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A Kwadi perspective on Khoe juncture-verb constructions

Abstract: Kwadi, a now extinct click language of southwestern Angola with poor documentation, was once a candidate for a linguistic isolate in Africa. The historical analysis of its pronoun system and available lexicon eventually led to establishing its genealogical relation to the southern African Khoe family. In this paper, I entertain further evidence for the higher-order lineage Khoe-Kwadi by looking at verbal morphology. I propose that the so-called "juncture" morpheme of Khoe is related to a grammatical element in Kwadi that attaches to verb roots and turns them into dependent forms. This hypothesis also informs the historical analysis of the Khoe juncture itself as well as the possible role of language contact in the development of multi-verb constructions in Khoe-Kwadi as a whole.

Keywords: dependent verb, Khoe-Kwadi, multi-verb construction, verb juncture, reconstruction

1 Introduction

Kwadi is an extinct click language once spoken by a group of small-scale pastoralists in southwestern Angola along the lower Curoca River (Guerreiro 1971). It already had very few speakers in the 1960s when E. Westphal recognized it to be an important linguistic research topic. In 2014, A.-M. Fehn encountered only two individuals who remembered a few words and expressions of the language (Fehn and Rocha 2023). Kwadi's extinction over the course of the second half of the 20th century is mainly due to the shift of the small speech community to the southwestern Bantu language Kuvale.

Westphal (1964/5, n.d.a–c) himself collected the most extensive, albeit restricted data on Kwadi, including audio recordings. Regarding its genealogical relations, he first considered it to be an isolate (Westphal 1962: 8, 1963: 247) but later pondered

Note: The present topic was presented first at the 5th International Symposium on Khoisan Languages and Linguistics, Riezlern, 14–16 July 2014 (see Güldemann and Fehn 2014). My co-author Anne-Maria Fehn did not pursue a publication of this joint research but I am grateful for the initial collaboration without which this article would lack several insights into Kalahari Khoe.

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the possibility of its link to the Khoe family (1965: 137, 1971: 380). This idea was taken up by Köhler (1981: 469) and Ehret (1982). None of these proposals was based on the inspection and analysis of sufficient data within historical-comparative methodology. Voßen's (1997) sound reconstruction of Proto-Khoe, including a large amount of morphology, ultimately paved the way for a dedicated assessment of the Khoe-Kwadi hypothesis. That is, my analysis of Westphal's Kwadi material (Güldemann 2001) and its comparison with Voßen's (1997) Khoe reconstructions in Güldemann (2004) and Güldemann and Elderkin (2010) revealed a cognate pronoun system and more than 60 potential lexical isoglosses – a sizeable number of them involving emerging regular sound correspondences.[1] This robust evidence for a genealogical relation between the two units has by now been consolidated and extended by Fehn and Rocha's (2023) extensive historical-comparative reconstruction of Proto-Khoe-Kwadi lexicon. Using old as well as previously unavailable data, their research proposes more than 130 lexical items for the proto-language based on a detailed phonological analysis and a fuller establishment of regular sound correspondences.

Possible future revisions of Voßen's (1997) internal Khoe classification aside, the structure of Khoe-Kwadi with Kwadi and Khoe as sister branches is as in Figure 1.

Khoe-Kwadi			
Kwadi		single language†	
Khoe			
	Kalahari Khoe		
	East	Shua LC:	Cara, Deti, ǃXaise, Danisi, etc.
		Tshwa LC:	Kua, Cua, Tsua, etc.
	West	Khwe LC:	ǁXom, ǁXo, Buga, ǁAni, etc.
		Gǁana LC:	Gǁana, Glui, etc.
		Naro LC:	Naro, Ts'ao, etc.
	Khoekhoe	(Cape)† LC	
		(ǃOra-Xiri) LC	
		(Eini)† LC	
		Nama-Damara LC	
		Haiǁom	
		ǂAakhoe	

Notes: † = extinct, LC = language complex, (. . .) = only older and/or limited data

Figure 1: The current sub-classification of Khoe-Kwadi (Güldemann 2014: 27).

1 Blench (2017: 180–181) still features Kwadi as an African isolate language whose similarities to Khoe are supposedly due to contact without, however, engaging with the evidence proposed by then in favor of the genealogical relationship.

Apart from the overall typological similarity between Khoe and Kwadi (cf. Güldemann 2013b) and the historical relation between their pronominal systems, little evidence exists so far in terms of cognate grammar. In this regard, Güldemann (2010) raised the hypothesis about an additional isogloss in proposing that the so-called "juncture" morpheme of Khoe languages has a possible cognate in Kwadi. This paper is to substantiate this further piece of morphological evidence for the Khoe-Kwadi hypothesis. After briefly introducing the juncture concept (Section 2.1), I give a cross-family survey of the Khoe juncture regarding its function (Section 2.2), morpho-syntax (Section 2.3), and phonology (Section 2.4), and discuss hypotheses about its origin (Section 2.5). In Section 3, I present data on two complex predicate structures of Kwadi that are pertinent to the historical link I advance here, namely a construction expressing volition (Section 3.1) and a pattern involving verb root reduplication (Section 3.2), and then summarize the results (Section 3.3). I finally present my historical conclusions (Section 4).

2 A survey of juncture-verb constructions in Khoe

2.1 The verb juncture in Kalahari Khoe – an introduction

Köhler (1981) developed the concept and coined the original French term "joncture" in order to describe suffixes in West Caprivi Khwe without an apparent meaning of their own that join verb roots to other grammatical suffixes. Due to distinct sets of allomorphs, he identified two distinct morphemes, namely "joncture I" before non-past suffixes and "joncture II" before suffixes for past tense and verb derivation, as illustrated in (1) and (2).

(1) West Caprivi Khwe (Köhler 1981: 498–499)
   a. ***kyámà-à****-tè*
      follow.spoor-JUN.I-PRS
      '. . . follow a spoor'
   b. ***kyámà-nà****-hã̀*
      follow.spoor-JUN.II-PST
      '. . . followed a spoor'

(2) West Caprivi Khwe (Köhler 1981: 497–499)
   a. ***kwê-ɛ́-tè***
      not.want-JUN.I-PRS
      '. . . reject'
   b. ***kwê-rɛ́-hǎ̋***
      not.want-JUN.II-PST
      '. . . rejected'

Later historical-comparative work, notably Voßen (1997, 2010), established the relevance of the juncture for the entire Kalahari branch of Khoe and proposed a base form *a* with a range of different allomorphs. Since then, the juncture has been described in detail in a number of individual languages and has also been the subject of historical analyses. In the following, I present a brief cross-family survey of so-called "juncture-verb constructions", leading to a partly new approach to their synchronic description and diachronic assessment.

