

The Verbal “Linker” in Central Khoisan (Khoe) in the Context of Deverbal Derivation

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In the formation of finite verbs the languages of the Kalahari branch of Khoe (Central Khoisan) make use of a certain element, here called “Linker”, to connect the verbal base to the following tense-aspect marker. On a synchronic level this element has no recognisable meaning nor does it reveal a definite grammatical function. While Heine (1986) argues that the Linker is to be seen as a grammaticalised copula (which still exists as such in most Kalahari Khoe languages), Elderkin (1986) advocates the hypothesis that this element derives historically from a conjunction (no longer found in modern languages).

Although we are fairly aware of the major steps involved in the grammaticalisation process, the verbal Linker has not been investigated yet in all its contexts. Thus, the present article intends to further elaborate on this theme by systematically studying the conditions of occurrence of the Linker on derived verbs.

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Introduction

When constructing finite verbs the Kalahari Khoe languages (Central Khoisan)¹⁾ employ a certain element that links the verbal base to the following tense-aspect marker.

Keywords: Southern Africa, Kalahari Khoe (Central Khoisan), Verbal Linker, Derived and Non-Derived Verb Stems

- 1) According to Vossen (1998a), the genetic classification of Central Khoisan (Khoe) is as follows: There are two primary branches, Khoekhoe and Kalahari Khoe (formerly “Non-Khoekhoe”). The latter branch is subdivided into West and East Kalahari Khoe. Each sub-branch consists of two subgroups: KXOE and NARO-IGANA, and SHUA and TSHWA respectively.

This element was first described at some length by Oswin Köhler in his 1981 sketch grammar of Kxoe, a West Kalahari Khoe language, and the term “juncture”²⁾ was coined to refer to it. In this paper the term “Linker” is preferred for reason of convenience. As a base form of the Linker /a/ may be determined because it occurs, first of all, in all Kalahari Khoe languages and dialects and is represented by a number of allomorphs which vary between languages to a certain extent. These allomorphs are largely, but not exclusively, phonologically conditioned, progressive assimilation to the stem-final vowel of the verbal base form being the dominant feature of this morphophonological change. For Kxoe, Köhler (1981) established even two Linker morphemes whose appearance was shown to be dependent on the tense-aspect form of the finite verb; to these Linkers different base forms were ascribed, each with its own series of allomorphs attached. Hence, Linker I occurs on verbs in present and future tense whereas Linker II is confined to verbs marked for past tense. Cf. the following examples (Köhler 1981: 497f.):

- (1) Linker (“juncture”) I (present/future)
- | | | | | |
|--------|------------------|---|--------------|-----------|
| //èé | ‘to decide’ | : | //èé-é-tè | (present) |
| ts’áni | ‘to smoke’ (itr) | : | ts’áni-ye-tè | (present) |
- Linker (“juncture”) II (past)
- | | | | | |
|-------|------------------|---|---------------------------|------------|
| /x’úú | ‘to kill’ | : | /x’úú-wá-hã ³⁾ | (preterit) |
| /qéí | ‘to splash’ (tr) | : | /qéí-yá-hã | (preterit) |

The full range of Linker allomorphs that was found so far to exist in Kalahari Khoe is listed in Table 1 below.

Common to all Kalahari Khoe languages is the fact that the Linker, on a synchronic level, has no recognisable meaning, nor does it reveal a definite grammatical function⁴⁾. In 1986, this observation encouraged two scholars, independently of one another, to look into the history of development of the Linker from a comparative perspective. In spite of their diverging approaches both authors, Bernd Heine and Derek Elderkin, came to the same conclusion, i.e., that the Linker must be seen as a result of grammaticalisation. While Heine related it to the still existing copula ’à, Elderkin identified the Linker with a (synchronically unattested) conjunction à.

Heine (1986: 13f.) first pointed to the various forms of grammaticalisation of the copula in Khoe. By quoting an example from !Ora, an extinct Khoekhoe language, he

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- 2) More precisely *joncture*, since the grammar was published in French.
- 3) In this paper, unmarked vowels bear mid tone unless on vowel sequences with nasal components. Thus, *ã* in *hã* (preterit) is mid toned while *úú* in */x’úú* ‘to kill’ represents a sequence of two high tones on two subsequent nasal vowels.
- 4) However, in her recently published grammar of modern Khwe (i.e. Köhler’s Kxoe) Christa Kilian-Hatz (2008: 108–121) assigns the function of “active voice” to the Linker. Although this may be justified for Kxoe and some other Kalahari Khoe languages as well, there are reasonable doubts about the validity of such interpretation with respect to the subfamily as a whole. In !Ani and Buga, for instance, the Linker can never be employed if the verb contains an object marker, in which case there is no marking of “active voice” whatsoever (cf. Vossen 1985 for !Ani).

