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【Article】

The Kx'a Family
A New Khoisan Genealogy[1)]

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The question of whether there is a genetic unit called "Khoisan", as proposed by Greenberg (1963), or whether there are a number of independent genetic stocks of languages within the "Khoisan" area has been discussed controversially in the history of Khoisan linguistics, with the second position now being prevalent. In the present study it is argued that there is a genetic unit that includes languages that are traditionally associated with both the Northern and the Southern Khoisan groupings, the languages included being !Xun (or "Ju" or "Ju|'hoan") and ǂHoan. Building on the work of Honken (2004), the comparative method will be employed to reconstruct some phonological features of the common ancestor of this language family that we propose to call the "Kx'a family".

Keywords: Click Type, Comparative Method, Genetic Relationship, Khoisan, !Xun

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1 Introduction

Formerly considered to be distinct but related branches of the South African Khoisan family (Greenberg 1963), Northern and Southern Khoisan are now widely held to be genetically unrelated groupings, and whether Southern Khoisan constitutes a valid historical grouping must remain controversial (Güldemann and Vossen 2000; Güldemann 2009). Northern Khoisan, by contrast, has been demonstrated to be not only a closely related language unit but even to constitute a single, even if complex language, referred to as !Xun (Heine and König Forthc.). Recent work by Honken (2004) suggests that the north-south divide that has dominated traditional comparative Khoisan linguistics is in need of reconsideration in that !Xun appears to be genetically related to one language that previously tended to be associated with Southern Khoisan, namely the ǂHoan language of Botswana. The main goal of the present study is to apply the comparative method to !Xun and ǂHoan and to reconstruct some traits of a phonology of Proto-Kx'a, the hypothetically set up ancestor of these languages.

1.1 The Kx'a languages

Eastern ǂHoan, or Eastern ǂHûân, henceforth referred to in short as ǂHoan, is a highly endangered Khoisan[2] language spoken by small groups of hunter-gatherers in the

2) We are taking the term "Khoisan" as proposed by Greenberg (1963) as a convenient label to refer to a group of non-Bantu languages of southern and eastern Africa. Whether these ↗

Kalahari region of southeastern Botswana around Tswaane, Dutlwe, Tsia, Salajwe, and Khudumelapye, who refer to themselves as ǂ*Hõã̀n* (Traill 1973: 25, Collins 1998: 5, Gruber n.d.)[3]. According to Herman Batibo (p.c.), the number of speakers of ǂHoan is distinctly below 200, living in the villages of Dutlwe, Kanye, and Takatokwane as well as in two pans, namely Tswaane Pan and Lokaakwe Pan, about 150 kilometres from Molepolole and 50 kilometres from Sekoma.

That ǂHoan exists as a language of its own was recognized first by Anthony Traill (1973), who published a 200-word list of it. Subsequently, it became the target of more extensive research, first by Jeffrey Gruber and later on by Christopher Collins. Still, the language is not well documented; there is some grammatical information (Gruber 1973; 1975a; 1975b; 1975c; Gruber and Collins 1997; Collins 1997; 1998; 2001a; 2001b; 2001c; 2001d; 2002; 2003; Bell and Collins 2001), including an unpublished list of over 1000 words by Gruber (1975b), and there also exists a comparative study of ǂHoan and its external relationship (Collins 2004). Collins (1998: 5) observes that there is a closely related, mutually intelligible language, Sasí, spoken around Lethajwe and Artesia south of Shoshong. According to Monaka and Lepekoane (2008: 266), terms such as Tshasi, Casi, Xasi, etc. are among the alternative names that the !Xóõ use to refer to themselves. The significance of this name is not entirely clear; possibly, it is a Kgalagadi (or Tswana) word for 'San, Bushman'.

!Xun is spoken in southern Angola, northern and northeastern Namibia, and northwestern Botswana. It has been described as an L-complex, that is, as a cluster of speech forms that are connected by a chain of mutual intelligibility, but speakers at the extreme ends of the chain do not understand one another. For example, !Xun speakers of central Angola do not understand !Xun speakers of eastern Namibia or northwestern Botswana. Even dialects presumed to be fairly closely interrelated are not necessarily mutually intelligible. Still, no clear-cut language boundary separating the various !Xun varieties has been identified so far. Since there is reason to believe that all the !Xun varieties that have come to our notice so far are linked by some chain of mutual intelligibility, we prefer to treat the various speech forms as a single, even if complex, language.

Table 1 provides a list of dialects that are distinguished by Heine and König (Forthc.), and a classification of the dialects is found in Table 2. Sands (Forthc.) distinguishes 15 dialects (more precisely, "lects") and Snyman (1997) 12. Our catalogue of eleven dialects is based on distinctions in grammatical properties as they have been documented so far, but like the other two authors mentioned we do not have any reliable information on where dialect boundaries are to be traced, nor on how many of them there are. We will therefore use the term "dialect" in a loose sense, referring to a given variety of !Xun that in some grammatically definable way differs from other varieties as a dialect (for more details, see

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↗ languages are in fact genetically related, as argued by Greenberg and others, is an issue that remains unresolved at the present stage of research.

3) The name ǂHoan or ǂHuan is possibly not an endonym but rather a word from the Taa language meaning 'south'. According to Traill (1973: 25) it is spoken "south of the Khutse Game Reserve in Central Botswana, stretching westwards from about Kudumelapye to Tshwaane Pan".

Table 1. The dialects of !Xun.

Dialect label	*Own name*	*Where spoken*
N1	*!xuun* or *kúándò !xuun* ('Kwando !Xun')	Southeastern Angola
N2	*!ᵓo !uŋ* ('Forest !Xun')	Eastern half of central Angola
W1	*!xūún* or *!ˈālè !xòān* ('Valley !Xun')	Eenhana District, northern Namibia
W2	*!xūún* or */ākhòè !xòān* ('Kwanyama !Xun')	Eenhana District, northern Namibia
W3	*!xūún*	Tsintsabis, Tsumeb District, northern Namibia
K	*!xūún*[4]	Western Rundu District, northern Namibia, and adjacent areas of Angola
C1		Tsumeb District, northern Namibia
C2		Grootfontein District, northern Namibia
E1	*ju-/ʰhoan(-si)*	Tsumkwe District, northeastern Namibia, and adjacent parts of Botswana
E2	*!xun, ju-/ʰhoa(si)*	Around Dikundu[5], western Caprivi Strip, northeastern Namibia
E3	*ju-/ʰhoan(-si)* or *!xun* or *ǂxˈāō-//ʰàèn* ('northern people')	Gobabis District, eastern Namibia

Table 2. A classification of !Xun dialects.

Branch	*Cluster*	*Dialect (reference form)*
1 Northwestern (NW-!Xun)	1.1 Northern	N1
		N2
	1.2 Western	W1
		W2
		W3
	1.3 Kavango	K
2 Central (C-!Xun)	2.1 Gaub	C1
	2.2 Neitsas	C2
3 Southeastern (SE-!Xun)	3.1 Ju|ˈhoan	E1
	3.2 Dikundu	E2
	3.3 ǂxˈāō-||ˈàèn	E3

Heine & König Forthc., section 1.3). While there is now a wealth of lexical and phonological information on !Xun dialects (especially Snyman 1979a; 1997), data on the grammar are limited to a few dialects, namely E1, E2, W1, and W2. The dialects of the Central branch of !Xun are little known and we will therefore have little to say about them in this paper.