2.2 Functional characteristics

A first important step is the functional evaluation of the juncture. Depending on the nature of the following element, there exist three types of juncture-verb construction throughout Kalahari Khoe. That is, an initial verb root is linked by the juncture to: a) another verb root in a multi-verb construction (henceforth just MVC), b) a derivational suffix, and c) a TAM suffix. This is exemplified in Ts'ixa, respectively, with the collocation of 'fly' and 'pass' in (3a), the benefactive suffix *-ma* in (3b), and the past suffixes *-ta* and *-ha* in (3b/c) (note in (3c) that the juncture does not always have a segmentally overt form for which see Section 4).

(3) Ts'ixa (Fehn 2014: 206, 223, 84)
   a. *gǀínì=sì tè xalásí=ḿ ǀxè* ***ǁabuù-à*** *ngèè*
      fly=F.SG NEAR.PST glass=M.SG LOC fly-JUN pass
      'The fly flew past the glass.'
   b. *kuú=ḿ mɪ̃̀ɪ̃=m̀ kà tí kà kɪ̃̀ɪ̃.k'èè=sà tí*
      dress=M.SG DEM=M.SG MPO 1SG POSS sister=F.SG 1SG
      kyɯ̀ɯ̃-à*-mà-nà-tà*
      buy-JUN-BEN-JUN-PST1
      'I bought that dress for my sister.'
   c. ***xóo****-hà ìì=sà*
      dry:JUN-PST3 tree=F.SG
      'the dry tree'

According to general knowledge about language change and concrete evidence from Khoe itself, these three types would appear to be related to each other historically, insofar as the final TAM and derivational suffixes requiring the juncture are plausibly derived via grammaticalization from final verbs in earlier MVCs. This applies in fact to two elements in the above Ts'ixa examples, namely benefactive *-ma* originating in Proto-Khoe *ma 'give' (cf. Voßen 1997: 440–441) and past3 *-ha* deriving from the lexeme *hấã̀* 'exist' (cf. Fehn 2014: 45). This assumed historical network is schematized in Figure 2 (see Section 4 for further discussion).

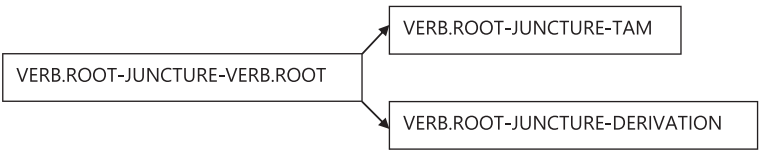

Figure 2: Semantic map of the three juncture-verb constructions in Khoe.

However, not all verb suffixes occur with the juncture. For example, it is not used with the impersonal/passive suffix *-e~*-i (Voßen 1997: 191). This motivated Kilian-Hatz (2008) to consider the juncture in Khwe to be an active marker, an untenable interpretation for the rest of Kalahari Khoe in line with Vossen (2010: 48). Likewise, the juncture does not co-occur with verbal object indexation in the languages that have it (Voßen 1997: 191). In most languages, some predicate markers are not suffixes but pre- or postverbal particles, which also do not trigger the verb to take the juncture.

In the following, I outline the three types of juncture-verb constructions in more detail. I start with the MVC type in which the juncture joins two (or sometimes more than two) verbs into a complex predicate, called variably verb compounding (cf. Nakagawa 2006, Visser 2010, Rapold 2014) or verb serialization (cf. Kilian-Hatz 2006, 2010; Haacke 2014). Across the group, juncture-based MVCs display a wide variety of functions, as illustrated in (4a–d) from Ts'ixa. The routinized use of one of the combined verb roots leads to asymmetrical combinations, as appears to be the case in the patterns of (4d). These are the potential locus of grammaticalization, which largely affects the final verb and turns it into a grammatical suffix to be discussed further below.

(4) Ts'ixa (Güldemann and Fehn 2017: 510–511)
   a. Sequential cause-effect
      nóxá=ḿ *ín=mà* *tí* *kò* ***muùn-à*** *'aàn*
      snake=M.SG DEM.REF=M.SG 1SG IPFV see-JUN know
      'I recognize this snake.'
   b. Accompanying manner
      tí *kò* ***pere*** *g‖àì*
      1SG IPFV flee:JUN run
      'I run like a fugitive.'
   c. Accompanying posture ('sit', 'stand', 'lie' etc. + verb root 2)
      tí *kò* ***nyúun-a*** *‖'àm̀* *katsí-sà* *'à*
      1SG IPFV sit-JUN beat cat-F.SG OBJ
      'I beat the cat sitting.'
   d. Action-path (verb root 1 + 'exit', 'enter', 'pass' etc.)
      nguú-ḿ *'à* *tí* *kò* ***g‖ai-a*** *ky'oà*
      house-M.SG LOC 1SG IPFV run-JUN exit
      'I run out of the house.'

MVCs as in (4) are hardly dealt with by Voßen (1997) but have received more detailed attention in descriptions of individual Khoe languages such as Nakagawa (2006) for G|ui, Kilian-Hatz (2006, 2010) for West Caprivi Khwe, Visser (2010) for Naro, Fehn (2014) for Ts'ixa, and Fehn and Phiri (2022) for northeastern Kalahari Khoe as a whole. Such constructions also exist in southeastern Kalahari Khoe, for example, Kua, as shown in (5).

(5) Kua (Chebanne and Collins 2017: 99)
   à-bè *kúnī* *ʔòà* ***n‖ài-ā*** *ǂãã̀*
   3-M.SG cart LOC jump-JUN enter
   'He just jumped into the cart.'

A second context of the juncture is before derivational suffixes. A relevant cross-Khoe survey has been provided by Voßen (1997, 2010). His work discusses close to twenty different derivations but only six of them regularly appear with the juncture in one or more of the languages surveyed. Table 1 lists them and presents language-specific examples. The only forms that require the juncture in all Kalahari Khoe languages, although not in all dialects, are the two deriving transparently from the final verb of an earlier asymmetrical MVC, namely dative *-ma and terminative-itive *-xu. Other suffixes display a higher degree of dialectal variation and only sporadically appear with the juncture, some possibly only in analogy to suffixes with a true verbal origin.

Table 1: Derivation suffixes with the juncture in Kalahari Khoe (Vossen 2010: 53–54).

Function	Reconstruction (source)	Example	
Reflexive	PK *-sani	***kúḿ-á**-hì*	‘hear oneself’ (Kua)
Directive-locative	PKalK *-!’o	***péé-á**-’ò*	‘jump ahead’ (Cara)
Dative or benefactive	PK *-ma (<PK *ma ‘give)	***gòḿ-á**-mà*	‘smoke for’ (Tsua)
Terminative-itive	PKalK *-xu (<PK *xu ‘leave’)	***giáḿ-a**-xú*	‘get rid of’ (Buga)
Causative III	PK *-si	***hĩĩ-hĩĩ-à**-sí*	‘use, seduce’ (llAni)
Repetitive or iterative	(? < *X+Causative III)	***kũú-a**-kásì*	‘keep going’ (Danisi)

The third type of juncture-verb construction involves suffixes in the TAM domain. The most elaborate paradigm of such suffixes exists in West Caprivi Khwe (cf. Köhler 1989: 122–123, Kilian-Hatz 2008: 98–105). While five past suffixes appear with juncture II, which is the form also found in other Kalahari Khoe languages, four non-past suffixes take juncture I, which is assumed to constitute a Khwe innovation. Köhler confidently derives all but one suffix from an earlier final verb of a MVC. The entire suffix system is given in Table 2.