Table 1: Linker allomorphs in Kalahari Khoe.

<i>Allomorph</i>	<i>Language/dialect</i>
ε	Kxoe, !Ani
wa ⁵⁾	Kxoe
ya	Kxoe
ye ⁵⁾	Kxoe
ɲa	Kxoe
ɲe ⁵⁾	Kxoe
ra	Kxoe, !Ani, Buga; Naro, !Gana, !Gui, #Haba; Cara, !Xaise, Deti; Kua
re	Kxoe, !Ani, Buga; Ts'ixa
re	Kxoe, !Ani, Buga; Naro, !Gana, !Gui, #Haba; Kua, Tsua
ro	Kxoe, !Ani, Buga; Naro, !Gana, !Gui, #Haba; Ts'ixa; Kua, Tsua
ru	Kua
na	throughout
∅	all except Danisi
e	!Ani; Kua
o	!Ani; Kua

Sources: Kxoe (Köhler 1981); all other languages (Vossen 1997 and field notes)

attempted to demonstrate that the copula served as an element of the nominal paraphrase which, being marked for gender and number in agreement with the subject of the sentence, was placed after the verb and separated it from the following auxiliary verb, thus yielding the structure: verb-’a.GN_{AGR}-AUX_{VERB}. It was at this stage that the development of the Linker in Khoekhoe languages came to a standstill. In Kalahari Khoe, on the other hand, the copula developed into a verbal nominaliser and, hence, lost its original meaning. In this context Heine spoke of desemanticisation, thus: verb+’a-AUX_{VERB}. The auxiliary verb, which originally was a full verb in its own right, was subsequently remodelled into a tense-aspect marker and was also desemanticised, just like the copula before: verb+’a+AUX_{VERB} → verb+ Linker+tense-aspect marker⁶⁾.

Also Elderkin started out from the assumption that the element ’à first combined more closely with the verb before it became a morpheme linking the main to the auxiliary verb:

“I would like to suggest that the *joncture* is a conjunction, used between verbs, of probable form à, entering into the phonological structure of the previous item and forming one word with it. It was this joining of two verbs which led to the grammaticalisation of the second in what were presumably stereotyped and frequent combinations” (Elderkin 1986: 234).

5) According to Kilian-Hatz (2008: 108), these allomorphs are merely “optional phonetic realisations [of -a and -e respectively] with a weakly realised glide”.

6) Some of the present-day tense-aspect markers can clearly be shown to derive from former verbs. I shall refer back to this later on.

The grammaticalisation hypothesis appears to be highly plausible for mainly two reasons: On the one hand, it tries to explain the creation of the Linker in only one of the two primary branches of Central Khoisan (i.e. Kalahari Khoe) through confrontation with verbal structures that prevail in the other branch (i.e. Khoekhoe); in addition to this, it is based on all currently available, synchronic and diachronic, linguistic evidence. Especially Heine's reflections would seem to even lead a step further: when comparing finite verb forms between different Kalahari Khoe languages he became convinced that the co-existence of two Linkers as observed in Kxoe represents, at least for the moment, the last stage of development of the verbal Linker. Since not all Kalahari Khoe languages make use of two Linkers (one for past and the other for non-past [present/future] tenses), which are in fact restricted to the KxOE subgroup of West Kalahari, it was argued by Heine that these were introduced in succession. Hence, Linker I (present/future) was said to have come into being only after Linker II (past) had already been fully established⁷⁾. This view is strongly supported by evidence from Kxoe and !Ani, two close relatives from the KxOE subgroup. Elderkin (1986: 234) seems to have come to a similar conviction when he states that "in the *prétérit* [preterit/past], this grammaticalisation was earlier than in the present/future where the form of the *joncture à* is better preserved." This "better preservation" of the Linker 'à in the present and future tenses is also contained, albeit indirectly, in Heine's remark that Linker II (past) "exhibits stronger features of assimilation (...), that its allomorphs can no longer be defined phonetically" (1986: 17).