1.2 Earlier work

The term "Khoisan" was first proposed by the anthropologist Leonhard Schultze (1928) and adopted in African linguistics by Westermann (1935). That the Khoisan languages of

4) Akira Takada (p.c.) mentions that in Ekoka the !Xun of the Kavango region are called *dom !xoan* (lit.: 'river !Xun').

5) When we visited the Dikundu-Mutsiku area where Köhler had studied E2 in 1998, we did not meet any speakers of E2.

Table 3. Genetic groupings traditionally classified as Khoisan according to Güldemann and Voßen (2000: 102).

Genetic stock		Branch
1 Non-Khoe	1.1	Ju (= !Xun; *Northern Khoisan*)
	1.2	!Ui-Taa (*Southern Khoisan*)
	1.3	ǂHõã (= ǂHoan; isolate)
2 Khoe (*Central*)	2.1	Khoekhoe
	2.2	Kalahari Khoe
3 Sandawe (East Africa)		
4 Kwadi (possibly extinct)		
5 Hadza (East Africa)		

southern Africa form a historically defined unit of some kind, consisting of a Northern, a Central, and a Southern branch, is an old assumption (see e.g. Bleek 1927; 1929). That this unit can be defined in terms of genetic relationship was proposed first by Greenberg 1949–54; 1963), less explicitly also by Köhler (1973/4). This hypothesis was substantiated by other researchers (e.g. Ehret 1986; Honken 1998; Starostin n.d.).

More recently, the monogenesis hypothesis is increasingly being questioned. While no one would doubt that the Khoisan languages are in some way historically related, sharing a substantial vocabulary and some structural features, the prevalent view has it that this relationship may as well be attributed to diffusion, that is, to language contact rather than to common origin. The present mainstream position is perhaps best represented by Güldemann and Voßen (2000), who propose to replace the traditional threefold classification by the genetic groupings listed in Table 3.

The genetic position of both ǂHoan and !Xun has been discussed controversially by Traill (1973; 1974) and Westphal (1974), even if the conclusions reached by them on the relationship between the two languages are not all that different. Traill (1973: 26) argues that "the strongest links are with the languages that are geographically very remote, namely N1, N2 and S1", and he observes that ǂHoan (his Eastern ǂHûân) shares 50% cognates with Northern, 33% with Southern, and 17% with Central Khoisan, but he suggests to leave the status of the language undecided, being either a Southern Khoisan language, "S7" according to the numbering introduced by Bleek (1929), or "N4", that is, a Northern Khoisan language, "with the latter having a slight edge for the moment" (Traill 1973: 27). Note that the conclusion reached by Westphal is not dramatically different when he observes on the basis of Traill's (1973) material that "N4 seems a more appropriate classification for his new language than S7" (Westphal 1974: 247).

A breakthrough in the comparative study of ǂHoan can be seen in the study by Honken (2004). Observing that "there are several reasons why a comparison of ǂHoã and NK [Northern Khoisan; a.n.] might be profitable", he goes on to present a larger range of grammatical and lexical material where the two units show significant form-meaning similarities, also proposing a number of sound correspondences between the two, and he concludes:

> If we take the kinds of relationships we find in those language families established beyond doubt as a model, we must conclude that ǂHoã is genetically related to Northern Khoisan but not to !Xóõ or Central Khoisan. (Honken 2004: 2)

There is in fact no indication that there was direct or indirect language contact between earlier speakers of ǂHoan and !Xun; the two societies are geographically more than a thousand kilometres apart, and we are not aware of any major historical processes, other than those associated with the impact of European colonial powers, that might have been instrumental to making linguistic exchange possible. We therefore see no alternative other than genetic relationship to account for the commonalities shared by ǂHoan and !Xun.

The Honken hypothesis that we take up here has a possible precursor, namely Westphal (1974), who suggests that the most plausible, or least controversial, classification of ǂHoan would be one in terms of Northern Khoisan membership (Westphal 1974: 246). And the hypothesis was also supported by Starostin (n.d.), who argues that ǂHoan can safely be assumed to represent an "elder brother" of Northern Khoisan (NK) dialects, "much more distant from them than they are from each other, but significantly closer to NK than anything else. According to glottochronological calculations, the split of "Proto-NK-ǂHoan" must have taken place somewhere around the 2nd millennium B.C." (Starostin n.d.: 41).

Like Starostin, we go one step further than both Westphal (1974) and Honken (2004) in claiming that genetic relationship is not a plausible claim but rather that ǂHoan and !Xun *are* in fact genetically related and that it is possible to reconstruct some characteristics of the hypothetical ancestor language of the two, which we propose to call Proto-Kx'a. This term is taken from the root **kxʼà* 'ground, soil' shared by all the linguistic communities concerned[6].

1.3 The present study

The aim of this paper is to reconstruct a skeleton of Proto-Kx'a phonology. To this end, we will be concerned in section 2 with phonological correspondences and hypotheses on their diachronic significance, and in section 3 we will draw some conclusions on the historical implications of the reconstructions proposed. A reconstruction of the grammar of Proto-Kx'a is beyond the scope of the present paper and will be proposed in a separate publication.

There are a number of different conventions that have been employed for writing materials of the Kx'a languages. We follow Collins in using the orthography proposed by Dickens (1994) for writing not only E1 (Ju|'hoan) material but also data from all other Kx'a varieties, mainly because this orthography relies on a minimum of diacritic symbols without being less distinctive than any other orthography and has turned out to be the most immediately acceptable to !Xun speakers. This means in particular that we differ from other

6) We are grateful to Bonny Sands for reminding us that this root is not restricted to the Kx'a family; it is also shared e.g. by the Kwadi language of southwestern Angola, as pointed out by Ehret (2008: 108).

authors in the following conventions: As in the work on !Xun grammar (Heine & König Forthc.), nasal vowels are, following the convention introduced by Dickens (1994; 2005), written with a full nasal symbol {n} after the vowel symbol for both Kx'a languages and for Proto-Kx'a, i.e. [ã] = {an}. To distinguish the nasal consonant [n] from nasal vowels, the former is written {nn} whenever it follows a vowel in the same morpheme. This means that e.g. {an} stands for [ã] while {ann} stands for [an] throughout.

We diverge however in a few cases from Dickens, in particular in the following: ǂHoan, though not !Xun, has a uvular stop, commonly rendered by {q}. Now, Dickens uses {q} for marking pharyngealization on vowels, and this convention has been adopted by Heine and König (Forthc.). But in order to be consistent across the Kx'a languages, we replace the {q} of Dickens in this paper by {ʕ} for marking pharyngeal vowels in all Kx'a languages in the present paper.