Table 2: TAM suffixes with the juncture in Khwe (after Köhler 1989: 123).

Function	Form	Lexical source	Juncture
Present, imperfective	*-tè*	‘stand’	I
Progressive	*-n‡ùè*	‘sit’	
Habitual	*-ll\òè*	‘lie, sleep’	
Future	*-gòè*	? ‘approach, go to meet’	
Past hodiernal	*-tà*	‘rise, stand up’	II
Past hesternal	*-ll’òm̀*	‘sit/sleep on tree (of bird)’	
Past proximal	*-tĩ́*	‘be there, stay’	
Past remote	*-hĩ́*	‘do make’	
Perfect	*-hã́*	‘exist, be there’	

Cognates of inflectional suffixes requiring the juncture also exist in other Kalahari Khoe languages, notably in the past domain. One suffix is attested throughout the group, namely *-hã/ha marking perfect, current relevance, stative, and past (Voßen 1997: 365, cf. (3c) above from Ts’ixa). Voßen (1997: 231) also records the past form *-hĩ in Tshwa varieties – a likely cognate of Khwe *-hĩ́*. In Ts’ixa, Fehn (2014: 147–149) identifies three past suffixes requiring the juncture, *-hã/ha* for remote past, *-ta* for hodiernal past, and *-’o* for recent past, whereby the first two are assumed to be related to corresponding Khwe forms.

2.3 Morpho-syntactic scope

The very term "juncture" (or "linker" as per Vossen 2010) conveys the notion of a plain conjunction between an initial verb root and a following lexical root or grammatical suffix – a **symmetrical** structure that can be schematized as in (6). Likewise, the MVC subtype in particular appears to be viewed as a syntactically balanced structure by those authors who characterize it as plain verb serialization (Kilian-Hatz 2006, 2010; Haacke 2014).

(6) [[VERB.ROOT]-JUNCTURE-[VERB.ROOT or SUFFIX]]

There have been few alternative analyses, notably in Heine's (1986) historical account to be discussed in Section 2.5. However, there is ample synchronic evidence for an **asymmetrical** character of juncture-verb constructions. Such is provided especially by Nakagawa's data on Glui. With reference to the phonological effects of the juncture, Nakagawa (2006) aptly observes that it has the function of marking the altered verb root 1 of a "compound verb" (called here neutrally MVC), which can be transferred to other Khoe languages. That is, the segmental and prosodic interaction of the juncture concerns the verb root preceding it, while the following root or grammatical element remains unaffected. For the specific case of MVCs, this has been schematized by Nakagawa as in Figure 3 (VR = verb root).

INPUT				**OUTPUT**	
VR1	**+**	**VR2**	>	**VR1'**	**VR2**
⇑		⇑			
Alternation		No alternation			

Figure 3: Juncture-based MVC formation in Glui (after Nakagawa 2006: 66).

Other data from Glui point in the same direction. The variable reflexes of the juncture together with its preceding verb root not only represent a morpho-phonological unit but also form a morpho-syntactic sub-constituent. This is reflected by its possible separation from verb root 2, so that the two verbs that are normally "joined" by the juncture are no longer adjacent.

(7) G|ui (Nakagawa 2006: 76)

a. *ŋ!abo-sera ca **ts'ãũ-a** mãã*
sandal-F.DU 1SG make-JUN give

b. *ŋ!abo-sera **ts'ãũ-a** ca mãã*
sandal-F.DU make-JUN 1SG give

c. ***ts'ãũ-a** ŋ!abo-sera ca mãã*
make-JUN sandal-F.DU 1SG give
'Make a pair of sandals for me.'

The possible disjunction of the juncture-marked VR1 and VR2 is shown in (7). The expected MVC pattern with *ts'ãũ-a mãã* 'make for' establishing the benefactive derivation (cf. Table 1, Section 2.2) can be seen in (7a). In (7b) and (7c), however, the two verbs are interrupted by one or both arguments of the complex predicate, whereby the juncture is retained on VR1 (cf. also Fehn and Phiri (2022: 153) for such verb separation in Ts'ixa).

I thus conclude that juncture-verb constructions have a morpho-syntactic configuration that is more structured than commonly assumed in that initial verb root and juncture form a constituent opposed to the final verb root or suffix. The last element can be viewed as the head of the complex constituent in line with the overall head-final syntax of Khoe languages. I thus propose an analysis in terms of morpho-syntactic asymmetry in (8).

(8) [[VERB.ROOT-JUNCTURE]-VERB.ROOT or SUFFIX]

Treating MVCs with the juncture as verb serialization should now be reassessed against the canonical typological approach. Thus, Aikhenvald (2006: 1) and many others require that the verbs in a serial construction "act together as a single predicate, **without any overt marker of coordination, subordination, or syntactic dependency of any other sort**" [bold TG]. Juncture-verb constructions do not meet such a definition. Instead, they are better analyzed as non-symmetrical MVCs whose crucial element is a marker of dependency with scope over the initial verb root, turning it into a non-finite construct form.

2.4 Phonological variation

Since Köhler's (1981, 1989) earliest description of West Caprivi Khwe it is known that the juncture involves extensive segmental allomorphy as well as tonal perturbations on the initial verb. Voßen's (1997, 2010) surveys have focused on the segmental variation, which concerns the assimilatory interaction of the juncture

with the final mora of the preceding verb root, involving such different shapes as CV, V, and N, and, if relevant, variable vowel qualities. Voßen only deals with a single juncture, because the distinction between two such elements in the Khwe group is unique and assumed to be a later innovation. Rather than reconstructing a proper proto-form, the author simply posits a base form *-a*, which can be preceded by such consonants as *r* or *n*; these are explained in line with Heine (1986) by the earlier presence of such consonants in the second C slot of CVCV verb roots.

Language-specific descriptions focused on the co-occurring segmental and prosodic juncture variation. A crucial contribution is again Nakagawa (2006) on G|ui, introducing among other things the term "flip-flop" for the tonal changes, which is inspired by Haacke's (1999) description of this phenomenon in Namibian Khoekhoe (see below). Nakagawa identifies five juncture allomorphs in G|ui, which are represented in Table 3. Similar patterns are attested elsewhere, for example, in Khwe, Ts'ixa, Shua, and Tjwao (Kilian-Hatz 2008: 108–121, Fehn 2014: §4.2, Elderkin 2016, Fehn and Phiri 2022), whereby tonal flip-flop turns out to be universal and is thus a general effect of the juncture morpheme.

Table 3: Juncture allomorphy in G|ui (Nakagawa 2006: 66–67).