The Linker and its segmental shapes

In order to distinguish between the different base forms underlying the two Linkers, Heine proposed /a/ for the (younger) Linker I and /A/ for Linker II. However, when historical reconstruction comes into play the diverging stages of development of the verbal Linker in the languages of the Kalahari Khoe branch would seem to speak against the mere establishment of *a and *A, respectively, as base forms. This applies especially to the proto-stages of West and East Kalahari Khoe, the linguistic daughters of proto-Kalahari; for while in the KxOE subgroup of West Kalahari, for example, the development of Linker I is almost completed (Kxoe) or has at least commenced (!Ani), other languages of the same branch (i.e. NARO-!GANA subgroup) have only Linker II so far. If *a and *A were set up for proto-West Kalahari, the situation given in NARO-!GANA would have to be interpreted in the light of Linker deterioration—which cannot be proven though. The same would be true of East Kalahari, too, where Linker I has not developed yet. What could at best be reconstructed for proto-Kalahari, proto-West and proto-East, on the basis of a regular

7) Obviously, the labels "I" and "II" as assigned to the present/future and past Linkers, respectively, do not reflect the chronological order of development. They were as such taken over from Köhler (1981) who, however, in his description of the verbal system of Kxoe did not have any diachronic processes in mind when he dealt with the present and future tenses first and treated past tenses thereafter.

distribution of Linker II over the whole of Kalahari Khoe, is *A, but even this would be a daring enterprise, given that the process of grammaticalisation described above might well have been initiated after the split-up of proto-Kalahari Khoe.

Of course, any linguistic historical examination of the Linker would be incomplete without taking account of the rich paradigm of allomorphs that occur in finite verb constructions (cf. Table 1). As mentioned before, the chief characteristic of this phenomenon consists in the progressive assimilation of the base form of the Linker to the last vowel of the verb stem. A second significant feature, which is also attested throughout Kalahari Khoe, is to be seen in the occurrence of <r> or a nasal consonant before the base form /a/ or its assimilated variant. Elsewhere I described this phenomenon as insertion (Vossen 1997: 195ff.). However, it is not a matter of insertion in the epenthetic sense, because no phonetic-phonological conditions can be discerned. When looking at the distribution of <r ~ N> occurrence on the two Linkers, it becomes evident that the insertion on both Linkers is confined typically to only one language, viz. Kxoe, where according to Heine, the development of the Linker is most advanced. In !Ani where the formation of Linker I (present/future) is at least under way⁸⁾, insertion of <r> or <n> is restricted as yet to Linker II (past). If Heine’s and Elderkin’s claim that Linker II must be older than Linker I because of, *inter alia*, the higher degree of allomorphic variance on Linker II, is consistent, some sort of etymological motivation may be suspected behind the occurrence of the two consonants.

As a consequence, we would have to conjecture—according to Heine (1986: 15ff.)—that in former times a good number of modern CVV verbs ended in <r> or <N> and were thus representing a CVVC structure that no longer exists in Khoe (nor in Khoisan in general). What we do find quite frequently today, however, are CVN verbs; in other words, word-final nasal consonants are permitted, but they are the exception to the rule. Given the fact that contraction of vowel+nasal consonant sequences to nasal vowel (VN→ṽ) is widely and well attested in Khoe, the assumption of etymological motivation would be anything but speculation at least in cases of <N> occurrence.

Some questions still remain to be answered, though. Why is it, for example, that all CVCV verbs in !Ani take on the allomorph [na] (of Linker II) in past tense constructions, although nasal insertion is a typical feature of CVV verbs? One may also wonder why <r> and <N> should have been the only final consonants that Khoe languages accepted. That both belong to the class of resonant sounds does not give sufficient, if any, reason. Rather, phonotactics might play a certain role since [r] (as an allophone of /d/ in intervocalic position) and nasals are no doubt the most frequent consonants in C₂ position. If we further consider that apocope appears to have been a fairly common process in the phonological development of Khoe roots, really lots of CVr/CVN roots could have resulted from reduction of former CVCV.

8) In !Ani, Linker I is as yet represented throughout by the base form /a/ which, however, appears in future tense only; verbs marked for present tense apply a zero Linker (morphologically speaking).

