING 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.

4.2 Compound verbs in Kalahari Khoe

Naro

(14) kõm-ā lāa ‘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: similar situation (Kilian-Hatz 2006, 2008:169)

4.3 The origin of the Linker

• the Linker has a high degree of allomorphy, which is only partly phonologically conditioned.
• Phonological conditioning shows a tight phonological bond between the Linker and the preceding element.

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

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

This development went hand in hand with the development of TAM and derivation markers\(^5\) from erstwhile verbs:

(16) 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 (15) (Heine 1986:9, Voßen (2010:50, 58)).\(^6\)

• Problems with Heine’s scenario:
  - Only one example
  - Unclear interpretation

• Main problem with Elderkin’s hypothesis: apparent lack of synchronic evidence of a conjunction of the form à or the like (Voßen 2010:47).

(17) hàà si ga !’uuka a !xáía te ||x’aà.
    come 2s FUT tomorrow CONJ clothes 1s wash
    ‘You will come tomorrow to wash my clothes.’

---

\(^5\) according to e.g. Voßen (2010) and Kilian-Hatz (2004). Heine (1986) is not concerned with derivation.

\(^6\) 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.”
(18) tàà-è-r ko a lōò tama.
defeat-PASS-1S CONT CONJ go NEG
‘I am defeated and don’t go.’ > ‘I can’t go.’ (Visser 2010:180)

5 Further uses of the Linker in Kalahari Khoe

• Two main further functions:
  1. Connecting a verb and a tense-aspect marker that follows it
     • 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.)

(19) tíú tàñ-å-f.
and.then stand.up-LINK-PAST5
‘Then he stood up.’ (adapted from Kilian-Hatz 2008:293)

• at least some tense-aspect markers < verbs

2. Connecting a verb and certain derivational suffixes, or connection two derivational suffixes
   • nearly twenty verb derivation suffixes (“extensions”) in Khoe (Voßen 1997:271)
   • only six suffixes occur with the Linker (Voßen 2010:53)
   • some derivational suffixes < verbs but synchronically there are arguments for not treating derived verbs as compound verbs. 7

7 In Khwe, for instance, compound verbs pattern with non-derived verbs and not with derived verbs with regard to the allomorph selection of the Linker (Kilian-Hatz 2008:113). This is of course not to say that in all cases and all languages a clear-cut distinction can be made between compound and derived verbs or that the matter may not require more research in some cases.

(20) [Xaise (SHUA group)
|ʔáň                 ‘to build’
|ʔáň-á-ma            ‘to build for’ (Voßen 2010:53)
build-LINK-APPL

• Four or five out of the six verb derivations that involve the Linker can be reconstructed to Proto-Khoe (Voßen 1997:349ff.).

<table>
<thead>
<tr>
<th>category</th>
<th>form</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Proto-Khoe</td>
</tr>
<tr>
<td>applicative</td>
<td>*-ma ‘to give’</td>
</tr>
<tr>
<td>middle</td>
<td>*-sani</td>
</tr>
<tr>
<td>causative II</td>
<td>*-si</td>
</tr>
<tr>
<td>terminative-itive</td>
<td>*-xu ‘to leave behind’</td>
</tr>
<tr>
<td>directional-locative</td>
<td>PWK *-ʔo</td>
</tr>
<tr>
<td>frequentative</td>
<td>–</td>
</tr>
</tbody>
</table>

*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.

(21a) build-CausI-(Ø)-APPL        ‘to let build for’
(21b) 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:³

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:

Khwe

\[(22)\] \textit{khùr-\text{-}na-xu-a-\text{-}hã}. \\
\textit{end-LINK-COMP-LINK-PERF} \\
‘It (=the story) is finished just here.’ (adapted from Kilian-Hatz 2008:102)

Khoekhoe

\[(23)\] \textit{\text{-}b ge hàrâ-\text{-}hàà}. \\
\textit{3-3sm DECL swallow.WF-PERF} \\
(underlyingly: hàrâ) \\
‘He has swallowed.’ (adapted from Haacke 1999:195)

\[\text{Table 2: Verb derivation markers reconstructed to Proto-Khoe not involving the Linker in Kalahari}\]

<table>
<thead>
<tr>
<th>category</th>
<th>form</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Proto-Khoe</td>
</tr>
<tr>
<td>passive(^10)</td>
<td>*-he</td>
</tr>
<tr>
<td>reciprocal</td>
<td>*-ku</td>
</tr>
<tr>
<td>comitative</td>
<td>*-\text{ǀ}xòa</td>
</tr>
<tr>
<td>repetitive</td>
<td>*REDUP</td>
</tr>
<tr>
<td>causative III</td>
<td>*REDUP</td>
</tr>
</tbody>
</table>

\(^{10}\) 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.
V + Perfect marker likely < compound verb, but synchronically a different construction:

(24) ḥaṛ̅ā = b ge ḥā̰.  
swallow.WF = 3sm DECL PERF 
‘He has swallowed.’  
(adapted from Haacke 1999:195)

6.2 Verb derivations

<table>
<thead>
<tr>
<th>derivation</th>
<th>marker in Kk</th>
<th>Linker in KalK</th>
<th>weak flip-flop in Kk</th>
</tr>
</thead>
<tbody>
<tr>
<td>applicative</td>
<td>-pā</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>middle</td>
<td>-sèn</td>
<td>√</td>
<td>(√)</td>
</tr>
<tr>
<td>causative II</td>
<td>-sī</td>
<td>√</td>
<td>(√)</td>
</tr>
<tr>
<td>terminative-itive</td>
<td>-xùṇ́</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>directional-locative</td>
<td>(-?-bá)</td>
<td>√</td>
<td>√</td>
</tr>
</tbody>
</table>