	Allomorph	**Verb base**		**Verb+Juncture before *mấà* 'give'**	
1	Flip-flop only	*kláá*	'skin'	***kláā*** *mấà*	'skin for someone'
2	Flip-flop and *a*-suffixation	*ɟíbú*	'wrap'	***ɟíbū-a*** *mấà*	'wrap for someone'
3	*a*-suffixation only	*q^{h}áñ*	'talk'	***q^{h}áñ-a*** *mấà*	'talk for someone'
4	*ná*-suffixation only	*k‡^{h}ōbē*	'rub'	***k‡^{h}ōbē-ná*** *mấà*	'rub for someone'
5	*r*-insertion only	*k!^{h}áē*	'stab'	***k!^{h}á-r-ē*** *mấà*	'stab for someone'

A segmental juncture is not attested in Khoekhoe varieties, so that they were excluded from Voßen's (1997, 2010) comparative discussion. However, the tone change called flip-flop associated with the Kalahari Khoe juncture also occurs in the formation of complex predicates in Khoekhoe. As mentioned, the very term "flip-flop" was in fact coined by Haacke (1999) in his detailed tonal analysis of this language. Based on the research findings of this author, Rapold (2014) advanced a hypothesis that is crucial for the topic at issue here. He surveyed the types of complex predicates in Namibian Khoekhoe where weak flip-flop occurs and concluded that there is considerable overlap between them and semantically and formally related contexts of the Kalahari Khoe juncture (cf. Table 1 and 2 above).

Table 4 shows that all but one derivational element and the perfect/past marker from *hãã* 'exist' of Kalahari Khoe are also attested with weak flip-flop on relevant Khoekhoe verbs. Rapold thus concludes that the prosodic phenomenon

Table 4: Kalahari Khoe juncture vs. Khoekhoe weak flip-flop (after Rapold 2014).

Grammatical context	Kalahari Khoe (juncture)	Khoekhoe (weak flip-flop)	Khoekhoe marker
Reflexive	(✓)	(✓)	*-sèn*
Directive-locative	(✓)	✓	*ʔ!ŏá* = ‘meet’
Dative-benefactive	✓	✓	*-pǎ*
Terminative-itive	✓	✓	*-xùű* < ‘leave’
Causative III	(✓)	(✓)	*-sì*
Perfect-past	✓	✓	*hǎǎ̀* < ‘exist’

Note: (✓) attestation restricted

in Khoekhoe is a late developmental stage of the verb juncture in Kalahari Khoe. That is, the segmental loss of the juncture is found in Kalahari Khoe only with some verbs, while its reduction to a mere supra-segmental morpheme has been completed in Khoekhoe. This implies that the juncture should be reconstructed back to Proto-Khoe rather than just one subbranch.

2.5 Historical origin

Against the background of Voßen’s (1997) assumption of a basic form *a*, the juncture has been subject to various attempts to assess its origin or at least its relation to other grammatical elements. Before discussing two more concrete historical hypotheses, I briefly mention various other suffixes in Khoe languages that may appear akin to Voßen’s juncture base form *a*. Some discussions of the juncture mention them because they partly have a linking function, or at least a morphosyntactic behaviour somewhat similar to the juncture.

(9) Naro (Visser 2010: 181)
thuu=r ***bóà-a***
PST=1SG.SBJ see-PFV
‘I have seen’

(10) Naro (Visser 2010: 181)
ǂúú-a *te*
head-LINKER 1SG
‘my head’

(11) G|ui (Nakagawa 2013: 400)
ʔà-bì ***!áĩ̀*** ***jà*** *ǂáó*
3-M.SG good LINKER heart
'He is good in the heart.' (= He is happy)

(12) Namibian Khoekhoe (Haacke 2014: 139)
ǂgàǹ-à*-dòm̀* < *ǂgàǹ-xà-dòm̀*
be.close-ADJR-throat
to become hoarse

First, Naro possesses a perfective verb suffix *-a*, shown in (9). Second, there is an *-a* attaching to the bare noun in one type of possessive construction in Khwe (called "genitive" by Kilian-Hatz 2008) and Naro (called "linker" by Visser 2010), as illustrated for Naro in (10). Third, G|ui has a morpheme *a*, possibly a suffix, which links predicative adjectives to body part nouns conveying experiencer constructions of the pattern "adjective-noun-*ed*", as in (11). Finally, a suffix *-a* in Namibian Khoekhoe, as in (12), links a verb and a noun for deriving a complex verb stem; it is assumed to be a shortened version of the adjectivizer *-xa*.

It should be clear from the brief characterizations and examples that none of these elements is a good match of the verb juncture at issue, because they attach to different hosts in distinct grammatical contexts and do not display the allomorphy or cause the prosodic changes typical for the juncture. The situation is arguably different for two other elements, which Heine (1986) and Elderkin (1986) have entertained to be related to the juncture; both authors deal, like Voßen (1997), with a single morpheme *-a*.

Heine (1986) traces the juncture back to an identificational marker *'a*, called by him "copula", which is attested in some Khoe languages. This *'a* marked different types of nominal constituents, as schematized in his complex grammaticalization network in Figure 4.

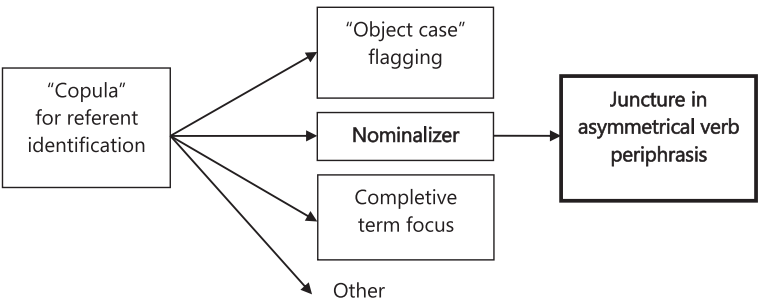

Figure 4: Semantic map of the identification particle *'a* (after Heine 1986).

(13) !Ora (Meinhof 1930: 53, 61)
ham */xa-b-a* *tje* *ta* ***!ũ*** ***’a*****-b** *ka?*
which side-M.SG-? 1PL FUT go “COP”-M.SG want
‘Nach welcher Seite wollen wir gehen?’ [Which side do we want to go to?]

Heine’s hypothesis regarding the juncture as derived from some nominalizing element relies heavily on a single sentence from Meinhof’s (1930) description of the extinct Khoekhoe language !Ora, reproduced in (13). The crucial part is the final string *!ũ ’a-b ka* with the relevant *’a* followed by *-b*, which with all probability is the person-gender-number marker (henceforth just PGN) for (third-person) masculine singular. Heine (1986: 13–14) analyzes the one-off pattern [[VERB ***’a***-PGN] AUXILIARY] as a verbal periphrasis in which the “copula” *’a* is said to nominalize the preceding content verb. Meinhof (1930) himself explicitly admits not to understand this string, and it is indeed opaque both in general and within the grammar of !Ora, so that Heine’s syntactic analysis must be regarded as ad-hoc.