Table 2: Hypothetical development of !Ani verbs ending in *ã* or *aN* in connection with the Linker /a/.

<i>Stages</i>	<i>sãá</i>	<i>tsxãã</i>	<i>gãm</i>
initial shape	#san+a	#tsxan+a	#gam+a
VN coalescence	#sãã+a	#tsxãã+a	—
denasalisation of V plus <i>n</i> -resumption	#sa+na	—	—

Table 3: Hypothetical development of Cara verbs ending in *ũ* or *uN* in connection with the Linker /a/.

<i>Stages</i>	\emptyset	/'ũũ	!ũn
initial shape	—	#!'un+a	#!un+a
VN coalescence	—	#!'ũũ+a	—
denasalisation of V plus <i>n</i> -resumption	—	—	—

As to the insertion of <N> before the Linker of CVV verbs in !Ani, yet another problem needs to be solved. To begin with, this insertion is limited to verbs ending in a nasal vowel. As a result, the nasal quality of the vowel tends to get lost, hence $C\tilde{v}\tilde{v} \rightarrow CV.N+a$. However, not all Kalahari Khoe languages behave like this with respect to any verb of the above-mentioned type. There are, for instance, constraints as for the tongue height of the final nasal vowel (see Table 3). Thus, in !Ani the described change is restricted to the low nasal vowel. Taking CVN structure as a point of departure when analysing the history of development of !Ani verbs, such as *sãá* 'to rest', *tsxãã* 'to be tired' and *gãm* 'to throw', the following scenario (Table 2) would, as it were, suggest itself: While only *sãá* seems to have gone through all three stages, *tsxãã* was left behind on the second and *gãm* never developed beyond the initial stage.

That tongue height plays a prominent role in the Linker formation in the context of <N> insertion is demonstrated in Table 3. The examples derive from Cara, a language that has so far developed the Linker for the past tenses only. Here, the verb /'ũũ 'kill' was found to be representative of a small group of verbs—ending in a high nasal vowel—which appear to have undergone the first two stages but not the third, whereas !ũn 'bend' stands for another group of verbs—ending in a nasal consonant—that have not developed beyond the initial stage. The two verbs parallel exactly the situation as described above for the !Ani verbs 'be tired' and 'throw', respectively; however, in Cara (and other Khoe languages as well) no cases with verb-final high nasal vowels could be identified resembling the *sãá*-type of verbs in !Ani. In other words, the three-stage scenario (as illustrated in Table 2) cannot be shown to hold true of verbs ending in a non-low nasal vowel.

The Linker on derived verb forms

So far, we have looked at the Linker in the context of finite verbs where it connects the non-derived verb (= verbal base) to the following tense-aspect marker. Under certain conditions, the Linker also occurs between the verbal base and a derivative, verb-extending formative which immediately follows the verbal base. It can also appear between two such

verbal extensions, which trigger especially semantic and/or syntactic modifications around the verbal base and are fairly common in all African language phyla. In Central Khoisan, this applies particularly to the Kalahari Khoe branch where nearly twenty categories of verbal derivation were found to exist (see Vossen 1997: 268ff.). To this day, however, no more than six of them have been identified to take on the Linker in the above-mentioned way. These are: reflexive, directive-locative, dative (“benefactive”), repetitive (“iterative/frequentative”), causative (III), and terminative-itive. This section gives an overview of occurrences as contained in my own field data which were collected in the 1980s on several field trips to the Republic of Botswana.

Simply derived verbs

By far the most widely used shape of the Linker is its base form /a/ on both, simply derived and multiply derived verbs. Let us consider the former type first. Here, all examples (except three) concern CVN and CVV verbs ending in a non-low vowel. The Linker is placed between the verbal base and the derivative suffix, as illustrated in (2–6):