2 Phonological reconstruction

A few decades back, Traill (1973: 27) maintained that it is generally not possible to formulate "rules of sound shift" for ǂHoan, and at that stage this was certainly correct. But the situation has changed: We now have more information and a better analysis of the situation. It is most of all the lexical data provided by Gruber (1975a) and their comparative analysis provided by Honken (2004), together with information on the grammatical structure provided by Gruber and Collins, as well as a more detailed description of !Xun and its dialects (Heine & König Forthc.) that make it possible to propose a linguistic reconstruction of the historical relationship of ǂHoan and the language family of which it is a part.

The main crux with linguistic reconstruction in Khoisan is that there is no viable means of separating inherited from borrowed material. Accordingly, except for the comparative study of Central Khoisan (Khoe) by Rainer Vossen (1997), there has been no really successful attempt to apply the comparative method to Khoisan languages. More recent research suggests, however, that it may be possible to apply this method also to other groupings of Khoisan. Some techniques for distinguishing between genetically inherited and contact-induced linguistic material are proposed by Honken (2004). Still, for most of the lexical and grammatical similarities to be observed across Khoisan languages there simply is no way of deciding which of the two is involved. And, perhaps more importantly, even if we are able to establish that item X of language A was borrowed from language B, we do not know in most cases *when* that happened. That a given word or grammatical form was borrowed is not necessarily reason enough to eliminate it from an analysis based on the comparative method. What is more important is the relative time at which borrowing took place: If it occurred prior to the split of the languages concerned then it can be expected to behave like any inherited item. Take the following series:

ǂHoan	SE-!Xun	NW-!Xun	Meaning
ʧàán	ʧàn	ʧàān (W1 tsàān)	‘gravy’
ʧòó	ʧò	ʧò (W1 tsò)	‘medicine’
ʃán	ʃán	ʃān (W1 sān)	‘to rest’

The items for ‘medicine’ are not restricted to the Kx’a languages; rather, they are found throughout the Khoisan languages, and we side with Honken (2004: 51) in assuming that the best hypothesis is one according to which it was the Central Khoisan languages which were the ultimate source of diffusion of this item. But the question then is *when* this diffusion took place. If this was prior to the split between NW-!Xun and SE-!Xun, for example, then it could safely be reconstructed back at least to Proto-!Xun, as we tentatively do here.

No claim is made to the effect that the reconstructed sounds and sound combinations that we propose in this study represent phonological features that were actually spoken in this form in the hypothetically set up ancestor language; but what we claim is that, on account of the regular correspondences on which they are based, they stand for units containing phonetic features that must have existed in this or a similar form in the ancestor language.

Following Honken (2004), our comparisons are restricted to three linguistic varieties, namely ǂHoan, Northwestern !Xun (NW-!Xun) and Southeastern !Xun (SE-!Xun). The latter two stand for the two main branches of the !Xun language; the third branch, Central !Xun, is not considered here since there hardly any linguistic data on it. We take the W2 dialect as being representative of NW-!Xun but also include data from the W1 dialect (Heikkinen 1986; 1987) where this seems desirable (adding the label “W1” in such cases). All our SE-!Xun data are taken from the E1 dialect (Dickens 1994; 2005), which is the only dialect of this branch that has been appropriately documented.

ǂHoan data presented in this paper are taken mostly from the published and unpublished sources of Jeffrey Gruber, but to some extent also from the publications of Christopher Collins. Unfortunately, the data of the latter are not tone marked, hence whenever ǂHoan materials without tone markings are presented these are taken from the works of Collins.

2.1 Introduction

Like other Khoisan languages, the Kx’a languages are phonologically complex[7]; the number of segmental phonemes identified is distinctly over one hundred; in addition, both ǂHoan and most !Xun dialects distinguish four tone levels and four register tonemes in addition to contour tones (see 2.5). An issue that has received some attention in works on Khoisan languages concerns the question of whether complex phonetic units, e.g. [||xʔ], should be analyzed as single units or as sets of features or segments. For the present purposes of phonological reconstruction we adopt the latter procedure, treating such complex

7) For !Xun, see Heine and König (Forthc.) and, most of all, Heikkinnen (1986) for W1, Dickens (1994) and Snyman (1970) for E1, and Köhler (1981) for E3.

units as combinations of segments. Thus, a velar ejective affricate such as [||xʔ] is taken to consist of a lateral click type [||], a velar fricative [x], and a glottal stop [ʔ], and combinatorial characteristics are analyzed as contextual features.

There are two phonological features that may be said to be somewhat labile in !Xun in particular and the Kx'a languages in general, namely glottal stops between vowels and the nasalization of vowels, i.e. nasal vowels. In NW-!Xun dialects, glottal stops tend to be eliminated intervocally and some speakers do not pronounce intervocalic glottalization at all, e.g. W2 [|àʔā] or [|àā] 'to give'. Also across dialects there is some variation in that one dialect uses an intervocalic glottal stop whereas another dialect does not. For example, the Proto-!Xun imperative verb stem **tuˈa* 'go!' is *tòá* in the N1 dialect, *tòˈā* or *tòà* in the E3 dialect, but *tòˈá* in the E1 dialect (Heine & König Forthc.).

In a similar fashion, the contrast between nasal and oral vowels is only weakly distinctive in many !Xun varieties, if distinctive at all, and nasal vowels can be, and are, in many cases pronounced as oral vowels, e.g. W2 [|ʔã̀] or [|ʔà] 'with'. We therefore have not taken glottalization and nasality to be decisive features in establishing regular correspondences, at least in specific cases.

2.2 Vowels

2.2.1 Oral vowels

All modern Kx'a languages have a five-vowel system of the following kind:

i u
e o
a

And all five oral vowels can be reconstructed back to Proto-Kx'a. These reconstructions are based on the correspondences to be discussed in this section.

For a set of corresponding sounds [a] we reconstruct a Proto-Kx'a vowel **a*:

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*a	a	a	a	
	chàá	thá	thā	'penis'
	kʘ̀ha	kʘʕà	kʘ̃ʕà	'to fear'
	kxˈà	kxˈà	kxˈà	'earth'
	xàá 'master'		xā.mà	'old man'

We tentatively propose that **a* was lost in !Xun in word-initial position when followed by the nasal *m*, even if we have only two examples supporting this hypothesis:

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*am	ˈam	m	m	
	ˈǎ́m	ḿ	ḿ	‘to eat’
	ˈàm	m̀ (E2 dialect)[8]	m̀	‘my’

An interesting proposal is made by an anonymous referee of this paper, who suggests that rather than vowel loss in !Xun the change might have involved vowel addition (**m* > *am*) in ǂHoan. While this proposal raises a number of problems with other occurrences of the bilabial nasal in ǂHoan, more research is required on this issue.

Note that in the above examples, ǂHoan has an initial glottal stop (ˈ = [ʔ]). This glottal stop exists also in all !Xun forms presented, for example W2 [ʔḿ] ‘to eat’, [ʔm̀] ‘my’, but is ignored here since its occurrence word-initially is predictable.

