The Kalahari Basin area as a "Sprachbund" before the Bantu expansion - an update[1]

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Abstract

Güldemann (1998 and following publications) not only challenged the "Khoisan" family hypothesis established by Greenberg (1950, 1963) and popular among non-specialists ever since, but also proposed the areal concept "Kalahari Basin" comprising the indigenous non-Bantu languages of southern Africa. If the linguistic isoglosses shared by these languages are compatible with a historical assessment in terms of multiple and partly long-standing contact, the areal approach is a viable explanation for the emergence of the modern linguistic panorama, as opposed to the genealogical hypothesis. Since the areal approach was proposed more than a decade ago research on linguistic isoglosses and contact-induced convergence across the Kalahari Basin has increased considerably. This article summarizes the earlier results, supplements them with new findings, thus giving more substance to the "Kalahari Basin" concept, and embeds it in the general discussion about linguistic areas.

1 Introduction

1.1 The three independent "Khoisan" families of southern Africa

The classification of the non-Bantu languages of southern Africa has been controversial since the first linguistic data were scrutinized from a historical perspective. By the second half of the last century linguists and non-linguists alike (but not necessarily language specialists) had largely settled down on Greenberg's (1950, 1963) lumping proposal of a "Khoisan" language family, which even includes two isolated languages in eastern Africa, Sandawe and Hadza. Before embarking on the following discussion, it is important to recognize that this genealogical classification can no longer be followed, first of all because Greenberg's evidence was insufficient and no progress has been made in more than 60 years in

substantiating his claim by means of standard historical-comparative methodology (cf. Westphal 1971; Sands 1998; Güldemann & Vossen 2000; Güldemann 2008b).

Lineages and (sub)branches	Languages (L) or language complexes (LC) and selected dialects and dialect groups	
(1) Khoe-Kwadi		
A Kwadi	single L†	
B Khoe		
Kalahari Khoe		
East	Shua:	Cara, Deti, |Xaise, Danisi, etc.
	Tshwa:	Kua, Cua, Tsua, etc.
West	?Ts'ixa	
	Khwe:	‖Xom, ‖Xo, Buga, Buma, ‖Ani, etc.
	G‖ana:	G‖ana, G|ui, etc.
	Naro:	Naro, Ts'ao, etc.
Khoekhoe	(Cape K.)† LC	
	(!Ora-Xiri) LC	
	(Eini)† LC	
	Nama-Damara LC	
	Hai‖om	
	ǂAakhoe	
(2) Kx'a		
A Ju	single LC:	North: Angolan !Xuun varieties
		North-central: Ekoka !Xuun, Okongo !Xuun, etc.
		Central: Grootfontein !Xuun, etc.
		Southeast: Tsumkwe Ju|'hoan, Epukiro Ju|'hoan, etc.
B ǂ'Amkoe	single LC:	ǂHoan, N!aqriaxe, Sasi
(3) Tuu		
A Taa-Lower Nossob		
Taa	single LC:	West: West !Xoon, (N|u‖'en)
		East: East !Xoon, 'N|oha, (N|amani), (Kakia), etc.
Lower Nossob	(|'Auni)†	
	(|Haasi)†	
B !Ui	N‖ng:	N|uu = (ǂKhomani) = (N|huki), (Langeberg), etc.
	(|Xam)†:	Strandberg, Katkop, Achterveld, etc.
	(ǂUngkue)†	
	(‖Xegwi)†	

Note: † = extinct, (...) = older data sources

Figure 1: The three lineages commonly subsumed under southern African "Khoisan"

The opinion of specialists is converging on the recognition of three independent lineages in southern Africa, as shown in Figure 1; the evidence for the assumed affiliation of Kwadi and ǂ'Amkoe, on which our knowledge is still incomplete, with Khoe and Ju, respectively, still needs to be extended (see Güldemann 2014a for the most recent survey on classification and terminology). While Kwadi is crucial for an understanding of the area's history, the following discussion excludes it, because the data on this extinct language are largely insufficient. This situation also holds for the Lower Nossob group of the Tuu family.

The three lineages, Tuu, Kx'a, and Khoe-(Kwadi), are intended here to constitute the Kalahari Basin area and referred to accordingly - this despite the fact that later colonizers like Bantu languages and Afrikaans may have come to share one or the other local feature through language contact (see §3 for some discussion).

1.2 Previous areal and contact-oriented research

While Greenberg (1950, 1963) is responsible for the heretofore popular but spurious "Khoisan" concept, he (1959: 24) is probably also the first who entertained contact-induced convergence in the major relevant area called here Kalahari Basin. Since he did not give any data and discussion, one can only speculate about the exact evidence he had in mind. Heine's (1976: 56) research on word order patterns in Africa yielded more concrete indications of areal convergence. It is clear, however, that any areal concept for the relevant languages must remain highly problematic from a methodological perspective as long as they are simultaneously considered to be genealogically related.

Such a problem ceases to exist under a non-genealogical approach. Inspired by Nichols (1992), this was pursued for the first time by Güldemann (1998) which introduced the present areal concept. Although prefiguring the idea of a linguistic area before the Bantu expansion, the aim of this initial study was not yet to show any homogeneity across the area but rather its overall diversity compared to other parts of the continent and its potential nature as a "residual/accretion zone", which would cast doubt on the "Khoisan" hypothesis. In this article, the area also had a narrower geographical extension, excluding languages which are viewed here as belonging to its northern and eastern periphery.