- (2) reflexive
kúm-á-hì ‘to hear oneself’ (← *kúm* ‘to hear’ [Kua])
- (3) directive-locative⁹⁾
pée-á-’ò ‘to jump ahead/toward, to cross’ (← *pée* ‘to jump’ [Cara])
- (4) dative
gòm-á-mà ‘to smoke for’ (← *gòm* ‘to smoke’ [Tsua])
l’áń-á-ma ‘to build for’ (← *l’áń* ‘to build’ [[Xaise])
#íí-á-ma ‘to call for’ (← *#íí* ‘to call’ [Ts’ixa])
lx’áé-á-má ‘to assemble for’ (← *lx’áé* ‘to come together’ [Naro])
ts’óó-á-má ‘to rot for’ (← *ts’óó* ‘to rot’ [Naro])¹⁰⁾
túú-à-má ‘to dive for’ (← *túú* ‘to swim, to dive’ [Cara])
sĩĩ-a-má ‘to work for’ (← *sĩĩ* ‘to work’ [Danisi])
mũú-à-mà ‘to show for’ (← *mũú* ‘to see’ [lAni])
- (5) repetitive
nlgái-a-kási ‘to keep on singing’ (← *nlgái* ‘to sing’ [Danisi])
lgái-a-kási ‘to keep on running’ (← *lgái* ‘to run’ [Danisi])
kũú-a-kási ‘to keep going’ (← *kũú* ‘to go’ [Danisi])
- (6) terminative-itive
giám-a-xú ‘to get rid of’ (← *giám* ‘to throw’ [Buga])¹¹⁾

9) For a comparative survey and the historical reconstruction of this function, see Vossen (1998b).
 10) There is yet another verb *ts’óó* in Naro, meaning ‘to rattle’, which however takes on the [o] allomorph of Linker II: *ts’óó-ó-má* ‘to rattle for’.
 11) Buga *giám* is a reflex of proto-Kalahari Khoe **!gam* ‘to throw’. Comparative evidence reveals that this form has come into being through click loss and subsequent palatalisation of the ↗

<i>tsái-á-hu</i> ‘to burn down’	(← <i>tsái</i> ‘to burn’ [Cara])
<i>!xóé-á-xú</i> ‘to scratch off’	(← <i>!xóé</i> ‘to scratch’ [Danisi])
<i>chùù-á-hú</i> ‘to rub off (by force)’	(← <i>chùú</i> ‘to wipe’ [Cara])
<i>! ’ái-a-xú</i> ‘to sell’ ¹²⁾	(← <i>! ’ái</i> ‘to buy’ [Danisi])
<i>’yùù-á-xú</i> ‘to eat up’	(← <i>’yũũ</i> ‘to eat’ [Danisi])

In my data, there are only three examples of CVCV verbs which take on the Linker base form. They all end in /i/ and relate to the dative function:

(7) <i>gùni-à-má</i> ‘to hunt for’	(← <i>gùni</i> ‘to hunt’ [Deti])
<i>káni-à-má</i> ‘to play for’	(← <i>káni</i> ‘to play’ [Deti])
<i>cxádi-á-mà</i> ‘to mould for’	(← <i>cxádi</i> ‘to mould’ [Kua])

In only one instance (lAni) the Linker base form occurs with a reduplicated verbal root (= repetitive) plus causative III:

(8) <i>hĩ-hĩ-à-sí</i> ‘to use, to seduce’	(← <i>hĩ</i> ‘to make’)
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The insertion of <r> (after root-final /a/) and <n> (following root-final /ã/) onto the base form of Linker II has been noted in very few cases of CVV verbs. The examples in (9–10) illustrate r- and the one in (11) n-insertion:

(9) dative	
<i>#x’óá-rá-má</i> ‘to go out for’ ¹³⁾	(← <i>#x’óá</i> ‘to go out’ [Naro])
(10) terminative-itive	
<i>#x’óá-rá-xú</i> ‘to be out’ ¹³⁾	(← <i>#x’óá</i> ‘to go out’ [Naro])
<i>!ó-rá-xú</i> ‘to chase away’	(← <i>!óá</i> ‘to chase’ [Buga])
(11) dative	
<i>tsá-nà-má</i> ‘to swim for’	(← <i>tsãá</i> ‘to swim’ [Kua])
<i>#á-na-mà</i> ‘to put for s.o.’	(← <i>#ãá</i> ‘to put into’ [lAni])

Example (12) also shows n-insertion, though here it is not etymologically motivated or phonologically conditioned but, rather, due to the CVCV structure of the verbal root:

↗ click-replacing velar stop, thus: **!gam* > *gam* > *giam* > *giam*. This process of development has affected a number of lexemes in Buga.

12) with causative meaning

13) The two forms appear to be abnormal in so far as the insertion of <r> requires the reduction of former CVV structure of the verbal root to CV shape (i.e. in the given cases: *#x’ó-rá-má* and *#x’ó-rá-xú*, respectively).