A mid front vowel **e* has [e] as reflexes in all languages. These reflexes all involve [e] being preceded by another vowel in the same word:

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*e	e	e	e	
	ɟóʕe	dɔ̃ʕɛ̀ ‘using smoke for some purpose’		‘smoke’
	ùé	wè-ʃɛ̀	wèé-sè	‘all’
	ǀxòbe	ǀxòbè	ǀxòbè	‘to lend’
	ǁàʕe	ǁàˈé		‘to cut meat’

A high front vowel **i* has [i] as reflexes in all languages. Most of the cognate sets containing [i] involve combinations of vowels where *i* is preceded by another vowel (cf. above under **e*).

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*i	i	i	i	
	-ʃí	-sí	-ʃí	nominalizing suffix denoting places
	g!(ə)i, g!i	g!ə̃ĩ	g!ə̃ĩ	‘gnu’
	ǂxái	gǂxàí	g!!xáín (W1 gǂxáí)	‘scorpion’

Following a back vowel there is a set of correspondences for which we reconstruct a Proto-vowel **i* that was lost in !Xun. This set contrasts with another set for which we reconstruct the Proto-Kx’a combination **ui* (see below); the exact phonetic features distinguishing these two sets are unclear.

8) For example, E2 *m̀ bāà* ‘my father’ (Köhler 1973: 43).

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*Vi	i	ø	ø	
	!xűi	!xó	!xō	'elephant'
	!ˈűi 'spine'	!ˈú	!ˈú	'bone'
	kǐ‖ùi	‖ú 'to step, kick'	‖ú 'to kick'	'to tread'

Similarly, there is [o] as a reflex in all languages, for which a vowel **o* is set up:

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*o	o	o	o	
	cŏa	tõˈà	-tòˈà	'that' (distal demonstrative)
	õ	ō	õh(ā)	'be', copula
	ǀxòbe	ǀxòbè	ǀxòbè	'to lend'
	n!õʕa	n!õˈàn	n!ònˈà	'duiker lamb'
	‖qóʕa 'tortoise shell'	‖òˈá	g‖òˈà	'big tortoise sp.'

In most, if not all, !Xun dialects there is an optional rule whereby a mid or high back vowel ([o] or [u]) preceding [a] in the next syllable is pronounced as a diphthong [oa] or [ua], respectively. We therefore also include the following cognate set as an instance of Proto-Kx'a **o*: ǂHoang *khóla* : SE-!Xun *khóárá* : NW-!Xun *khōālā* (*khwālā*) 'to unbind'.

There is another series where !Xun [o] preceding the nasal [m] corresponds to ǂHoan [oa]. We propose a Proto-Kx'a phoneme **o* for this series, arguing that preceding *m*, **o* was diphthongized in ǂHoan (> *oa*):

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*o/_m	oa	o	o	
	ɟòàm 'river bed'	dõhm	dõm	'throat, river bed'
	nǂòàm	nǂòm		'to make'
	ˈn!õàm	n!òm̀	ˈn!òm	'to limp'
	!xòàm	!xóḿ		'to cover'
	kǐ-ǂˈòam-ǂˈòam	ǂˈómá 'to kiss'		'to taste mouth'

There is an interesting proposal made by an anonymous referee of this paper, according to which a more plausible reconstruction might be **om* rather than **o/_m*, and that there was a development (**m* > *am*) in ǂHoan. This proposal raises a number of problems with other occurrences of the bilabial nasal in ǂHoan, but more research is required on this issue.

And all languages have a high back vowel [u] to be reconstructable as **u*:

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*u	u	u	u	
	ʧù	tsú ‘uncle’	ʧú ‘father’s brother’	‘father’
	kǐ̋-n|ùi	n|hùì̀	n|ùhì̀	‘to take (away, PL)’
	ˈű-	ú	ú	remote demonstrative

We have ignored above two additional sets of vowel correspondences where there is a high vowel [i] or [u] in Southeastern !Xun but a mid vowel [e] and [o], respectively, elsewhere in the Kx’a languages in final position. In order to distinguish these two sets from the correpondences above, we propose the Proto-Kx’a vowels **E* and **O*, respectively, without attempting to determine what phonetic value may have characterized these sets.

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*E	e	i	e	
	ɟe:	-di ‘female’	*dē (dē ‘female’)	‘mother’, ‘female’
	!hàˈè	n!hà̀ì	n!hà̀è	‘lion’
	||qóˈe	g||àˈí	g||àˈàè	‘bear, give birth’
*O	o	u	o	
	n||ǒn	n||ùˈùn	n||ōˈún	‘to play’
	||ǎo	||áú		‘well’ (adv)

2.2.2 Vowel combinations

There are a number of sets of vowel correspondences whose exact phonetic value in the hypothetical proto-language remains unclear. We propose to tentatively set up combinations of two vowel symbols for each of these sets but whether, or to what extent, these reconstructions are historically significant needs to be established by future research. One of these combinations is [ae]. It is found in all Kx’a languages but tends to be pronounced as a monophthong [e], especially in fluent speech, hence there are both [ae] and [e] reflexes.

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*ae	ae, e	ae	ae, e	
	||háé	||háé-já ‘be unlucky’		‘fail to do’
	||ˈáé	!ˈàè	||ˈàè	‘to send message’
	|xˈà̀è	|xˈàè.à		‘to visit’
	||xˈáé	||xˈáé	||xˈāē	‘to meet’
	xè̀	xáé		interrogative marker

Another reconstruction concerns the set where ǂHoan has [u] while !Xun shows [o], for which we propose a sequence **uo*:

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*uo	u	o	o	
	kxˈú	kxˈò	kxˈò	'pot'
	g‖ǔ	g!òˈō	g‖òˈō	'to cough out'
	kǐ̋-gǜ	gò	gṑ	'flower'

The correspondence ǂHoan [o] : !Xun [u] is hypothesized to go back to the combination **ou* in Proto-Kx'a:

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*ou	o	u	u	
	tʃò	tshù	tʃù	'to vomit'
	|ˈò	|ˈú	|ˈú	'to enter, insert'
	!ó	!ú	!ú	'name'
	!ó	g!ú	g!ú	'belly'
	!hǒ	!hú	!hú	'horn'

There is a set of correspondences ǂHoan [iu] : SE-!Xun [ao] : NW-!Xun [au] for which we propose to reconstruct a Proto-Kx'a unit **iaO*, and we hypothesize that the front vowel segment [i] was lost in the ǂHoan entry ʘˈūˉ 'duiker' due to the labial environment of the click. The reason for setting up the unit **iaO* rather than **iau* is the following: We observed above that one set of correspondences involves a back high vowel [u] in SE-!Xun corresponding to the mid vowel [o] in both NW-!Xun und ǂHoan, and we proposed the symbol **O* for this set. We argue that this is the vowel that also figures in the present set of correspondences and assume further that its reflex *u* in ǂHoan, instead of the expected vowel *o*, is due to the influence of the preceding high vowel *i*. There is an additional set of possible cognates, namely ǂHoan *fíu* : SE-!Xun *g!áú* : NW-!Xun *g//āō* 'hand' which are excluded here since the ǂHoan form should be **g//iu* rather than *fíu* and we do not know how to account for a click loss in ǂHoan.