The study (ibid.: 152-4) did, however, identify several isoglosses across a subset of Kalahari Basin languages, thus establishing a typological group called since then "Non-Khoe". In the present terminology, this entity comprises two of the three Kalahari Basin lineages, viz. Tuu and Kx'a. Studies like Güldemann and Voßen (2000) and Güldemann (2000, 2013e) reiterate this finding and elaborate it in observing a basic typological split between this group on the one hand and Khoe-Kwadi on the other. The following list summarizes the Non-Khoe isoglosses proposed in the four aforementioned studies, all written but not published around the same time (some features are dealt with below; otherwise, the reader is referred for more details to the original works):

a)   low morphological complexity (in terms of Nichols 1992)

b)   phonological word often the same as lexical root

c)   neutral alignment

d)   clusivity

e)   verb-medial clause order

f)   very few or even no ditransitive verbs

g)   verb serialization

h)   head-initial noun phrase order with exceptional head-final genitive

i)   inalienable possession

j)   head of juxtapositional genitive conveys derivation and locative flagging

k)   multi-purpose oblique (MPO) preposition (possible circumpositional flagging)

l)   noun categorization by means of a special type of gender system

m)   irregular number marking, including nominal and verbal stem suppletion

The shared and often quirky properties of Kalahari Basin sound structure (cf., e.g., Güldemann (2001) for a more recent treatment of consonant systems) have been known since very early and mostly considered to be inherited from an assumed Proto-Khoisan. Under a non-genealogical approach these would be obvious signals of convergence.

Within the somewhat different context of historical research on Bantu languages, the areal homogeneity detected by Heine (1976) regarding the morphosyntax of genitives was discussed in more detail by Güldemann (1999); an additional finding of this study was that historically derived structures of nominal flagging and derivation are also widely shared across the Kalahari Basin.

Around the same time and later, research explicitly focusing on language contact started to identify non-phonological isoglosses that bridged the dichotomy of Non-Khoe vs. Khoe-Kwadi also on a more local scale. As will become clearer below, these are important for modeling the linguistic history of the Kalahari Basin as a whole.

Traill and Nakagawa (2000) treated a contact zone in the central Kalahari between G|ui from the Kalahari Khoe group of Khoe-Kwadi and the East !Xoon variety of the Tuu language Taa, and also indicated the involvement of western ǂ'Amkoe of the Kx'a family. Their discussion focused largely on lexical isoglosses. However, looking at Traill's (1980) phonological survey of the wider area, it becomes clear that the analysis of sound structure yields a similar picture, e.g., the languages' sharing of exceptionally large consonant inventories and a high frequency of clicks against non-clicks.

Güldemann (2002, 2006) focused on another zone where Khoe languages share a number of features with Non-Khoe neighbors, viz. the Cape area in South Africa where Khoekhoe languages from Khoe-Kwadi and !Ui languages from Tuu were spoken. The studies did not focus on shared lexicon but on structural similarities in phonology and morphosyntax, which are listed here (see the original sources and below for more details):

a) relatively small consonant inventories

b) high click frequency against non-clicks

c) fricativisation of complex egressive stops (in the north)

d) complex pronouns and clusivity

e) lexically fixed gender, unusual association of feminine sex/gender and large size

f) nominal derivation on non-canonical verbal, adjectival, and pronominal hosts

g) inclusory pronouns in "recapitulative" coordination

h) high load of verbal reduplication

i) particular distribution pattern of temporal predicate operators

j) lexically complex predicates

k) clause-second marking for sentence type and information structure

l) low semantic sensitivity of certain participant flagging

m) similar tagging of reported discourse and proposition (aka "complement") clauses

In §2 we recapitulate Kalahari Basin isoglosses from earlier research and entertain some new ones, the minimal requirements being that a feature is recurrent and involves at least one language in each family and the relevant languages are not all in contact today. Another important criterion is that a feature is sufficiently marked, locally or even better globally, so that multiple independent origin is less likely. The following isogloss list is not considered as complete, nor is every feature thought to be an established areal trait, because some isoglosses are not distributed evenly geographically and/or within families and are not even rigorously defined yet, so that their status as areal features requires more research.

2 Isoglosses across Kalahari Basin languages

2.1 Phonetics-phonology

Beach's (1938) ground-breaking work on the phonetics-phonology of Khoekhoe provided the first scientific basis for describing and comparing Kalahari Basin languages regarding their complex sound systems, in particular, typologically quirky clicks, as well as highly skewed root phonotactics. An equally important achievement was made later by Snyman (1975) and Traill (1985) with respect to the treatment of complex consonants, both clicks and non-clicks, and of vocalic phonation types comprising nasalization, pharyngealization, glottalization, breathiness, and stridency.

Phonetic-phonological commonalities across the Kalahari Basin languages have been taken for granted, also because they were normally thought to reflect common descent, even by Greenberg (1963: 67) who generally strived to exclude purely typological features as genealogical evidence. Later studies relying on a much better data base and more fine-grained analyses actually found a considerable amount of diversity between languages (cf. Traill 1980; Güldemann 2001, 2013e).

Nevertheless, the features shared across the three families are numerous enough, largely absent in Bantu outside the area (cf. Maddieson 2003, Hyman 2003, Kisseberth and Odden 2003), and often so quirky, that they represent an unmistakable signal of linguistic convergence. Moreover, the isoglosses affect different domains of sound structure such as consonant types, suprasegmental features, and phonotactics.

Segments shared across the Kalahari Basin are lingual ingressives aka clicks, glottalic egressives aka ejectives, uvular stops, aspirated obstruents, and tautosyllabic obstruent-obstruent clusters.[2] Their possible cooccurrence and a strong tendency to series formation are the most important factors for the emergence of some of the largest consonant inventories in the world's languages.

Of the relevant suprasegmental features, nasalization is universal (though overlooked entirely by Hajek 2005), and pharyngealization is attested in all three families; glottalization and breathy voice are so far restricted to the Non-Khoe lineages Tuu and Kx'a. In terms of pitch prosody, all Kalahari Basin languages share the feature of register tone systems (pace Clements 2000: 157-8) which are largely relevant for lexical distinctions; the number of tone levels, still controversial for some languages, ranges between two and four. This picture is different from Bantu, where tone has a strong grammatical import, with predominantly two tone levels, H and L, often with "significant asymmetries between H and L suggesting privative analysis as H vs toneless" (Kisseberth and Odden 2003: 59).

Another important isogloss is characteristic bimoraic patterns of lexical roots, viz. basic C(C)VCV, and derivative C(C)VV and C(C)VN, which also involve a very skewed phoneme distribution. For details, the reader is referred to Beach (1938), who discovered the phenomenon, and Nakagawa (2010), an innovative recent account. A significant finding is that East Kalahari Khoe languages, on which more reliable data have become available only recently, may not (fully) comply with these patterns (Chebanne 2000, Snyman 2000).