(12) terminative-itive

ts'àrí-na-xú ‘to extirpate’ (← *ts'àrí* ‘to extinguish’ [Buga])

Vocalic assimilation of the Linker base form /a/ to the preceding root-final vowel of the verb is also well attested in Kalahari Khoe. In the majority of cases it is accompanied by *r*-insertion, thus producing verb stems with [re] or [ro] as Linker allomorph.

The only instance of mere vocalic assimilation relates to reflexive function and derives from Kua:

(13) *tsóó-ó-hì* ‘to cure oneself’ (← *tsòó* ‘to cure’)

The allomorph [re] of Linker II is found with a number of verbs that end in the vowel sequence /ae/ (reflexive and dative) or /ee/ (terminative-itive), whereby the final /e/ is omitted. All my examples (14–16) refer to CVV verbs:

(14) reflexive

khà-ré-hì ‘to stab oneself’ (← *khàé* ‘to stab’ [Tsua])

(15) dative

khà-ré-mà ‘to stab for’ (← *khàé* ‘to stab’ [Tsua])

(16) terminative-itive

c'é-ré-xù ‘to spit toward’ (← *c'éé* ‘to spit’ [Kua])

c'é-ré-xù ‘to spit toward/on’ (← *c'éé* ‘to spit’ [Tsua])

tshèé-ré-xù ‘to expell’¹⁴⁾ (← *tshèé* ‘to chase away’ [!Ani])

With reduplicated verb stems [re] occurs under the same or similar conditions as just mentioned above for CVV verbs. Cf. the following examples from !Ani:

(17) repetitive+dative

#éé-#é-re-mà ‘to listen for’ (← *#éé-#éé* ‘to listen’)

(18) repetitive

!áé-!á-rè ‘to throw a spear’ (← *!áé* ‘?’)

tsxéé-tsè-rè ‘to tear into shreds’¹⁵⁾ (← *tsxéé* ‘to tear’)

#hèé-#hè-rè ‘to broadcast’¹⁵⁾ (← *#hèé* ‘to pour’)

The appearance of the allomorph [ro] is limited in my data to CVV verbs in the TSHWA subgroup. The formation strategy is the same as for [ra] and [re]. See the following examples:

14) This construction is abnormal because of the final /e/ of the verbal root that is retained in the derived form.

15) In this example, the vowel of the Linker has only partially been assimilated to the last vowel of the verbal root, although the allomorph [re] does exist in the KXOE subgroup (cf. Table 1). The reason is as yet unknown.

(19) reflexive

lá-ró-hì 'to shoot oneself' (← *láo* 'to shoot' [Tsua])

(20) dative

ts'á-ró-mà 'to milk for' (← *ts'áo* 'to milk' [Kua])

(21) terminative-itive

lá-ró-xù 'to shoot at' (← *láo* 'to shoot' [Tsua])

Multiply derived verbs

I will now discuss briefly the Linker in the context of multiply derived verbs. In such complex constructions the Linker occurs predominantly in its base form /a/ right before the dative or terminative-itive marker, irrespective of the kind of derivative element that precedes the Linker or follows the dative/terminative-itive formative. Examples:

(22) dative association

a. *lái-sàn-à-mà* 'to learn for' (lAni)

teach-REFL-LINK-DAT

b. *lx'áé-lx'áé-kù-à-mà* 'to group up for' (lAni)

come.together-REP-REC-LINK-DAT

c. *nyáá-hú-kàhú-á-má-sin* 'to let s.o. put s.th. for oneself' (Cara)

put-TERM-CAUS.I-LINK-DAT-REFL

d. *tsáá.xù-rù-mà* 'to cook for' (Kua, Tsua)

cook-LINK-DAT

e. *tsáá.ngù-à-mà* 'to cook for' (lAni)

cook-LINK-DAT

(23) terminative-itive plus dative association

l'gúm-á-xu-káxù-à-má 'to let s.o. blow out s.th. for' (Naro)

blow-LINK-TERM-CAUS.I-LINK-DAT

In (22) each verb is marked for dative and the dative formative is connected to the preceding element by the Linker. In (22a) and (22b) the preceding elements are the reflexive and the reciprocal marker, respectively. (22c) is an example where the dative formative is connected by the Linker to the preceding causative marker and is followed immediately by the reflexive morpheme *-sin*. In (22d) and (22e) the verb is a compound construction consisting of a verb plus noun. Again, the dative marker is connected to the verb by the Linker which in (22d) is the allomorph [ru] (i.e. vocalic assimilation plus *r*-insertion). Finally, in (23) the Linker appears twice, first connecting the terminative-itive marker *-xu* to the verbal root and then linking the dative formative to the preceding causative element *-kaxu-*.