(14) [[VERB-***’a***-PGN]-AUXILIARY] > [VERB-***’a***-Ø-GRAM]

Heine further proposes that the grammaticalization ended in !Ora at the above stage but progressed further in Kalahari Khoe. As schematized in (14), the PGN would have been lost and the “copula” *’a* developed into the juncture, the following auxiliaries becoming TAM markers. While Heine (1986) did not treat juncture-based derivational suffixes and MVCs, Kilian-Hatz (2004) and Vossen (2010) extended this hypothesis at least to the first domain.

Elderkin (1986) entertains another hypothesis. He derives the juncture from a conjunction *’à* that came to form a phonological word with the preceding verb root. He assumed that a conjunction of this shape no longer exists in modern Khoe (see also Vossen 2010: 47) but later research revealed the existence of such a predicate coordinator in such languages as Naro, Ts’ixa, Shua, and Tjwao (cf. Fehn and Phiri 2022). Haacke (2014) even equated this *’à* with the juncture in Naro on the basis of examples like (15).

(15) Naro (Haacke 2014: 131)
a. *ga-sa* *ko* ***ǁõa*** ***’a*** *kx’aa*
[PRO-F.SG IPFV descend] ?JUN drink
b. ***ǁõa****=s* *ko* ***’a*** *kx’aa*
[descend=3F.SG.SBJ IPFV] ?JUN drink
Both: ‘She is coming down to drink.’

However, the examples in (15) reveal considerable differences of the coordinating *'a* vis-à-vis the juncture in that the former combines a complex clausal entity with a following verb (phrase) and need not be adjacent to the first verb, as is the case in (15b). Evidence to the same effect is presented by examples of the conjunction *'a* (written orthographically as *a*) in Visser (2010), who explicitly distinguishes this element from the juncture suffix.

(16) Naro (Visser 2010: 180)
tàà-è**=r* *ko* ***a *!õò* *tama*
[defeat-PASS=1SG.SBJ CONT] CONJ [go not]
'I am defeated and don't go.' > 'I can't go.'

Thus, in (16) negation is not shared between the coordinated predicates, the first verb is marked for passive voice, which precludes the real juncture, and *'a* is detached from the first verb. As was shown above in examples with the juncture, however, sharing of clause operators and voice as well as adjacency between the initial verb and the gram itself are defining characteristics of such constructions in Kalahari Khoe. The distinct nature of the two elements is confirmed by a comparison of their constructional meaning, which can be seen in the minimal pair in (17): the juncture in (17a) expresses a single event, while the conjunction in (17b) renders a sequence of two separate events.

(17) Kalahari Khoe (Visser 2010: 179–180)
a. ***!xóó-(a)*** *gùi*
hold-JUN lift
'pick/lift up'
b. ***!xóó*** ***a*** *gùi*
hold CONJ lift
'hold/touch and (then) lift'

Overall, the two historical scenarios proposed by Heine (1986) and Elderkin (1986) are problematic for several reasons. First, the identification particle as well as the conjunction of the form *'a* still exist in modern Khoe languages and are clearly distinct from the juncture. Moreover, the authors do not account for the absence vs. presence of the glottal stop between *-a and *'a*, which is not trivial in view of the fact that [ʔ] in Khoe is phonemic. Likewise, the prosodic effects associated with the juncture (see Section 2.4) are not found on the elements preceding the conjunction or the identification particle. Finally, while morpho-syntactic changes certainly occur in grammaticalization, the authors

fail to present detailed scenarios as to how the purported source element became a suffix between a particular type of host and a particular set of following elements.

Last but not least, all previous hypotheses start out from a reconstructed juncture of the form *-a. The following section brings in data from Khoe's extinct relative Kwadi, which provides a new perspective on this and other issues revolving around the history of the Khoe juncture. That is, in the quest for further grammatical comparisons for assessing Kwadi's genealogical status, I entertain another potential morphological cognate by observing that the Kwadi suffix "*-la* (and its allomorphs) seems to be a marker of non-finiteness – this element and other verb morphemes potentially inform the historical analysis of the juncture in Khoe" (Güldemann 2010: 14–15) – an idea I flesh out in Section 3.

3 Complex verb constructions in Kwadi

3.1 The volition construction with *-(a)la*

The first relevant Kwadi structure is straightforward, despite the scarcity of data. The less than a dozen tokens present an overall consistent picture according to which a verb root is joined with a final auxiliary 'want' by means of a suffix *-(a)la*, as exemplified in (18).[2]

(18) Kwadi (Westphal 1964/5; Güldemann 2001: 53, 56)

a. *ta* *kʼʼɔlɛ* ***ɲwala****-xɛ* cf. *ʔʲũ(ũ)* 'eat' (Fehn and Rocha 2023, Suppl.: 64)
1SG meat eat:?-want
'I want to eat meat.'

b. *ta* *ᵑǀʼámɛ* ***ʾõala****-xɛ* cf. *ʔũã* 'buy' (Fehn and Rocha 2023, Suppl.: 62)
1SG knife buy:?-want
'I want to buy a knife.'

2 The Kwadi data below are from Westphahl's (1964/5) fieldnotes. These consist of lose sheets of paper, which I copied and then numbered in the order they were in when first consulting them. Others may have used the fieldnotes afterwards and reordered the lose sheets, so that the page numbers in the following examples from my unpublished morphosyntactic analysis (Güldemann 2001) are unlikely to be recoverable from the original pages in the archive. While the linguistic annotation of the examples is mine, I did not change the recurrently inconsistent transcription.

This pattern represents a periphrastic construction conveying volition in a morpho-syntactic configuration that is compatible with Kwadi's overall head-final syntax. In the structure [[VERB-*(a)la*]-*xe*], the final auxiliary 'want' governs a verbal complement suffixed by *-(a)la*, which itself appears to encode the dependent non-finite status of its host. Note that the initial *a* of *ala* only appears rarely and could merely be the effect of regressive assimilation from the suffix vowel onto the verb root, instead of being a genuine part of the suffix.

3.2 The intransitive reduplication stem with *-la*

A recurrent but far more intricate phenomenon in Kwadi, referred to already by Westphal (1963: 247) and Güldemann (2013a: 262), are complex verb stems. In terms of token frequency, they happen to establish the most prominent verb pattern in Westphal's data. This does not necessarily reflect its central role in the language but could just as well be an artifact of the content and nature of his data elicitation. Whatever its status, it reflects a morphological pattern I argue to inform the historical comparison with the Khoe family.

The entire phenomenon is formally diverse and thus difficult to describe precisely – also owing to the lack of sufficient and/or coherent data, which to a large extent arises from the preliminary character of Westphal's transcriptions. This problem needs to be taken into account with respect to the following discussion. The basic pattern can be characterized as a stem formation that involves the reduplication of (part of) the verb root and the insertion of a suffix *-la*, which in certain tokens is transcribed as stronger *-da*, weaker *-ya*, and nasal *-na*.