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*iaO	(i)u	au	ao	
	ɟǔ	dtshàú	dtshāō	'wife'
	tsˈíu	tsˈàù	tsˈāō	'tooth'
	ʘˈūˉ	|ˈáú	|ˈāō	'duiker'

Finally, there is a set where all languages have the combination [ui], for which we propose **ui* as a Proto-Kx'a combination:

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*ui	ui	ui	ui	
	chùí	thúí	thúí	‘wound’
	kǐ-n|ǜi	n|hǜi	n|ǜhì	‘to take (away, PL)’
	!úi	!ùì	!ūí	‘to rot’
	dzǎ-ʘúí	n|úí	n|úí	‘friend, other’

2.2.3 Vowels separated by a consonant

For a ǂHoan sequence of the vowels [o] and [a] separated by a consonant which corresponds to two low vowels in !Xun we reconstruct for Proto-Kx’a the combination **o*C*a*, arguing that in !Xun there was vowel assimilation:

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*oCa	o-a	a-a	a-a	
	ʘóa	g|àˈá	g|àˈā	‘eye’
	n||óʕam	n||àʕˈḿ	n||ãʕbā ‘to turn one’s back to’	‘to carry on shoulder’
	nʘóʕa	n|ãˈàn	n|àˈā	‘sky’

We hypothesize that the glottal stop in the ǂHoan noun *ʘóa* ‘eye’ was lost. Note that intervocalic glottal stops tend to be also suppressed in most !Xun dialects (see *ʕ below).

Another reconstruction relates to a correspondence set where ǂHoan has a vowel [a] while !Xun has [o], for which we set up a sequence of two vowels, optionally having an intermediate consonant (C):

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*ao	a	o	o	
	ˈn|ãʕm	n|òʕm	ˈn|õʕm	‘springhare’
	n!àm	n!òm	n!òm̃	‘to crawl’
	ˈn!ám	n!óm	ˈn!óm ‘to ripen’	‘ripe, cooked’
	cxàm	txòm̀		‘to tie together’
	||ám	!óm ‘leg’	||óm ‘leg’	‘thigh’

2.2.4 Nasal vowels

As we observed in the introduction to this section, nasal vowels (e.g., [ã]) exhibit a variable behavior. But all Kx’a varieties have nasal vowels, and in a number of cases they can be reconstructed as such back to Proto-Kx’a:

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*Vn	Vn	Vn	Vn	
	cxón	txún	txún	'kin term'
	n‖ȍn	n‖ʊ̀ʊ̀n	n‖ō'ún	'to play'
	ǀ'ón	ǀ'un 'hunting bow'	ǀ'ún 'stirring stick'	'stick'
	!hŏn	!hūn	!hún	'kill' (SG)
	ǂȍn	ǂn̄n	!!ǹn	'star'

2.2.5 Pharyngeal vowels

There are two series of correspondences involving pharyngeal vowels that we present below. We have no plausible hypothesis on what the phonetic equivalent of this distinction may have been in Proto-Kx'a; we tentatively propose the symbol **V*ʕ for the first set and **V*ʕʕ for the second set. In most !Xun dialects, intervocalic glottal stops tend to be suppressed, and some speakers generally omit them (see above).

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*Vʕ	Vʕ	V'	V'	
	n!ȍʕa	n!ò'àn	n!òn'à	'duiker lamb'
	n‖àʕba		n‖à'bà, n‖ãbà	'to stride'
	nʘóʕa	n‖à'àn	n‖à'ā	'sky'
	!óʕ	!ù'úrú	!ū'úrú W1)	'nail'
	g!àʕ	g!à'án	g!à'àn	'to be bitter'
	‖àʕe	‖à'é		'to cut meat'
	‖qóʕa 'tortoise shell'	‖ò'á	g‖ò'à	'big tortoise sp.'
	'nǂãʕm	nǂà'ḿ	n!!ā'm̀ (W1 nǂà'm̀)	'to hit, strike'

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*VʕʕV	Vʕ	Vʕ	Vʕ	
	tsóʕa	tsȍãʕ	tsòãʕ 'to cut grass'	'to pluck'
	kǐ-ɟȍʕba	dòʕàrà		'leaf'
	ǂàʕnna		!!àʕnnà (W1 ǂàʕnnà) 'to glitter'	'to be white, light'
	tʃáʕm 'to throw out, discard'	tàʕm	ʧàʕm	'fall, drop (PL)'
	n‖óʕam	n‖à'ḿ	n‖ãʕbā 'to turn one's back to'	'to carry on shoulder'
	'n‖ãʕm	n‖òʕm	'n‖ȍʕm	'springhare'

For the following set we reconstruct a Proto-Kx'a pharyngeal unit **ʕm* by hypothesizing that there was a bilabial nasal which changed into a bilabial stop in NW-!Xun. The ǂHoan entry *!áʕm* 'to enter (SG)' is added only tentatively since on the basis of regular correspondences the expected form would be *//áʕm* (see **!!* below). We have added the set for 'to carry on shoulder' because it also illustrates the correspondence between a bilabial stop in NW-!Xun and a bilabial nasal elsewhere even though this set strictly belongs to another series (see **ʕʕ*).

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*ʕm	ʕm	ˈm	b (*or* ˈb)	
	gǃa̰ʕma-(tʃĩ-gǃa̰ʕe)	gǃòˈḿ-(gǂàˈín) ‘brown horsefly’		wasp sp.
	ɟáʕm-sɨ̀	dà̰ˈàmà	dàbà (*or* dàˈbà)	‘child’
	n||óʕam	n||àʏˈḿ	n||a̰ʕbā ‘to turn one’s back to’	‘to carry on shoulder’
	[!áʕm (SG)]	gǃàˈām-ā	g||àbà (*or* g||àˈbà)	‘to enter’
	ǂhàʕma		gǃ!hàbà (W1 gǂhàbà)	‘wing’

2.2.6 Nasal consonants

While there is a plethora of examples with word-final nasal consonants, correspondences with non-final nasals, such as the following, are rare (see 2.2.1):

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*m	m	m	m	
	ˈàm	m̀ (E2 dialect)	m̀	‘my’
	ˈa̋m	ˈḿ	ˈḿ	eat’

Our reconstruction is therefore largely restricted to word-final bilabial nasals. One common set involves word-final bilabial consonants ([m]). Concerning the combination [ʕm], see above under pharyngeal vowels.

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*m	m	m	m	
	ˈn|a̰ʕm	n|òʕm	ˈn|ò̰ʕm	‘springhare’
	n!àm	n!òm	n!òm̰	‘to crawl’
	ˈn!ám	n!óm	ˈn!óm ‘to ripen’	‘ripe, cooked’
	cxàm	txòm̀		‘to tie together’
	tʃáʕm ‘to throw out, discard’	tàʕm	ta̰ʕm	‘fall, drop (PL)’
	||ám	!óm ‘leg’	||óm ‘leg’	‘thigh’

As we observed above, we are following Dickens (1994; 2005) in rendering nasal vowels (e.g., [ã]) by means of {n} after the vowel symbol (i.e., *an*), while alveolar nasal consonants ([n]) are written {nn} to distinguish them from nasal vowels (except at the beginning of morphemes, where we write [n] as {n} since no misunderstanding is possible). We have not found correspondence sets for word-initial [n] and only three examples for word-internal [n]; the reconstruction below is therefore tentative.