From what we have just seen above we may conclude that the dative marker plays a central role with respect to the occurrence of the Linker on derived verbs. However, there are also cases where the use of the dative marker does not trigger "automatic" employment

of the Linker. See the following examples from Naro:

- (24) *kà̀b̥l̥-!ʼó-má-sì*¹⁶⁾ ‘to turn inside out for oneself’
 turn-DIR.LOC-DAT-REFL
 as against, e.g.
 // *ʼáá-kù-à-má* ‘to fight for one another’
 fight-REC-LINK-DAT
- (25) // *ʼxáé-! xàè-sì-mà* ‘to assemble for oneself’
 come.together-REP-REFL-DAT
 as against, e.g.
 // *ʼxáé-á-má* ‘to come together for’
 come.together-LINK-DAT
- (26) *tshàó-káxù-má* ‘to let build for’
 build-CAUS.I-DAT
 as against, e.g.
tshàó-káxù-à-má-sì ‘to let build for oneself’
 build-CAUS.I-LINK-DAT-REFL
- (27) *tséé-ku-xòà-má* ‘to work together for each other’
 work-REC-COM-DAT
 as against, e.g.
tséé-/xòà-kàxù-á-má ‘to let work together for each other’
 work-COM-CAUS.I-LINK-DAT

In (24) the dative marker follows the directive-locative formative and no Linker comes between them. The same is true of (27) where the dative formative follows the comitative extension marker. Both constructions are fully in line with other evidence contained in my data. Example (25) suggests that preceding reflexive function, too, generally prevents the Linker from showing up. And this may be correct for Naro, even though it contradicts the situation in other Kalahari Khoe languages (cf., for instance, the second attestation in (28) below). Finally, the two constructions in (26) are even a contradiction in itself, as we find the Linker at one time attested and once unattested in the same kind of environment, that is between causative I and the dative marker. As yet I do not know why this is so, nor do I want to speculate about it.

The following two examples also show the lack of the Linker before the dative marker. They are taken from !Ani:

- (28) #*hèé-kù-kà-mà* ‘to mix s.th. for s.o.’
 mix-REC-CAUS.II-DAT
 as against, e.g.

16) Underlined vowels are pharyngealised.

- #hèé-kù-kà-sàn-à-mà* 'to mix s.th. for oneself'
 mix-REC-CAUS.II-REFL-LINK-DAT
- (29) *tshǎǎ-kà-mà-kù-kx'ò* 'to usually let dig for each other'
 dig-CAUS.II-DAT-REC-INCL
 as against, e.g.
tshǎǎ-kà-kù-à-mà-kx'ò 'dto'
 dig-CAUS.II-REC-LINK-DAT-INCL

Both instances demonstrate the lack of the Linker between causative II and the dative marker. Unfortunately, my data collection does not contain other examples of the same combination of verbal extensions; given this any generalisation is unthinkable.

Reanalysis of the Linker

Most of the known Kalahari Khoe languages have sets of disyllabic verbs whose second syllable is identical with the *rV*-shaped Linker allomorph as listed in Table 1. These verbs may well be the result of speakers' reinterpretation of former CVV verbs plus Linker II and are now considered to be CVCV verbs which, as such, again require the use of the Linker. A few examples, from !Ani, are given in (30):

- (30) a. *bà.rá* 'to swim'
 b. *khò.rá* 'to spread out'
 c. *t'è.ré* 'to be idle/lazy'
 d. *dò.ró* 'to twirl fire; to pierce (beads)'
 e. *dzó.ró* 'to gather, to pick up'
 f. *thù.rú* 'to slough (snake)'
 g. / 'ú.rù 'to forget'
 h. /x'ú.rú 'to shiver'

In finite constructions all these verbs morphologically behave exactly like any other (non-reanalysed) CVCV verb, thus taking on the same Linker morphemes (cf. Vossen 1997: 197ff.).