Table 5: Four patterns of reduplication stems in Kwadi.

Pattern	REDUPLICAND	*-la*	=ROOT	Number of verb lexemes
I	CV(V)	*-la*	=CV(V)	25/26
II	CV	*-la*	=CVN	3/4
III	CV	*-la*	=CVCV(CV)	6/7
IV	CVCV	*-Ø*	=CVCV	6/7

In Table 5, I identify four different sub-patterns, which appear to depend on the shape of the input root and appear to target with very few exceptions two syllable templates as output, namely σσσ in the case of the patterns I and II, and σσσσ in the case of III and IV, whereby the second syllable is almost universally /la/. The

four patterns display a diverse frequency in terms of verb lexemes, as shown in the rightmost table column.[3]

(19) Kwadi (Westphal 1964/5; Güldemann 2001: 62)
ta ***kx'ʊ-la****-kx'ʊ*
1SG DUP-?-fear
'I am afraid'

The most frequent reduplication type I is illustrated in (19). It also subsumes a few verbs ('bite', 'buy', 'cough', and possibly 'dance') where the base apparently has a diphthong and it remains unclear whether the reduplication process copies both or only the first vowel.

(20) Kwadi (Westphal 1964/5; Güldemann 2001: 80, 81)
a. ***kú-lá****-kũŋ* 'hear'
b. ***/ʱũ̀-dà****-/ʱũŋ* 'smell'
c. ***sé-lá****-sèŋ* 'sleep'
d. ***kxá-lá****-kàm.mà* 'clap'

Potential cases of pattern II, given exhaustively in (20), are few and provide an inconsistent picture. The verb 'hear' has an alternative in pattern III; 'hear', 'smell', and 'sleep' involve a final velar nasal in the base, which could well be just a nasal vowel changing the structure to CṼ-*la*=CṼ of pattern I; and the base of 'clap' differs significantly from its reduplicand.

(21) Kwadi (Westphal 1964/5; Güldemann 2001: 68)
ta ***tu-la****-tumu*
1SG DUP-?-swallow
'I swallow'

Type III, as in (21), can be explained by a targeted syllable template σσσσ that simplifies an expected pattern **CVCV(CV)**-*la*=**CVCV(CV)** of a polysyllabic base root by reduplicating only the first syllable to **CV**-*la*=**CV**CV(CV). The data only contain two

3 Two verbs appear to occur in more than one pattern, explaining the alternative numbers. They are 'hear' in the patterns II and III (*ku-la-kũŋ* from *kũŋ* vs. *ku-laa-kumu* from *kumu*) and 'sing, (dance)' in the patterns I and IV (*'e-la-'e* from *'e* vs. *'ela-'ela* from *'ela*). These data may be due to erroneous transcription and/or morphological analysis rather than represent genuine lexical alternation.

cases with a trisyllabic base ('like; lick, taste' and 'write'), the second of which is a Kuvale borrowing.

(22) Kwadi (Westphal 1964/5; Güldemann 2001: 52)
a. *tà* ***wólá****-wòlà*
1SG DUP-work
b. *tà* ***wó-lá****-wòlà*
1SG DUP-?-work
'I work'

Finally, pattern IV looks at first glance like full reduplication, as in (22a). However, almost all verb bases in this pattern have a second syllable *la* (or in one case *da*). The single exception is *taŋga-taŋga* from *taŋga* 'read' – a formation based on a Kuvale loan. In Table 5, I give the account in terms of full reduplication but without the last case, the reduplicand could also be viewed to be just the initial **CV** of the lexical root followed by grammatical *-la*, as in (22b), so that pattern IV could be subsumed under III.

The hypothesis about output constraints related to weight and template of the root base also receives support from the unique case of *la-labɔla* from *labɔla* 'speak' (cf. (23) below). While the output would suggest yet another pattern *la*=CVCVCV, which is close to but not identical to pattern III, I assume that this verb is another exception due to its initial syllable being itself *la*. Pattern III is expected to yield *la.la.labɔla*; so the shorter form encountered may derive from dropping one *la* for reasons of weight and/or euphony.

Overall, I consider pattern I to be the original and all others to be derived from it in one way or another in connection with different verb base shapes. Thus, the phenomenon as a whole is assumed to have started out from a structure [[REDUPLICAND-*la*]-VERB.ROOT], in which all components were monosyllabic.

Table 6: Conjugational forms in Kwadi attested with the reduplication stem.

Form	(Possible) meaning	Example
stem	Present ~ progressive	(23a)
stem-*na*	Present ~ progressive	(23b/d)
ka stem[4]	Future	(23c)

4 Cf. the future form of Kuvale, the target of language shift, which has a verb prefix *-ka-*. Thus *mi-**ka**-popya* 'I will speak' (Westphal 1964/5, Güldemann 2001: 58).

Reduplication stems are found in the data in three different TAM contexts of the attested conjugation system, as listed in Table 6 and exemplified with one verb in (23a–c).

(23) Kwadi
  a. (Westphal 1964/5; Güldemann 2001: 71)
     tá ***lá****-lábɔ̀là*
     1SG DUP-speak
     'I speak.'
  b. (Westphal 1964/5; Güldemann 2001: 58, 71)
     tá ***lá****-lábɔ̀là-nà*
     1SG DUP-speak-TA
     'I speak.'
  c. (Westphal 1964/5; Güldemann 2001: 58)
     ta ka ***la****-labɔla*
     1SG FUT DUP-speak
     'I will speak.'
  d. (Westphal 1964/5; Güldemann 2001: 71)
     ta kwade tʃĩ lapa^{bɔ}la-na
     1SG Kwadi ? speak-TA
     'I speak Kwadi.'

Given the profile of the three TAM forms, one is tempted to associate the stem pattern with imperfective meaning to help identify some more general common denominator. However, a quite different but significant observation about the occurrence of the stem pattern emerges from the contrast between (23b) and (23d) and concerns syntax. That is, the base form of the verb is used in (23d) where it is preceded by the object argument *kwade tʃĩ*' 'Kwadi language'. Examples (24)–(26) present further minimal sentence pairs with one and the same verb but different syntactic configurations.

(24) Kwadi (Westphal 1964/5; Güldemann 2001: 36, 71)
  a. *ala* ***ᵗnyũ-la****-ᵗnyu*
     1PL DUP-?-eat
     'We (are) eat(ing).'
  b. *ta kɔ́-la ʔnu*
     1SG meat-? eat
     'I eat meat.'

(25) Kwadi (Westphal 1964/5; Güldemann 2001: 51)
a. *ta* ***pɛ́-la****-pɛ́*
1SG DUP-?-put
'I put.'
b. *tshố_khàʃʲà* *pɛ́*
in.front put
'Put in front.'

(26) Kwadi (Westphal 1964/5; Güldemann 2001: 53, 63)
a. *ta* ***kɔ̃́-lɑ̃́****-kɔ̃̀*
1SG DUP-?-go
'I go.'
b. *ta* *thú-la:* *kõ*
1SG night-? go
'I (will) come [presumably: go] at night.'