2.2 Lexicon

Lexicon shared across the area has always been assumed, and commonly invoked as evidence for "Khoisan". While Greenberg (1950, 1963) and similar studies by non-specialists lacked comparative rigor, Köhler (1975: 312-3) and Traill (1986) discussed in more detail substantial lexical isoglosses across family boundaries, being arguably due to inheritance.

However, shared lexicon is far more extensive in bilateral comparisons (cf. Köhler (1973/4: 185-9) for Ju|'hoan~Caprivi Khwe, Snyman (1974: 40-2) for Ju|'hoan~Namibian Khoekhoe, and Traill and Nakagawa (2000) for East !Xoon~G|ui; see also Sands (2001: 201)) - these would have resulted largely from language contact. Sands (2001) and Honken (2006) also recognized the possibility of extensive borrowing across the entire area. This

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[2]   There is an alternative analysis according to which the relevant complex consonants are not clusters (cf. Miller 2011). This approach does not alter the segments' status as shared and rare.

hypothesis was studied more systematically by Güldemann and Loughnane (2012) for one specific lexical domain, viz. body parts and related terms. Starting out from bottom-up reconstruction within the three secure lineages, many purported "Macro-Khoisan" lexemes can be argued to have emanated from a single family and entered the others by way of language contact. Dense lexical distributions in the Kalahari Basin can thus be explained alternatively by linguistic convergence, whereby at least three different patterns should be distinguished regarding their geographical scope and time depth. They are exemplified in Table 1 by cases of borrowing proposed by Honken (2006: 77-8, 81).

Borrowing pattern	Meaning	Tuu	Kx'a		Khoe-Kwadi	
		Taa	ǂ'Amkoe	Ju	KK	KalK
(I)	stupid, insane	-	-	Ju|'hoan *!xúmó*	Namibian *!XÒM-PŐÒ*	-
(II)	tin, box, pot	East !Xoon *tō̄ʰo*	-	Ju|'hoan *tŏ̀ʰò*	Namibian *TŎŎ-p/s*	Naro *tòó*
(III)	dirt(y)	-	Proto-Kx'a *|KX'URI		-	
			ǂHoan *|x'órī*	Owambo !Xuun *g|x'ǔrí̌* Ju|'hoan *|x'úrí + |'ùrí-hã̀*	Proto-KK *|kx'uri- > Namibian |'ÙRĪ-XÃ̀*	Naro *|x'ūrī*

Note: **bold** = **loan**, CAPITAL = LOAN SOURCE

Table 1: Examples for three major patterns of lexical borrowing in the Kalahari Basin

As mentioned above, a first pattern (I) is a multitude of localized contact situations, some of them more recent, illustrated in Table 1 by a borrowing from Namibian Khoekhoe into Ju\|'hoan. A second pattern (II) is cross-areal lexical transfer from prestigious Khoekhoe spoken by pastoralists into a larger number of forager (aka "San") languages from all three families, viz. virtually all Tuu languages, southern Ju varieties of Kx'a, and Naro and possibly other West Kalahari Khoe languages. This is a phenomenon with a time depth of several centuries in Namibia and even longer in South Africa. The example in Table 1 shows that Namibian Khoekhoe *tŏ̀ó-s/p* 'tin, can', ultimately from Afrikaans *doos* and/or German *Dose,* is the source of borrowings in at least three genealogically unrelated San languages. As proposed by Güldemann (2006, 2008a), one can posit a third pattern (III) in the form of substrate influence in various stages of Khoe-Kwadi, notably Kx'a influence on (Pre)-Khoe and Tuu influence on (Pre)-Khoekhoe. The relevant comparative series in Table 1 suggests a likely reconstruction *\|kx'uri 'dirt' for Proto-Kx'a whose reflexes in some modern Kx'a language(s) would have been the source of borrowing into Naro and Proto-Khoekhoe. The root regularly changed to *\|'uri* in northern Khoekhoe which expanded from South Africa into Namibia, providing there the possibility for Ju\|'hoan to borrow the changed root together with a Khoekhoe adjective suffix *-xa,* leading to a double reflex.[3]

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[3]   This comparative series is actually more complex than suggested by Honken (2006). The existence

Word borrowing aside, there are also other shared lexical patterns across the Kalahari Basin. One such feature is restricted numeral systems, in contrast with Bantu in and outside the area for which numerals higher than three/four are normal and can be partly reconstructed (cf., e.g., Hoffmann 1953). For Tuu and Kx'a, the few items above 'three' are descriptive forms or borrowings; even 'three' may sometimes not be a cardinal numeral but mean 'more than two' (cf. Güldemann (2012) for the Tuu family, Honken (2013: 253) for ǂ'Amkoe, and Heine and König (2013: 310) for Ju). For Proto-Khoe, Voßen (1997) only reconstructs simplex numerals for 1-4; some modern Kalahari Khoe languages do not even attest anymore for *haka 'four'. The only Kalahari Basin languages with higher numerals are pastoral Khoekhoe varieties like Nama and !Ora, as well as Naro (cf. Visser 2001) which is said to have borrowed numerals above 'three' from Khoekhoe in connection with a traditional game (Barnard p.c., Visser (2013: 190)). Hahn (1881: 10-6) discusses the possibility that the forms exclusive to Khoekhoe have emerged more recently, as some are morphologically complex and/or show suggestive relations to other lexemes.

Another example is perception verbs. Recent studies in the wake of Viberg (1984) like Brenzinger and Fehn (2013), Güldemann (2011), and Nakagawa (2012) demonstrate that languages in the Kalahari Basin show an increased incidence of lexical polysemy.