However, most of the examples above require a brief discussion. (30c) has a cognate *t'àré* 'to be useless' in !Xaise (SHUA subgroup) that seems to contradict the reanalysis hypothesis because of the phonological conditioning of the allomorph [re]. Hence, the lax front mid-vowel in V_1 in !Ani could likewise be explained in terms of regressive assimilation which is not uncommon in the language (see Vossen 1997: 434). (30d) may be questionable in the light of its cognate form *toro* 'to pierce' in Nama/Damara, a КНОЕКНОЕ language (see Vossen 1997: 435). Although in this case the phonological requirement of the Linker allomorph is fulfilled, the example does not fit exactly the common pattern because КНОЕКНОЕ languages are not known to dispose of the Linker in finite verb constructions. (30e) is a similar

case to (30c) as it has cognates with /a/ in V₁ and /o/ in V₂ (Vossen 1997: 417), thus violating the phonological conditioning of the Linker allomorph [ro]. (30f) on the other hand, is a similar case to (30d) in that the !Ani stem has cognate forms in KHOEKHOE, viz. *tsuru* ‘to pluck’ in Nama/Damara and *tsürü* ‘to pluck chicken’ in extinct !Ora (cf. Vossen 1997: 448). Also (30g) has a cognate /’uru in Nama/Damara (Vossen 1997: 501). An exciting example, however, is (30h): this one, too, has a cognate form in Nama/Damara, viz. /xu (Vossen 1997: 510), but in this case that does not detract from the significance of the reanalysis hypothesis because the second syllable resembling the Linker allomorph is missing in Nama/Damara. And really strong evidence is to be seen in the comparative series for the verb ‘to rot’ which is *ts’óó* in KXOE and NARO but *ts’oro* (with varying tone melodies) ~ *c’óró* in !GANA, SHUA and TSHWA (Vossen 1997: 500). These findings suggest that reanalysis has taken place in the latter three subgroups but not in the two former.

All in all, however, more research is needed to clarify the validity of the reanalysis hypothesis.

Conclusion

In summary, the following statements would seem to suggest themselves:

1. The use of the Linker in finite verb constructions is twofold: First and foremost, it links the verb to the following tense-aspect marker, but under certain conditions it also acts as a connection between verbal base form and extension marker (simply derived verbs) and between two extension markers (multiply derived verbs).

2. The conditions of occurrence are defined by the type of extension. Only six functions have hitherto been found to require the Linker: reflexive, directive-locative, dative, repetitive, terminative-itive, and causative III. The most frequent appearance in my data is with dative and terminative-itive extensions, the rarest cases are directive-locative and causative III. Of course, the lack of the Linker in connection with other derivative functions raises the question of why the distribution of the Linker is restricted in this way. If we go back to the grammaticalisation hypothesis of Heine and Elderkin as outlined above, it seems reasonable to suppose that those extension markers requiring the Linker are former full verbs which have become derivative formatives in as much the same way as other former verbs have become tense-aspect markers. In fact, at least the dative and terminative-itive markers cannot only be shown to derive from verbs but are still in use as such in a number of Kalahari Khoe languages: *ma* in the meaning of ‘to give’ and *xu* (and its phonetically modified cognates) meaning ‘to leave (behind)’. The origin of the other four derivatives is however obscure.

3. With regard to shape, the Linker base form /a/ prevails clearly over any allomorphs whose occurrence underlies the same rules as set up for their association with tense-aspect markers.

4. Little is known as yet about the behaviour of the Linker with CVCV verbs, as in my data CVV and CVN structures predominate.

5. There are unexplained cases of non-occurrence of the Linker in connection with the dative function. These are confined so far to Naro and !Ani.

This article can only mean a first step towards solving the Linker problem in relation to verbal extensions. No doubt more systematic research is needed to arrive at more reliable conclusions.

Abbreviations

AUX _{VERB}	auxiliary verb
CAUS.I	causative I
CAUS.II	causative II
COM	comitative
DAT	dative
DIR.LOC	directive-locative
GN _{AGR}	gender-number agreement marker
INCL	inclinative
itr	intransitive
LINK	linker
REC	reciprocal
REFL	reflexive
REP	repetitive
TERM	terminative-itive
tr	transitive

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