These data suggest a more general complementary distribution: reduplication stems lack preceding objects or adjuncts, while sentences with such constituents lack the marked stem pattern (except for a single and doubtful case). This apparent regularity does not just indicate that the reduplication stem is associated with **intransitive** predicates. The fact that the string [REDUPLICAND-*la*] appears in linear terms where non-verbal particpants, including verb complements, occur also suggests that both constituent types can be equated. The reduplication stem would then be (derived from) a hierarchical syntactic structure in which the final verb root is the head that controls a dependent verb form, just like a plain verb controls its argument. It should also be observed that some preverbal non-subject constituents are marked themselves by an element *la*, as is the case in (24b) and (26b). The exact nature of this element remains unclear but if related to the verb affix *-la-* of the reduplication stem, the present hypothesis would, if anything, be supported.

The phenomenon whereby a complex predicate comprises a verb root and a cognate root copy (in potentially reduced form) may look strange at first glance but is in fact quite common elsewhere in Africa and beyond (see Bond and Anderson (2014) for an extensive cross-African survey). There are different variants that can be placed on a scale between more syntactic and more morphologized forms but their ultimate origin appears to lie in constructions of a marked information structure with mostly predicate-centered focus. For the more syntactic end of the scale, reference can be made to such cases as Ewe (cf. Essegbey 1999) featuring so-called "inherent complement verbs" in cognate-object constructions triggered in intransitive clauses. A morphologized variant may be found in certain Chadic languages

which possess conjugation paradigms with root reduplication (cf., e.g., Wolff (2007) for Lamang and close relatives).

The apparent restriction of the reduplication stem in Kwadi to intransitive clauses may indicate its persistent syntactic nature, despite its strongly morphological appearance, but the insufficient data do not allow one to assess this issue conclusively. In any case, I conclude that the reduplication stem arguably also originates in a hierarchical structure where *-la* marks the initial verbal constituent that is dependent on a following cognate verb root.

3.3 Summary

Summarizing the two preceding sections, Kwadi possesses two complex verbal predicates with similar morphemes. It is not fully clear but probable that *-(a)la* and *-la* are cognate, as their constructions can be analyzed in a parallel fashion, as shown in (27).

(27) Kwadi

a.	[[VERB.ROOT	*-(a)la*]	-'want']	Volition construction (Section 3.1)
b.	[[VERB.ROOT	*-la*]	-VERB.COGNATE]	Intransitive reduplication stem (Section 3.2)

The initial strings [VERB-*(a)la*] are implied to originate in a non-finite verb form depending syntactically on the final verb. Westphal himself, although never coming to provide a fuller and explicit description and analysis, had the same intuition when speaking about the "formation of verbo-nominals (infinitives) with an infix *-la-*" (1963: 247).

4 Khoe-Kwadi and the history of the Khoe juncture

In Section 2 I have provided an updated survey of juncture-verb constructions in the Khoe family with several crucial findings. Following Rapold (2014), such a morpheme should be reconstructed for the entire Khoe family, not just its Kalahari branch. This originates in an asymmetrical MVC of the form *[[VERB.ROOT-JUNCTURE]-VERB.ROOT]. The final verb of this hierarchical syntagm is the head (developing in certain environments to a grammatical suffix), while the initial verb is a dependent form controlled by the former. The juncture itself causes tonal change

on the preceding verb and marks it as in construction with a following lexeme or gram, thus functioning as a dependency marker. The major open problem is to account for the juncture's segmental allomorphy. The available hypothesis by Heine (1986) and Voßen (1997, 2010) of an original *-a whose modern allomorphs in *-r(a)-* and *-n(a)-* are due to etymological consonants in the preceding verb root does not provide a fully plausible explanation of the modern picture (cf. Voßen 1997: 358–359).

This is where Kwadi comes into play: as argued in Section 3, Kwadi possesses two asymmetrical MVCs of the original structure [[VERB.ROOT-*(a)la*]-VERB.ROOT]. In view of its virtual identity with the Proto-Khoe juncture pattern and the similarity between Kwadi *-(a)la* and the set of juncture allomorphs *r(a)*, *n(a)*, and *a*, a new hypothesis emerges: similar to *-(a)la* in Kwadi, the proto-Khoe form could have been *-ra rather than simple *-a. Its allomorph *-na* would reflect an areally recurrent phonetic variant of *-ra and its remaining shorter reflexes would be part of a historical cline of lenition and segmental erosion, as schematized in Figure 5. This scenario can be seen as a variation of a more general areal theme in that the segmental erosion of the juncture suffix restores the default bimoraic lexical template (cf. Nakagawa et al. 2023). Since the tonal changes caused by the juncture affect the preceding verb root, it comes as no surprise that this is its historically most resilient trace across the entire family.

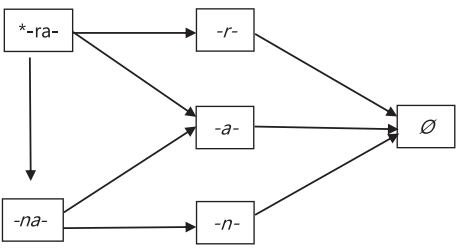

Figure 5: Allomorphy and segmental erosion of the Khoe juncture.

(28) Kwadi (Westphal 1964/5; Güldemann 2001: 56, 53)
ta ***kw-ãna****-xɛ* cf. *kũ(ũ)* 'go, walk' (Fehn and Rocha 2023, Suppl.: 22)
1SG go-?-want
'I want to go away.'

(29) Kwadi (Westphal 1964/5; Güldemann 2001: 56)
tàà ***ű-ná****-ʔnǜ* cf. *ʔʲũ(ũ)* 'eat' (Fehn and Rocha 2023, Suppl.: 64)
?1SG DUP-?-eat
'He [possibly: I] eat[s].'

It is also significant that some changes assumed for the Khoe juncture turn up in Westphal's (1964/5) variable transcriptions of the Kwadi suffix *-(a)la*, suggesting that its lenition was already a latent process there. This is shown in the volition construction in (28) and the intransitive reduplication stem in (29) where Westphal perceived the suffix as *-na*, apparently due to assimilation to the nasal vowel of the preceding roots.

Table 7 shows the comparison between the three subtypes of juncture-verb construction in Khoe and the two verbal complex predicates in Kwadi. All five patterns have a similar basic structure, suggesting the Proto-Khoe-Kwadi reconstruction in (30).

Table 7: Constructional comparison between the juncture in Khoe and *-(a)la* in Kwadi.