	SIGHT	HEARING	TOUCH	TASTE	SMELL	Languages
1		▓	▓			Ekoka !Xun (Ju, Kx'a); Shona, Ndonga (Bantu)
2		▓	▓		▓	Ju|'hoan (Ju, Kx'a)
3		▓	▓	▓		Shua (Khoe)
4		▓	▓	▓		G‖ana-G|ui (Khoe); East !Xoon (Taa, Tuu); ǂ'Amkoe (Kx'a); Venda, Tswana, Zulu (Bantu)
5			▓	▓		Caprivi Khwe, Ts'ixa, Naro (Khoe)
6			▓	▓		Namibian Khoekhoe, !Ora (Khoe)

Table 2: Polysemy in "experience" perception verbs across the Kalahari Basin[4]

of Kalahari Khoe forms like Danisi |'ùrí (Fehn field notes) indicates early borrowing on the part of Khoe and multiple independent reduction of velar ejectives to glottal stops. On the other hand, !Ui forms like |Xam |k''warri (Bleek 1956: 340) and N‖ng ‖k''ɔrre (Bleek 1956: 608, presumably with mistranscribed click) are likely loans from Khoekhoe, either from southern varieties like !Ora which did not undergo the relevant sound change or from early Khoekhoe before the change.

[4] Table 2 gives maximal meaning ranges of polysemous lexemes; languages may have more specific verbs in a certain domain in addition to a polysemous item. Languages and sources are as follows: East !Xoon (Traill 1994), Ekoka !Xun (König and Heine 2008), G‖ana-G|ui (Nakagawa 2012), Ju|'hoan (Dickens 1994), Khwe and Ts'ixa (Brenzinger and Fehn 2013), Namibian Khoekhoe (Haacke and Eiseb 2002), Naro (Visser 2001), Ndonga (ELCIN Church Council Special Committees 1996), Shona (Dale 1975), Shua (Fehn field notes), Tswana (Viberg 1984), Venda (Murphy 1997), Zulu (Doke et al. 1990), !Ora (Meinhof 1930), ǂ'Amkoe (Berthold and Gerlach, p.c.).

Following Viberg's classification into SIGHT, HEARING, TOUCH, TASTE and SMELL, Table 2 shows different polysemy patterns in the "experience"[5] class of perception verbs. All Kalahari Basin languages except Ekoka !Xun, Namibian Khoekhoe and !Ora have polysemy covering at least three sense modalities, and all but Ekoka !Xun and Ju|'hoan specifically conflate TOUCH and TASTE. The "maximal" pattern where polysemy covers all non-SIGHT modalities is found in the Central Kalahari in languages of all three families. The reason for proposing this as a Kalahari Basin trend is as follows: while Bantu languages close to/within the area like Venda, Tswana and Zulu also show this pattern, the overall trend in this family is different, namely less polysemy, and if any, rather conflating HEARING and TOUCH. This situation can also be observed in Bantu languages at the areal periphery like Ndonga and Shona, and seems to even have affected peripheral Kalahari Basin languages like Ekoka !Xun.

A distinct word class of ideophones was long thought to be absent in "Khoisan" (cf. Samarin 1971: 160-1, Childs 1994: 179). Given the salience of ideophones in Bantu, this might be viewed as an areal feature of Pre-Bantu southern Africa. However, ideophones do feature in such languages as |Xam (Bleek 1928-30: 171, 1956), Taa (Traill 1994), Ju (Dickens 1994, Heine and König 2008), and Namibian Khoekhoe (Haacke and Eiseb 2002). This finding and studies dedicated to the topic like Kilian-Hatz (2001) for Caprivi Khwe, Nakagawa (2012, in press) for G|ui, and Brenzinger and Fehn (2013) for West Kalahari Khoe in general call for a reevaluation of the earlier claim (cf. also Childs 2003: 120). The apparent lower frequency of ideophones compared to Bantu aside, there might still be areal traits in the Kalahari Basin concerning the semantic profile of this class, offering an interesting field for future research. In particular, the more recent studies report a notable richness and salience of taste and food texture ideophones; this is not typical in Bantu and possibly even remarkable cross-linguistically, because these are low on implicational hierarchies entertained for ideophones (cf. Dingemanse (2012: 663) where they are merely subsumed under a more generic category "other sensory perception").

Since lexical isoglosses beyond borrowing represent a largely untapped topic, future research on additional domains, e.g., metaphor, lexical taboo etc. are likely to yield new insights into Kalahari Basin contact history.

2.3 Morphosyntax

As mentioned, Heine (1976) noted the universal presence of head-final genitives in Kalahari Basin languages irrespective of word order elsewhere, and Güldemann (1999) treated the fact that such juxtaposed genitives are widely employed for expressing location, natural sex, and diminutive, which also results in host-final nominal flagging and derivation from the grammaticalization of compounds. This phenomenon extends to the marking of number and

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[5] This class was chosen from Viberg's (1984) three-way distinction (activity, experience, copulative), because it provided relatively complete and reliable data across the area.

gender, because former nominal heads could have encoded these categories and bequeathed them to grammaticalized structures, as illustrated in (1) from Taa and (2) from Ju|'hoan.

(1) *qáé*　　　　　　　*qáé-tû* (< *tuu 'people')　　> *qárú*
　　mother.3　　　　mother-ASS.P.4 [Common Taa]　mothers.4 [West !Xoon]
　　mother　　　　　motherfolk, mothers　　　　　　(field notes)

(2) *!xó-mà*　　　　*!xó-mhí*
　　elephant-DIM.S　elephant-DIM.P
　　little elephant, e. calf　little elephants, e. calfs　　(Dickens 2005: 27)

An exclusive-inclusive distinction in pronouns is also wide-spread in the Kalahari Basin; an early assessment is contained in Güldemann (1998). The feature has not been reconstructed to Proto-Khoe (Voßen 1997), and Güldemann (2002, 2006: 111-2) gives concrete evidence that the opposition in Khoekhoe is due to contact with Tuu languages. This indicates that clusivity entered Khoe languages only after contact with local Non-Khoe languages. Since clusivity has been attested in a few more languages, including the G‖ana-G|ui group of Kalahari Khoe (Ono 2010), the East Kalahari Khoe subgroup is now the only one without any language known to have the feature.