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*nn	nn	nn	nn	
	ˈánni	ˈánní		‘to wear’
	ǂàʕnna		!!àʕnnà (W1 ǂàʕnnà) ‘to glitter’	‘to be white, light’
	ǂhònni	ǂhúnní	[gǂhúnní]	‘elbow’

In addition to the set of nasal vowels, for which we reconstructed a nasal vowel **Vn* above, there is a series of correpondences where a nasal vowel in ǂHoan corresponds to an oral vowel in !Xun. For this series we hypothesize that in Proto-Kx'a there was a word-final alveolar nasal consonant (**nn*, phonetically [n]) which developed into a nasal vowel *Vn* in ǂHoan and was lost in !Xun. This hypothesis is to be taken with care; more information on the nature of nasality features in the Kx'a languages is urgently required. Note that in many !Xun varieties, the contrast between nasal and oral vowels is only weakly distinctive, if at all, and nasal vowels can be, and are, in many cases pronounced as oral vowels.

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*Vnn	Vn	V	V	
	g‖àn	g‖à	g‖à	'to stand (PL)'
	ts'án	ts'á	tʃ'ā	'to sleep'
	'nǂǒn	nǂǔù	'nǂǔhū (W1)	'center'
	ǀ'én	ǀ'àè, ǀ'è	ǀ'ē	'self' (reflexive marker)

Finally, there is a velar nasal [ŋ] in !Xun which corresponds to zero (ø) in ǂHoan. We propose a Proto-Kx'a consonant **ŋ* for this nasal and argue further that it was lost in ǂHoan. Note that this nasal occurs only root-finally, and that ǂHoan does not have word-final velar nasal consonants.

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*ŋ	ø	ŋ	ŋ	
	nǀè	nǀŋ́		'in order that' (purpose conjunction)
	'nǀá (<*'nǀŋ́-á)	nǀŋ́	nǀŋ́ (ǀn-á; W1 'nǀŋ́)	'to sit (SG)'
	ǂ'én	ǂ'ŋ́	!!'Ń (W1 ǂ'ŋ́)	'to think'

2.3 Egressive consonants

2.3.1 Plosives

There is a regular correspondence between the voiceless alveo-palatal [tʃ] and the palatal stop [c] in ǂHoan on the one hand and the voiceless alveolar stop [t] in !Xun on the other. And there is also a correspondence between the voiced palatal [ɟ] in ǂHoan and the voiced alveolar stop [d] in !Xun. Following Honken (2004: 26), we assume that the palatals are an innovation in ǂHoan, being the result of an areal spread of palatalization that affected not only ǂHoan but also neighboring languages. Hence, we reconstruct alveolar stops for these sets of correspondences, and these stops shifted in ǂHoan to two different obstruents. It remains unclear, however, why there are two different phonemes in ǂHoan (*c* and *tʃ*). Not being aware what the motivation for this differentiation in ǂHoan may have been, we tentatively assume that both can be traced back to a voiceless alveolar stop **t* in Proto-Kx'a.

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*t (1)	c	t	t	
	càm-!à	tàm-!á		‘spider sp.’
	cáʕm	tòˈḿ	tōˈḿ	‘to be near’
	chàá	thá	thā	‘penis’
	chùí	thúí	thúí	‘wound’
	cŏa	tòˈà	-tòˈà	‘that’ (distal demonstrative)
	còàn ‘shelter from sun’		tòàn	‘to stay for a short time’
	cxón	txún	txún	‘kin term’

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*t (2)	tʃ	t	t	
	tʃxá	txá	txá	‘cut/hit’
	tʃáʕm ‘to throw out, discard’	tàʕm	tə̀ʕm	‘fall, drop (PL)’
	tʃˈàm	tàˈḿ	tàˈm̀	‘to taste like’

In parallel to the above reconstruction of voiceless stops, we propose a voiced proto-stop **d* for the following correspondences.

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*d	ɟ	d	d	
	ɟə̀h		dàə̀	‘polecat’
	ɟáʕm-sə̀	də̀ˈàmà	dàbà	‘child’
	ɟe:	-di ‘female’	*dē, dē ‘female’	‘mother’, ‘female’
	ɟòàm ‘river bed’	dɔ̀hm	dɔ̀m	‘throat, river bed’
	ɟóʕe	dòʕə̀		‘smoke’
	kə̋-ɟòʕba	dòʕàrà		‘leaf’

In our data collection there are only few examples of plain velar stops; the following reconstructions therefore have to be taken with care.

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*k	kɔ̀ha	kòʕà	kɔ̀ʕə̀	‘to fear’
	kē (linker of distributive adjuncts)		kē	linker (of adjuncts)

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*g	g	g	g	
	gàˈa	gòˈá	gɔ̀ˈə̀	‘to gape’
	kə̋-gù	gò	gɔ̀	‘flower’

2.3.2 Other voiceless stops

In addition to the plain stops discussed above, there must have been voiceless stops with either velar (*C*x*) or aspirated (*C*h*) release, for which we set up the proto-features presented below (where C = consonant, *x* = velar release, *h* = aspirated release):

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*Cx	Cx	Cx	Cx	
	tʃxá	txá	txá	'cut/hit'
	cxàm	txòm̀		'to tie together'
	cxón	txún	txún	'kin term'

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*Ch	Ch	Ch	Ch	
	khóla	khóárá	khóárá	'to unbind'
	chàá	thá	thā	'penis'
	chùí	thúí	thúí	'wound'

2.3.3 Alveolar vs. alveo-palatal sibilants

ǂHoan and SE-!Xun distinguish between an alveolar and an alveo-palatal set of sibilants, while in NW-!Xun the alveolar ejective [tsʔ] and the alveo-palatal ejective [tʃʔ] are not distinguished, and [tsʔ] has been generalized in the W1 dialect but [tʃʔ] in the W2 dialect. Correspondences involving alveolar and alveo-palatal features are complex; at the present stage of research we propose to distinguish two alveolar sets of affricates (**ts*, **ts'*), an alveolar fricative **s*, and an alveo-palatal feature **ʃ* for Proto-Kx'a on the basis of the following sets of presumed cognates:

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*ts	ts	ts	tʃ	
	tsán 'hear, feel' (tsa:, Traill)	tsàˈá	tʃà(ˈā)	'hear, feel'
	tsóʕa	tsõʕà	tʃòàʕ 'to cut grass'	'to pluck'
*tsˈ	tsˈ	tsˈ	tʃˈ	
	tsˈ̃íu	tsˈàù	tʃˈāō	'tooth'
	tsˈán 'sleep'	tsˈá	tʃˈā	'to sleep'

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*s	ʃ	s	ʃ	
	-ʃí	-sí	-ʃí	nominalizing suffix denoting places
	tʃò	tshù	tʃù	'to vomit'
	tʃù	tsú 'uncle'	tʃú 'father's brother'	'father'

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*ʃ	ʃ	ʃ	ʃ	
	tʃàán	tʃàn	tʃāān (W1 tsàān)	‘gravy’
	tʃòó	tʃò	tʃò (W1 tsò)	‘medicine’[9]
	ʃán	ʃán	ʃān (W1 sān)	‘to rest’