*Table 3: Verb derivation markers in Khoekhoe I*

Examples for each derivation show a weak melody followed by one with a so-called strong one to show the specific type of flip-flop (i.e. weak vs. strong):

**Applicative**

(25) mḭ̄̋ mḭ̄̋  ‘to say’

(26) !näṛ  ‘to steal’

!näṛ-bā  ‘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)\(^\text{11}\) (27); however, there is a shorter allomorph -ṇ̀ that does trigger weak flip-flop. It occurs in certain verbs with an incorporated noun.

\(^{11}\) Haacke (1999:215) reports one verb that optionally undergoes strong flip-flop.
(27) |nəm | ‘to love’
    |nəm-sən | ‘to love oneself’

(28) ǂkháà ‘to smear’
    mû-s ‘eye’ (eye-3sf)
    ǂkháà-mû ‘to apply ointment to someone’s eye’
    ǂkháà-n-mû ‘to apply ointment to one’s own eye’
    (Haacke 1999:143)

(29) ǀàò ‘to milk’
    kháà-b ‘body’ (body-3sm)
    ǀàò-n-ǀkháà ‘to squirt milk onto oneself while milking’

_Causative II_

Causative II triggers strong flip-flop. In other words, while it does trigger weak flip-flop (30), the tone changes it causes go beyond that to affect strong melodies as well (31). However, Haacke (1999:144) also notes one example where the flip-flop is weak.

(30) ǂdá ‘to suck (milk)’ (tr.)
    ǂdá-sí ‘to give suck’
    (Haacke 1999:144)

(31) ǂgu ‘to eat’ (tr.)
    ǂgu-sí ‘to feed, spoon-feed’
    (Haacke 1999:144)

_Terminative-itive_

(33) ǀháò ‘to throw lightly’
    ǀháò-xù ‘to throw away/out’

(34) |hàbú ‘to exhale heavily’ (itr.)
    |hàbú-xù ‘to spit out’ (tr.)

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

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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 (v̏v̏).
Directional-locative

(35) ma
      ^---^  ‘to stand’  ma
      ^  ŋa  ‘to resist, withstand’ (tr.)

(36) dí
      ^  ‘to do’  dí
      ^  ŋa  ‘to retaliate against s.o.’ (tr.)

The directional-locative marker -ności is probably related to the postposition !òa ‘to, towards, in the direction of’.

<table>
<thead>
<tr>
<th></th>
<th>marker in Kk</th>
<th>Linker in KalK</th>
<th>weak flip-flop in Kk</th>
</tr>
</thead>
<tbody>
<tr>
<td>passive</td>
<td>-ëé</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>reciprocal</td>
<td>-kù</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>comitative</td>
<td>xàà</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>repetitive</td>
<td>REDUP (!Ora)</td>
<td>–</td>
<td>n.a.</td>
</tr>
<tr>
<td>causative III</td>
<td>REDUP</td>
<td>–</td>
<td>(√)</td>
</tr>
</tbody>
</table>

Table 4: Verb derivation markers in Khoekhoe II

Passive

(37) hũrú
     ^  ‘to play (game)’ (tr.)
     hũrú-ëé  ‘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.).

(38) nám
     ^  ‘to love’
     nám-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 \textit{xoa} as a ‘conjunction’ ‘and’. More research is needed to determine the exact status of this category.

(39) \textit{ǃgùù} \quad ‘to walk’
\textit{ǃgùù- khàà} \quad ‘to walk (along) with s.o.’ (tr.)

\textit{Repetitive}
\begin{itemize}
\item A repetitive by pure reduplication is not attested in Khoekhoe, though it is found in its sister !Ora (Voßen 1997:189). Available information on tone (changes) is not conclusive.
\item Khoekhoe has got a V-\textit{ka}-V construction which Hagman (1997:73-74) treats as reduplication. However, Deoskar (2003:18) shows that the two verbs need not be identical.
\end{itemize}

\textit{Causative III}
\begin{itemize}
\item V1 undergoes strong flip-flop, V2 has the tones 2 1 (\textit{VV}).
\item However, there is variation in the younger generation. Some speakers apply only weak flip-flop or are inconsistent (Haacke 1999:215).
\end{itemize}

(40) \textit{ǁgàl̓̃} \quad ‘to descend’
\textit{ǁgàl̓̃-goďà} \quad ‘to dissuade’

\begin{itemize}
\item In Khwe the causative III also features some tone changes.
\item 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.
\item 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.
\item Khoekhoe has other deverbal derivation markers that do not trigger weak flip-flop nor any other tone change, including the diminutive \textit{-r̥ô}, the inclinative \textit{-xà} and the causative \textit{-f} (found only in three verbs).
\end{itemize}

\textsuperscript{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 (\textit{ibid.} p. 353) and reconstructs the comitative to Proto-Khoe (\textit{ibid.} p. 355).
• Inclinative -xā: 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 ∅-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.
  (This does not hold for the marginal, exceptional case of non-causative S-to-O raising compounds.)
• Conclusion: Khoekhoe is less divergent from Kalahari Khoe than previously thought.

8 Non-obvious abbreviations

KalK Kalahari

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

9 References


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