After Güldemann and Voßen (2000: 109) identified verb serialization as a universal feature in Non-Khoe, Güldemann (2006: 117-9) observed that "lexically complex predicates" (comprising serial and compound verbs) are also found in Khoekhoe and proposed that this is related to contact interference with Tuu. The short treatment suffered from an imprecise characterization of the relevant multi-verb construction(s) (henceforth MVC), which partly spurred the studies by Haacke (2014) and Rapold (2014). They righteously point out that MVCs in Kalahari Khoe employing the segmental "verb juncture" take care of functions very similar to those conveyed by linkless MVCs in Non-Khoe and Khoekhoe; moreover, Rapold provides convincing evidence that verb-juncture constructions were even a feature of Proto-Khoekhoe, contributing crucially to the emergence of modern link-less MVCs.

Before this background, and in contrast with neighboring Bantu languages, MVCs can be regarded as a prominent feature of the Kalahari Basin, straddling all major lineages in the area. The following non-exhaustive list of sources contains relevant data on this topic: Traill (1994), Güldemann (2013c, f) and Kießling (2013) on Taa; Haacke (1999, 2014) and Rapold (2014) on Khoekhoe; Collins (2002, 2003) on ǂ'Amkoe; Collins (2003), Dickens (2005) and König (2010) on Ju; Kilian-Hatz (2008) on Caprivi Khwe; Visser (2010) on Naro; and Güldemann (2013d) on |Xam. In addition, field notes were consulted from Berthold and Gerlach on the N!aqriaxe variety of ǂ'Amkoe, from Nakagawa on G|ui, and from Fehn on Ts'ixa and Shua. Note that the language-specific characterization of relevant structures as serial verbs, compounds, etc. does not always follow identical criteria.

We present below six different types of MVCs (mostly "asymmetrical" in terms of Aikhenvald 2006) which are attested in virtually all major subgroups of the three families (a lineage is also considered to possess the type if it is synchronically grammaticalized). This array does not attempt to be complete but only illustrates the extent of shared types across the area. Each example features under a. the N!aqriaxe dialect of the Non-Khoe language ǂ'Amkoe, and under b. the Kalahari Khoe language Ts'ixa employing the juncture.

(3)   Sequential cause-effect
a.   *mā ēn   !'áú   'n|áá*
        1S   TAM fall   sit
        I fell into a sitting position
b.   *noxá=m̄   ín=mà   tí   kò   muùn-à   'àὰn*
        snake=M.S DEM.REF=M.S 1S IPFV   see-JUNCT know
        I recognize this snake

(4)   Accompanying manner
a.   *mā nà   ‖qx'áā tsáá*
        1S   TAM   sing   come
        I am coming while singing
b.   *tí   kò   pere   g‖àì*
        1S   IPFV   flee:JUNCT run
        I run like a fugitive

(5)   Accompanying posture ('sit', 'stand', 'lie' etc. + V2)
a.   *mā !úí   !ōā   n|úbō*
        1S raise stand   talk
        I talk standing
b.   *tí   kò   nyúun-a   ‖'àm̀   katsí=sà 'à*
        1S   IPFV   sit-JUNCT beat   cat=F.S OBJ
        I beat the cat sitting

(6)   Path (V1 + 'enter', 'descend' etc.)
a.   *mā yā   !hhōōn |''ὸò   bōksī kì   !ōà   nā*
        1S IPFV   push   insert   box   MPO house LOC
        I am pushing the box into the house
b.   *nguú=m̄   'à   tí   kò   g‖ai-a   ky'oà*
        house=M.S LOC 1S   IPFV   run-JUNCT exit
        I run out of the house

(7)   Dative/Benefactive (V1 + 'give')

a.   *mā   yā   **n|ūbō   súú**   ām̀   sì   n!áā*
       1S   IPFV   talk   give   1S.POSS   POSS   friend
       I talk for my friend

b.   *'ém̀   tí   'à   k'oxú   ká   ‡uùn-à-mà*   (*mà* < 'give')
       3M.S   1S   OBJ   meat   MPO   buy-JUNCT-BEN
       (I asked him) to buy meat for me

(8)   Perfect/Current relevance (V1 + 'exist')

a.   *tyàm̄à   'n|āā   ā   kì   kātàbòksì   n!āqrè*   (*ā* < 'exist')
       dog   sit   RELV   MPO   box   bottom
       the dog sits at the bottom of the box

b.   *tí   tsxaan-hàn*   (*hàn* < 'exist')
       1S   become.tired:JUNCT-STAT
       I am tired

In some languages the last MVC type is an essential ingredient for a special pattern of TAM encoding discussed briefly by Güldemann (2006: 116-7): perfect~stative~relevance is marked exceptionally AFTER the verb or the entire clause.

It goes without saying that there exist other more localized MVC types which may also involve contact transfer. Thus, Güldemann (2006: 118-9) discusses the non-causative variant of the "switch-function" type (cf. Aikhenvald 2006); this has a western distribution in the Kalahari Basin in occurring in |Xam and various Khoekhoe varieties (cf. Haacke 2014 for new extensive data) as well as in Ju dialects (König 2010).

Another relevant feature Güldemann (2006: 119-22) discussed first as just shared between !Ui and Khoekhoe concerns markers for sentence type and information structure. These bisect the clause into a pragmatically specific prefield and a postfield containing the rest of the clause. While they are mostly particles, in |Xam the relevant element, whose several allomorphs are represented here as an underlying velar nasal =*NG,* is transcribed as being attached to the subject topic (cf. Güldemann 2013d: 421), as illustrated in (9).

(9)   *au   too=**gnn**   n|e   !ïi-ya*
       CONN   red.ochre=?   IPFV   be.red-STAT
       But/and ochre is red. (Güldemann 2013d: 428)

This feature, too, turns out to have a wider western Kalahari Basin distribution straddling all three families (cf. Güldemann and Witzlack-Makarevich 2013). Table 3 lists languages with such elements in declarative sentences; the diverse terminology in the fourth column betrays that their functional analysis is still far from conclusive.