2.3.4 Velars

There is a velar fricative [x] which occurs widely as an accompaniment feature on click types, as we saw above (under *C*x*). But it occurs also as a distinct phoneme in all Kx’a languages and can be reconstructed back to the proto-language, even if there are only a couple of cognate sets:

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*x	x	x	x	
	xàá ‘master’		xā.mà	‘old man’
	g!ò-xõlõ	xúrú		‘larynx’

2.3.5 Ejectives

There are a couple of ejective consonants that can be traced back to Proto-Kx’a. One set concerns the alveolar ejective set for which we reconstructed **ts'* above. Note that in NW-!Xun the alveolar ejective [tsʔ] and the alveo-palatal ejective [tʃʔ] are no longer distinguished, that is, [tsʔ] has been generalized in the W1 dialect and [tʃʔ] in the W2 dialect. Another set concerns the velar ejective [kxʔ], which occurs in this form in all varieties and we reconstruct **kx'* as a proto-unit:

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*kx'	kx'	kx'	kx'	
	kx'à	kx'à	kx'à	‘earth, ground’
	kx'ǎo	kx'àùn	kx'ǎò	‘red color of dawn’
	kx'ú	kx'ò	kx'ò	‘pot’

2.4 Ingressive consonants

All four of the click types commonly distinguished in Khoisan languages can be reconstructed back to Proto-Kx’a. The following illustrate these types with examples from the modern Kx’a languages. Note that the palatal click ǂ was replaced by the retroflex click *!!* in W2 but not in the neighboring W1 dialect.

9) Concerning the entry for ‘medicine’, see above.

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*|	|	|	|	
	|oˈa	|ōā negation marker	|ōā negation marker	'be absent'[10]
	ˈn|ãʕm	n|òʕm	ˈn|ðʕm	'springhare'
	|ˈò	|ˈú	|ˈú	'to enter, insert'
	|xòbe	|xòbè	|xòbè	'to lend'

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*!	!	!	!	
	!àò	!àò	!àò 'drop'	'to throw down'
	!a:, !ao		!ò	'leg'
	!áű	!áú	!áó	'to trek'
	!ãʕo	!ãˈò 'cheetah'		'small leopard'
	!óʕ	!ùˈúrú	!ūˈúrú (W1)	'nail'
	!ó	!ú	!ú	'name'
	!úi	!ùì	!ūí	'to rot'

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*ǂ	ǂ	ǂ	!! (W1 ǂ)	
	nǂĭ		n!!íí-mà (W1 nǂíí-mà)	'beast, dangerous animal'
	nǂũhi	nǂũhn	n!!ũ (W1 nǂũ)	'travel by night'
	ǂàʕnna		!!àʕnnà (W1 ǂàʕnnà) 'to glitter'	'to be white, light'
	ǂõn	ǂũn	!!ũn (W1 ǂũn)	'star'
	ǂhònni	ǂhúnní		'elbow'

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*||	||	||	||	
	||ǎo	||áú		'well' (adv)
	||àʕe	||àˈé		'to cut meat'
	||ǒe	||òè 'but'		'still'
	kǐ||ùi	||ú	||ú	'to tread'
	||hai		||háí	'to pull'

Following Sands and Miller-Okhuizen (1999; 2000), Heine and König (Forthc.) reconstruct a Proto-!Xun retroflex click type **!!* for a correspondence between an alveolar click *!* in SE-!Xun and a lateral click *//* in NW-!Xun. This set corresponds to a lateral click in ǂHoan, and on the basis of this distribution we argue that Proto-Kx'a also had a retroflex click type **!!*. Another possible cognate set is the following: ǂHoan *fĭu* : SE-!Xun *g!áú* : NW-

10) The expected form in !Xun would be */oˈa*. The fact that there is no glottal stop may be due to the following: Intervocalic vowels are frequently omitted (see section 2.1). This applies especially to frequently used words, and the negation particle belongs to the most frequently used words in all !Xun dialects. Thus, the form **/ōā* has been reconstructed as a negation marker already for Proto-!Xun (Heine & König Forthc., section 3.3).

Table 4. Reflexes of the retroflex click *!! in !Xun (P-NW = Proto-Northwestern !Xun, P-SE = Proto-Southeastern !Xun).

P-NW	Central !Xun (C2)	P-SE	Proto-!Xun	Meaning
*g||à	ŋ!!a	*g!à	*g!!à	rain
*g||āè	g!!aɪ	*g!āè	*g!!ae	puffadder
*g||àŋ	g!!ã	*g!àŋ/*g!āīn	*g!!àŋ	chin
*g||àò	g!!áʊ̈	*g!áú 'hand'	*g!!ao	hand, finger
*g||ǒq	g!!o:	*-g!ǒq 'male'	*g!!ǒq	man
*g||ú	g!!ũ	*g!ú	*g!!ú	water
*g||xˈà	!!ˈá	*g!xˈàā		rib
*n||aˈa	ǹ!!ˈa	*n!aˈa	*n!!aˈa	big
*||xˈāō	!!ˈaʊ	*!xˈāū		dry
*||hā	!!há	*!hā	*!!hā	meat

!Xun *g//āō* 'hand'. We have not included this set below, because in ǂHoan the expected reflex would be *//ǐu* rather than *ʃǐu*.

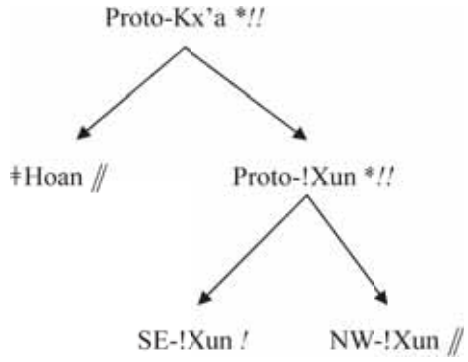
P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*!!	||	!	||	
	n||ào	n!ǎǒ	n||àǒ	'bow'
		n!ǎˈàn	n||āˈà	'be big'
	||ám	!óm 'leg'	||óm 'leg'	'thigh'
	||ˈáé 'to send message'	!ˈàè 'to anounce one's departure to'	||ˈàè 'to dismiss'	'to depart'
	g||ŭ	g!òˈō	g||òˈō	'to cough out'

The reconstruction of a retroflex click in Proto-!Xun is based on evidence from Central-!Xun, where this click has been retained, corresponding to a lateral click *//* in Northwestern !Xun and an alveolar click *!* in Southeastern !Xun. Table 4 illustrates the relevant correspondences. Examples from the Central !Xun branch are restricted to the C2 dialect; for more discussion and data, see Heine and König (Forthc., section 1.3).

What this reconstruction suggests is that the development **!!* > *//* must have happened independently in ǂHoan and in Northwestern !Xun. A possible motivation for this development is that the two clicks are similar in their acoustic perception, though not in their articulation. The hypothesized development **!!* > *!*, by contrast, is motivated by articulatory similarity: Both the retroflex and the alveolar clicks are articulated with the tongue tip touching the pre-palatal region, the difference being that the former involves an affricate release while the latter has a plosive click release. This overall development is sketched in Figure 1.