Domain		Khoe	Kwadi
Form		*-ra	*-(a)la*
Syntax		*[[ROOT-ra]$_{DEPENDENT}$-ROOT$_{HEAD}$]	[[ROOT-*(a)la*]$_{DEPENDENT}$-ROOT$_{HEAD}$]
Function	1	*ROOT-ra -TAM	ROOT-*(a)la* -TAM
	2	*ROOT-ra -DERIVATION	-
	3	*ROOT$_X$-ra -ROOT$_Y$	-
	4	-	ROOT$_X$-*la* -ROOT$_X$

(30) *[[ROOT-Ra]$_{DEPENDENT}$=ROOT$_{HEAD}$]

What differs between Khoe and Kwadi is the functional profile of the constructions derived from the proto-structure in (30). The only shared pattern is that in Function line 1 of Table 7, where the final main verb is an auxiliary that encodes TAM features. The three remaining patterns, two in Khoe and one in Kwadi, seem to be unique to each unit. How can this be reconciled with the hypothesis of common descent?

A first observation in this respect is that only the shared type for TAM marking in Function line 1 of Table 7 and the intransitive reduplication stem of Kwadi in line 4 fully conform with the head-final structure assumed for Proto-Khoe-Kwadi in that the syntactic head is straightforwardly also the semantic head. This is in line with my assumption that the asymmetric MVC of (30) is a typologically recurrent periphrastic structure in which a final auxiliary as the syntactic main verb controls a preceding non-finite verb, marked as such by means of the suffix *-Ra. This is harder to transfer to the two Khoe patterns in Function lines 2 and 3 of Table 7. Especially in the diverse MVC types, the initial dependent verb must often be construed as the main verb from a semantic and syntactic viewpoint. For example, in a sequential cause-effect pattern like 'see-know' = 'recognize' in (4a), or in a

motion-path pattern like 'run-exit' = 'run out' in (4d), it is the first verb that encodes the temporally prior and thus principal state of affairs.

However, this apparent tension of (earlier) syntactic constituency vs. current semantics should be scrutinized against the background of the areal context of the Khoe family. As opposed to Kwadi, Khoe languages are deeply entrenched in the Kalahari Basin area which also hosts head-initial languages of two other families, namely Kx'a and Tuu. These display head-initial serial verb constructions precisely in the functional domains of the two relevant types of juncture-verb construction in lines 2 and 3 of Table 7 (cf. Güldemann and Fehn 2017: 510–511, Fehn and Phiri 2022). It is thus not unlikely that these two patterns developed within the areal context of the Kalahari Basin and are thus innovative vis-à-vis Proto-Khoe-Kwadi and Kwadi.

There is also a formal parallel between juncture-verb constructions in Khoe and serial verb constructions in Kx'a and Tuu languages, where the verbs generally do not display a linker morpheme. I have proposed above the gradual decline of the segmental substance of a proto-juncture *-ra in Khoe, namely from CV over V or C to Ø, leaving in the end only suprasegmental traces (cf. Figure 5). Such changes have made the Khoe structure more similar to verb serialization and compounding in the contact languages of Kx'a and Tuu.

That juncture erosion is at least partly due to language contact rather than plain language-internal drift toward reduction of phonetic material in grams is suggested by its geographical distribution profile. In particular, Khoekhoe, the group that encroached most on the Kalahari Basin, is the one that completed the overall trend toward reducing the juncture segmentally. Güldemann's (2006: 116–119) study on the Cape linguistic area is the first work that proposed contact influence from local forager languages on those of colonizing Khoe groups in the domain of predicate formation and in particular MVCs. The hypothesis there must be amended in light of the above discussion. That is, Khoekhoe like its predecessor possessed the juncture-verb construction and thus certain types of complex predicates before the contact with Tuu, as convincingly argued by Rapold (2014). Assuming Tuu substrate influence in Khoekhoe MVCs remains viable, notably for the segmental erosion of the juncture, the increase in the variation of relevant MVC types, including the occurrence of structures with more than two verbs, and possibly the increase in the MVC token frequency. It does not account, however, for the salient presence of MVCs as such.

At the same time, the emergence of a good portion of MVC types in Khoe may still have been mediated by areal convergence, namely during the very formation of this family, which involved contact with Kx'a languages (see Güldemann 2008).

This resembles the situation for the marking of person, gender, and number for which Güldemann (2019) also argues for intensive early contact between Kx'a and Pre-Khoe.

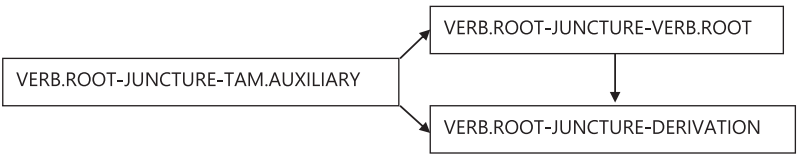

Figure 6: Historical chronology of the three juncture-verb constructions in Khoe.

The picture thus emerging is that Proto-Khoe possessed the inherited structure in (30) for auxiliary periphrasis but later language states came to re-use it increasingly for new functions expressed in Kx'a and Tuu contact languages by verb serialization. This also calls for a change of the theoretically expected semantic map in Figure 2 of Section 2.2 toward the different historical chronology in Figure 6, whose lack of semantic plausibility can be motivated by contact interference that is not steered primarily by language-internal factors.

Language contact may also be relevant for the emergence of the unique Kwadi structure in line 4 of Table 7 – here, however, with different contact partners. It is beyond doubt that Bantu languages had a strong impact on Kwadi and recent research (Güldemann, Smith and Bajić forthcoming) even entertains the idea that Kwadi may have a Bantu substrate. Against this background, it is relevant that constructions involving the repetition of the verb root are not just pervasive in Africa but in fact particularly prominent in the Bantu family, including languages in the northwest of the Kalahari Basin close to Kwadi (Güldemann and Fiedler 2022). Hence, it is not farfetched to assume that the intransitive reduplication stem is partly a Bantu legacy not shared by Khoe languages further south.

I close by way of a more general point on historical linguistics. Proposals of new non-obvious genealogical relationships, if viable, can crucially inform the evaluation of the genealogical units, which are implied in the hypothesis and have already been partially reconstructed. This is indeed the case for Khoe-Kwadi with Güldemann's (2004) establishment of a shared system of person-gender-number marking and the related Proto-Khoe reconstructions. It is also what I hope to have achieved with this contribution in that my proposal has considerably altered the historical reconstruction of juncture-verb constructions in Khoe by associating them with Kwadi predicate structures.

Abbreviations

1/3	first/third person
ADJR	adjectivizer
BEN	benefactive
C	consonant
CONJ	conjunction
CONT	continuative
COP	copula
DEM	demonstrative
DU	dual
DUP	reduplication
F	feminine
FUT	future
IPFV	imperfective
JUN	juncture
LC	language complex
LOC	locative
M	masculine
MPO	multi-purpose oblique
MVC	multi-verb construction
N	noun
NEAR.PST	near past
OBJ	object
PASS	passive
PFV	perfective
PGN	person-gender-number
PL	plural
PK	Proto-Khoe
PKalK	Proto-Kalahari-Khoe
POSS	possession
PRO	pronoun
PRS	present
PST	past
R	resonant
REF	referential
SBJ	subject
SG	singular
TA(M)	tense-aspect-(modality)
V(R)	verb (root)

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