Dialect or language	Family, branch	Form	Label	Source
Ekoka !Xun	Kx'a, Ju	*má*	Topic	König (2006)
Jul'hoan	Kx'a, Ju	*m*	Verb particle	Dickens (1994: 234, 2005: 44)
N!aqriaxe	Kx'a, ǂ'Amkoe	*ki*	-	Berthold and Gerlach (field notes)
East !Xoon	Tuu, Taa	*ń*	Indicative	Traill (1994: 193)
|Xam	Tuu, !Ui	=*NG*	Emphatic nominative	Bleek (1928-30: 87-8)
N‖ng	Tuu, !Ui	*ke*	Declarative	Collins and Namaseb (2011: 9)
Standard Khoekhoe	Khoe-Kwadi, KK	*ke*	(Indicative) declarative	Hagman (1977), Haacke (2013: 335)
!Ora	Khoe-Kwadi, KK	*tje*	Subjekt-Determinativ	Meinhof (1930: 49-50)

Table 3: Clause-second elements in declarative clauses in Kalahari Basin languages

Güldemann (2010b) discusses these elements in Tuu languages more extensively and presents data to the effect that \|Xam and Taa possess yet younger bisected constructions whose clause-second elements encode term focus and entity-central theticity; this provides a new perspective on the possible emergence and early function of clause-second elements. In some languages, the markers in declarative clauses are in complementary distribution with other particles marking questions, such as \|Xam *ba/xa*, N‖ng *xa(e)*, Khoekhoe *kha*, and the different reflexes of the interrogative particle in Ju reconstructed as *re by Heine and König (2013: 319). Visser's (2013) data on Naro seem to indicate that syntactic phenomena revolving around a clause-second syntactic pivot do not necessarily depend on a segmental marker of the kind described above but can be rendered by subject-referring PGN markers alone.[6] More in-depth morphosyntactic and discourse-oriented research on all relevant languages is required to clarify whether the different phenomena mentioned here are indeed related to each other, and if yes, what their underlying common denominator is.

Another intriguing feature, originally identified by Güldemann and Voßen (2000: 110) for Non-Khoe, also turned out to be of wider relevance: Tuu and Kx'a languages display an extremely versatile preposition, called here multipurpose oblique (MPO) marker,[7] which is virtually void of semantic content; it rather flags any postverbal term beyond the valency of a single transitive verb and thus marks a templatic syntactic clause slot rather than specifies the term with respect to its semantic relation to the predicate (cf. Güldemann 2004). Low semantic sensitivity of basic participant flagging also turns up in Khoekhoe in the form of the nominal suffix *-a* which marks both subjects and objects as long as they occur after the clause-second pivot (cf. Güldemann 2006: 122-3).

The limited import of semantics in certain participant flagging is related to yet another factor, namely the strong tendency that animacy often ranks higher than semantics for the assignment of a more central grammatical clause relation. This is one reason why in

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[6] Note that subject PGNs in Khoekhoe also occur in clause-second position immediately before the markers discussed here.

[7] Other terms are "linker" (Collins 2004), "transitive particle" (Dickens 2005: 38-9), and "transitive preposition" (Heine and König 2013: 313).

the Kalahari Basin, as opposed to neighboring Bantu, transitive patient and ditransitive recipient are frequently marked alike and the ditransitive theme follows the MPO (= "secundative" alignment in terms of Malchukov, Haspelmath and Comrie 2010), as illustrated by (10) from Ju|'hoan.

(10)   *dà'áma jàn |'àn ha bá   kò   màrì*
         child   good give 3S father   MPO money
         The good child gave his father money. (Dickens 2005: 40)

It is noteworthy in this respect that some Kalahari Khoe languages tend to use their postposition *ka* with a wide functional spectrum and that precisely this MPO-like postposition flags the ditransitive theme in ǁAni and Ts'ixa (cf. (7)b. above).

Another typologically remarkable feature in various unrelated Kalahari Basin languages is that relative-(like) constructions render nominal modification that is cross-linguistically conveyed by simple attributive numerals, other quantifiers, interrogatives, and even possessors. Ju varieties, as the most extreme case, show this entire range: the earliest such case recorded by Dickens (1997) is the verbal nature of deictics in Ju|'hoan, which Heine and König (2013) and Lionnet (2014) show to hold for the entire group; for the other categories see Dickens (2005) and Heine and König (2013). A similar situation holds in Taa, notably for deictics involving (earlier) motion verbs (cf. *tV('VV)-jà kV* (proximate) and *tV('VV)-sà kV* (remote); Traill 1994: 154), quantifiers (Güldemann 2012, 2014b), and attributive 'which' (Güldemann 2013c: 411). As shown in (11), the West Kalahari Khoe language G|ui uses its clausal attributive construction for a similar functional range.

(11)   [Noun_x *kà* MODIFIER PGN_x]
a.   *gǁàēkò kà ʔà-m̀   kì   mûũ sì*
       woman_x REL PRO-3M.S HOD.PST see   3F.S_x
       the woman who he saw today
b.   *ŋ!úū kà   ŋ|ìn   mà*
       house_x REL this   3M.S_x
       this house
c.   *ǂúù kà   ŋ!ūnā dzì*
       eland_x REL three 3F.P_x
       three elands   (Nakagawa p.c.)

This cross-linguistically remarkable phenomenon, which may involve several underlying factors, deserves more attention regarding its language-specific profile as well as its areal distribution.

Yet another feature attested in all three families is reduplicative causatives. In Non-Khoe it only occurs sporadically as in |Xam (Bleek 1928-30: 171) and Ju|'hoan (Miller-Ockhuizen 2001). It can be reconstructed, however, for Proto-Khoe (Voßen 1997: 350), so that the feature may have emanated from this family.

As a final example, dedicated/unique markers of associative plural, which typically though not exclusively combine with personal names and kinship terms, are also found in all three families. Both better known Tuu languages display such a marker, namely *-tu* in Taa (Güldemann 2013a: 238-9, see (1) above) whose status as an associative plural became evident only in later fieldwork, and *-gu* in |Xam (Güldemann 2006: 131, 2013b: 243). In Kx'a, the situation is not fully clear. In ǂ'Amkoe, no such marker has been found according to Berthold (p.c.). For Ju, Heine and König (2013: 304-5) report potentially relevant distinct plural markers, reconstructed as *sì and *sin, but do not comment on any semantic difference between them. However, Dickens' (1994: 263) information on *-sín* in Ju|'hoan, a reflex of *sin, clearly suggests that at least in some dialects this marker is an associative plural. A unique associative plural can be identified in Khoekhoe (cf. Hagman's (1977: 29) description of so-called '*hǻǻ* compounds'). Some Kalahari Khoe languages also possess such a marker, like G|ui (Nakagawa p.c.) and Ts'ixa (Fehn field notes), for which see (12).

(12) *thòò* *‖uùn-xà=dzì*   *n|gè* *‖ʔáàn-kù* *‖ʔáàn-kù* *ʔé.sì* *|xòà*
      DS   parent-**ASS.P**=3F.P   SEQ   fight-RCPR   fight-RCPR   3F.S   COM
      The mothers and theirs fought and fought with it. (Fehn field notes)

Comparing this distribution with Daniel and Moravcsik's (2005) world-wide survey, the feature may qualify as an areal trait of the Kalahari Basin, because all Bantu languages close to the area and recorded by these scholars, viz. Zulu, Sotho, and Luvale, only have an associative plural which is the same as the normal additive plural. For the record, as opposed to Bantu, Afrikaans has innovated such a marker in the areal context of the Cape, although its origin might not (exclusively) be due to contact with Kalahari Basin languages (cf. Nienaber 1994, Besten 1996).

2.4 Summary

Table 4 summarizes the (potential) isoglosses of §§2.1-3; feature values are as follows:

X	= frequent or even universal in relevant group
(X)	= common but with linguistic restrictions
language/dialect	= so far only attestation(s)
--	= absent
?	= insufficient/lacking data

The last case holds in particular for East Kalahari Khoe which is the least known group among the languages still spoken. A similar, yet different situation applies to Khoekhoe of Khoe-Kwadi and !Ui of Tuu: here most languages spoken previously in South Africa have become extinct before they could be documented sufficiently. Accordingly, X or a language name only refers here to the subset of documented varieties; they are |Xam and N‖ng for !Ui, and !Ora, Nama and other Namibian varieties for Khoekhoe.

Feature	Tuu		Kx'a		Khoe-Kwadi		
	!Ui	Taa	ǂ'Amkoe	Ju	KK	WKalK	EKalK
Phonetics-phonology							
1 Lingual ingressives = clicks	X	X	X	X	X	X	X
2 Glottalic egressives = ejectives	X	X	X	X	X	X	X
3 Uvular stops	N‖ng	X	X	--	--	X	Kua
4 Aspirated obstruents	X	X	X	X	X	X	X
5 Obstruent-obstruent clusters	X	X	X	X	X	X	X
6 Nasalization	X	X	X	X	X	X	X
7 Pharyngealization	X	X	X	X	--	Naro, G|ui	S. Kua
8 Register tone system	X	X	X	X	X	X	X
9 Specific lexical root phonotactics	X	X	X	X	X	X	?
Lexical structures							
10 Restricted numeral system	X	X	X	X	--	X	X
11 Specific perception verb conflation	?	X	X	Ju|'hoan	(X)	X	Shua
Morphosyntax							
12 Head-final genitive	X	X	X	X	X	X	X
13 Host-final locative flagging	X	X	X	X	X	X	X
14 Host-final derivation	X	X	X	X	X	X	X
15 Clusivity	X	X	X	X	X	G|ui, G‖ana	?
16 MVC: V1 cause + V2 sequential effect	X	X	X	X	X	X	X
17 MVC: V1 manner + V2	X	X	X	X	X	X	?
18 MVC: V1 posture + V2	X	X	X	X	X	X	?
19 MVC: V1 + V2 motion > path	X	X	X	X	X	X	X
20 MVC: V1 + 'give' > dative/benefactive	X	X	X	X	X	X	X
21 MVC: V1 + 'exist' > current relevance	X	X	X	X	X	X	X
22 MVC: non-causative switch-function	|Xam	--	--	X	Northern	--	--
23 Clause-second pivot	X	X	X	X	X	?Naro	--
24 Non-semantic participant flagging	X	X	X	X	X	(‖Ani, Ts'ixa)	?
25 Non-canonical clausal noun modifiers	(X)	X	(X)	X	--	G|ui	?
26 Reduplicative causative	|Xam	--	--	Ju|'hoan	X	X	X
27 Dedicated associative plural	|Xam	X	--	Ju|'hoan	Northern	G|ui, Ts'ixa	?

Note: EKalK = East Kalahari Khoe, KK = Khoekhoe, WKalK = West Kalahari Khoe

Table 4: Linguistic features shared across the Kalahari Basin

3 Discussion

From a continental perspective, the Kalahari Basin is one of several macro-areas in Africa. Given the results by Clements and Rialland (2008) and Güldemann (2010a), it must be distinguished first of all from the neighboring Bantu spread zone. This entails a certain risk to invoke features for the Kalahari Basin that define it only negatively in opposition to its

neighbor, which is genealogically homogeneous and has a specific linguistic signature with numerous shared features. Many such features are likely to be absent in any non-Bantu language and may thus give a strong signal of difference on an areal scale, which indeed holds for the Kalahari Basin.

For example, Kalahari Basin languages predominantly possess a gender system but lack the specific Bantu type. However, this fact is not an areal trait, because the Kalahari Basin is diverse internally in possessing two other distinct types along the basic split of Non-Khoe vs. Khoe-Kwadi (cf. Güldemann 2000). Another case in point is participant indexing on the verb. As opposed to Bantu, no Kalahari Basin language has subject cross-reference but Taa, Khoekhoe, ‖Ani, and possibly Deti have verbal object marking in addition to nominal objects - this is cross-linguistically marked. Pace Güldemann (2010a: 573-4), this should not be viewed as an areal feature either: the lack of subject indexing is typologically common and only a negative criterion with respect to the Bantu spread zone; while exclusive object indexing, though rare, is not really common in the entire Kalahari Basin. Clearly, areal isoglosses must not be negatively defined absences but rather substantial positive features; this is indeed the case for all those proposed in §2.

The homogeneous Bantu spread zone does, however, play an indirect role for the profile of the Kalahari Basin: the former has so-to-speak "sealed off" the latter from other similar areas in Africa, viz. those hosting more diverse non-Bantu languages. It is important in this respect that the Kalahari Basin displays non-trivial linguistic affinities to eastern Africa in nominal morphosyntax and phonetics-phonology; these are arguably diagnostic for a hypothesis according to which the Kalahari Basin prior to the Bantu expansion was part of an earlier, far larger linguistic area that coincided with what is called in geography "High Africa" and which would have been largely submerged by Bantu (Güldemann 1999, Güldemann 2010a: 578-9).

A history of "decay" also concerns the Kalahari Basin itself. Recall that so far we have spoken of it as a linguistic area before the Bantu expansion. This raises the question of what happened after the advent of Bantu (and yet other colonizing languages) to the Kalahari Basin languages on the one hand and to these colonizing languages on the other.

With respect to the first issue, the answer is straightforward, when looking at the history and current sociolinguistic status of the relevant languages: virtually all languages in South Africa and southern Namibia have become extinct, and most surviving ones in these and other countries are marginalized, endangered, or even moribund. That is, the Kalahari Basin in the present sense has been in a long process of dissolution through wide-spread language change and language loss induced by later population events. The data in Table 4 do in fact no longer reflect a situation in the present but rather a reconstructed approximation to the past, and the Kalahari Basin's likely prospects are that its former linguistic profile will vanish as a compact areal signal.

Nevertheless, and this relates to the second issue, it is far from disappearing completely, because it had a noticeable impact on later colonizing languages. We did not attempt here to systematically record whether or not a feature is also found in local Bantu languages and Afrikaans but only mentioned such cases to the extent they informed the establishment of the Kalahari Basin in the narrow sense. A detailed treatment of this wider topic is a project in its own right. Here we only give a first assessment of three important languages of the area with respect to the features in Table 4. They are, followed by sources used, Nguni (Poulos 1998, Doke 1992), Tswana (Cole 1955, Krüger 2006), and Afrikaans (Donaldson 1993). In addition to language-specific material, there is also considerable literature dedicated to language contact between these and Kalahari Basin languages. The sources most relevant here for Nguni and Tswana are Meinhof (1905), Lanham (1962), Louw (1986), Herbert (1987, 1990), Vossen (1997), and Güldemann (1999). The contact-induced formation of Afrikaans, whose regional, non-standard varieties are especially relevant and taken into account here, has also been studied increasingly (cf., e.g., Luijks 2001, Mesthrie and Roberge 2001/2).

Language	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16-22	23	24	25	26	27
Nguni	X	X	--	X	--	--	--	--	--	--	X	--	X	X	--	--	--	--	X	--	--
Tswana	(X)	(X)	--	X	--	--	--	--	--	--	X	--	X	X	--	--	--	--	X	--	--
Afrikaans	(X)	--	--	--	--	--	--	--	--	--	--	X	X	X	--	(X)	(X)	--	--	--	X

Table 5: Kalahari Basin features shared by other local languages

The results, given in Table 5, justify the conclusion that substrate interference contributed repeatedly to creating linguistic similarities with Kalahari Basin languages (or at least maintaining existing ones) but has not been strong enough to make the newcomers "full" members of the area.

The following can be observed about the internal profile of the Kalahari Basin in the narrow sense. The best evidence for it is features with a homogeneous geographical and genealogical spread, which are indeed numerous: clicks, ejectives, aspirated obstruents, tautosyllabic obstruent-obstruent clusters, nasalization, register tone system, restricted numeral system (with the exception of Khoekhoe), head-final genitive, host-final flagging and derivation, and several types of multi-verb constructions.

At the same time, a number of features are not evenly distributed across the area and the three families. Only rarely is a feature found throughout the Khoe family while being sporadic in Non-Khoe, e.g., reduplicative causative. These are candidates for a scenario in which the feature spread from Khoe into various Non-Khoe languages. The predominant situation is that a feature is well entrenched in Non-Khoe families while Khoe languages partake in it only incompletely. This situation holds for clusivity, clause-second pivot, non-semantic participant flagging, non-canonical clausal noun modifiers, dedicated associative plural, and possibly the area-specific root phonotactics.

If conceptualizing a linguistic area in terms of center vs. periphery, the distributions of the last type can be seen as a variant of a more general theme. Khoe displays a geographical cline from the north and east towards the south and west whereby the more its languages have encroached onto the Kalahari Basin the more pronounced is their change towards Non-Khoe patterns (cf. Güldemann 2006: 105). One can tentatively establish the following Khoe-internal hierarchy of increasing Kalahari Basin character (with the caveat that missing data on East Kalahari Khoe might still change this picture): Shua+Tshwa+Kxoe < G‖ana+Naro < Khoekhoe. Güldemann (2008a) has proposed a concrete historical scenario how this situation would have come about, the main idea being that Khoe-Kwadi is also a colonizing lineage associated with the spread of pastoralism into southern Africa.

The Non-Khoe families Tuu and Kx'a represent the structural core of the Kalahari Basin, to whose profile the many isoglosses restricted to them can be added. As long as the two families are treated as genealogically independent, this finding reflects a yet earlier areality before the advent of Khoe-Kwadi - an idea reminiscent of Westphal's (1980: 77) concept of a '"Bush" language province'. Non-Khoe can thus be conceived of as having produced a kind of linguistic founder effect whose resulting areal profile "seeped up" into a sequence of colonizing linguistic layers (in chronological order Khoe-Kwadi, Bantu, Dutch-Afrikaans) by means of multiple direct and indirect substrate interference, but has itself been dissolving increasingly through large-scale language shift.

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Abbreviations

ASS Associative, BEN Benefactive, CLCO Clause connective, COM Comitative, DEM Demonstrative, DIM Diminutive, DS Different subject, F Feminine, HOD Hodiernal, IPFV Imperfective, JUNCT Juncture, LOC Locative, M Masculine, OBJ (Direct) object, MPO Multipurpose oblique, MVC Multi-verb construction, P Plural, PGN Person-gender-number (marker), POSS Possessive, PRO Pronoun, PROX Proximative, PST Past, RCPR Reciprocal, RELV Current relevance, S Singular, SEQ Sequential, STAT Stative, TAM Tense-aspect-modality