Finally mention should be made of the labial click type (ʘ) to be found in ǂHoan but not in !Xun. This click regularly corresponds to the dental click (*/*) in !Xun, as the examples below show. There is an additional set of possible cognates, namely ǂHoan *ŋʘùi* '*Grewia flava*': SE-!Xun *g/hǒè* '*Grewia falcistipula*', which we have excluded since no regular correspondences were found so far for the accompaniment features of the two languages.

Figure 1. The development of the retroflex click *!!.



P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*⊙	⊙	|	|	
	n⊙óʕa	n|ã'àn	n|à'ā	'sky'
	⊙óá	g|à'á	g|à'ā	'eye'
	⊙'ũ̄	|'áú	|'āō	'duiker'
	dzǎ-⊙úí	n|ūi	n|úí	'friend, other'

2.4.1 Click accompaniments

Presumably the most common accompaniment is voice. Voiced clicks, marked with a {g} before the click symbol (e.g. *g//*) are fairly common in all Kx'a languages and exhibit regular correspondences:

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*gC	gC	gC	gC	
	g!àʕ	g!à'án	g!à'àn	'to be bitter'
	g!(ə)i, g!i	g!ãĩ̀	g!ãĩ̀	'gnu'
	g||àn	g||à	g||à	'to stand (PL)'
	g!ǒn-ŋ|ã	g!ǜn	g!ǜn	'pestle'

Another fairly common accompaniment is glottalization (e.g., [|ʔ]), which turns out to be stable across all the languages, as the following reconstruction suggests:

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*|'	|'	|'	|'	
	|'é≡n	|'àè	|'ē	'self' (reflexive marker)
	|'ò	|'ú	|'ú	'to enter, insert'
	|'ón	|'un 'hunting bow'	|'ún 'stirring stick'	'stick'

Another click accompaniment is aspiration, which can also be traced back to Proto-Kx'a, as the following set involving the alveolar click [!] shows:

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*!h	!h	!h	!h	
	!hŏ	!hú	!hú	‘horn’
	!hŏn	!hūn	!hún	‘kill’ (SG)
	!hŭi	!hūi	!húi	‘cord’

A velar ejective with a click onset (Cxˈ) can also be reconstructed back to the proto-language:

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*Cxˈ	Cxˈ	Cxˈ	Cxˈ	
	|xˈǎè	|xˈàè.à		‘to visit’
	||xˈáé	||xˈáé	||xˈāē	‘to meet’
	||xˈà	||xˈá		‘wash’
	!xˈŏen	g!xˈùún	g!xˈùn	‘to stretch’

In much the same way does nasalization as an accompaniment exhibit regular correspondences across the Kx’a languages:

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*nC	nC	nC	nC	
	kǐ-n|ŭi	n|hŭi	n|ŭhì	‘to take (away, PL)’
	n!àm	n!òm	n!òm̃ (n!ùm̃)	‘to crawl’
	n!ám		n!ām ‘to cut’	‘to puncture’
	n||ŏn	n||ùˈùn	n||ōˈún	‘to play’

Perhaps of equal interest for the reconstruction of the phonetic structure of the hypothetical ancestor of the modern Kx’a languages is the following correspondence set where there is a glottalized nasal onset ([ʔn]) in ǂHoan and NW-!Xun, but not in SE-!Xun, which—as we argue—can be reconstructed back to Proto-Kx’a:

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*ˈnC	ˈnC	nC	ˈnC	
	ˈn|á	n|ŋ́	ń|ŋ́ (|n-á); ˈŋ́|ŋ́ (W1)	‘to sit (SG)’
	ˈn|àʕm	n|òʕm	ˈn|ŏʕm	‘springhare’
	ˈn!ám	n!óm	ˈn!óm ‘to ripen’; ˈn!óm (W1)	‘ripe, cooked’
	ˈnǂŏn	nǂŭù	ˈnǂŭhū (W1)	‘center’
	ˈnǂĭ		ˈn!ȅhī (W1 ˈNǂi͡hī)	‘to know (how)’

There is another correspondence set that appears to reflect a change according to which the combination of a nasal accompaniment, a click, and an aspirated release was simplified in ǂHoan in that nasality was lost, while in !Xun it is aspiration that tends to be lost:

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*nCh	Ch	nC(h)	nC(h)	
	!hàˈè	n!hã̀ì	n!hãè	'lion'
	‖hõʔˈa	n‖õʔˈàn 'stone for straightening arrow shaft'		'stone'
	ǀhòʔnè 'sputum'	n|òʔ̀in	ˈn|ũʔn	'to blow one's nose'

2.4.2 Post-velar accompaniment

Honken (2004: 26) observes that phonological correspondences involving the uvular stop [q] are far from clear, and that their distribution patterns areally, being found in !Xóõ, ǀGui, and ǂHoan but not in !Xun. Nevertheless, there appears to be a series of correspondences where a post-velar (or uvular) accompaniment of clicks corresponds to voiced clicks in !Xun, and we set up a Proto-Kx'a post-velar unit *qC for these correspondences:

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*qC	qC	gC	gC	
	q‖óˈe	g‖àˈí	g‖àˈàè	'bear, give birth'
	q!hău 'recline (PL)'	g!hòó	g!hó	'sit (PL)'
	q!ˈóri	g!òʔˈórí		'wild onion'
	q‖óʔa 'tortoise shell'		g‖òˈà	'big tortoise sp.'

We assume that in the case of the aspirate dental post-velar click [ǀq^{h}] of ǂHoan there is an alternative correspondence in !Xun, namely a voiceless nasal click */ˈh*. Since there are only two examples of this correspondence, our reconstruction of a Proto-Kx'a unit *$/qh$ must of necessity remain tentative:

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*q|h	q|h	|ˈh	|ˈh	
	q|hòén	|ˈhúí	|ˈhúí	'ear'
	q|hòón	|ˈhún	|ˈhún	'steenbok'

Furthermore, we postulate a voiced post-velar accompaniment *GC for Proto-Kx'a for a series where in !Xun there is a voiced click corresponding to zero (ø) in ǂHoan. Devoicing, that is, loss of a voiced onset, is a fairly widespread process in !Xun, most of all in NW-!Xun (see Snyman 1979a).

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*GC	øC	gC	gC	
	!ó	g!ú	g!ú	'belly'
	ǂhàʔma		g!!hàbà (W1 gǂhàbà)	'wing'
	!áʔm (SG)	g!àˈām-ā	g‖àbà	'to enter'
	ǂxái	gǂxàí	g!!xáín (W1 gǂxáí)	'scorpion'
	ʘóa	g|àˈá	g|àˈā	'eye'

Table 5. The vowels of Proto-Kx'a.

Oral					Nasal			Breathy		Pharyngeal	
*i				*u			*un		*uh		
	*e *E		*o *O		*en *enn						*oʕ/*oʕʕ
		*a				*an *ann		*ah		*aʕ/*aʕʕ	

2.5 Tones

In both branches there is a tone system characterized by four distinct tone levels (Honken 2004). The following are examples showing distinctive tones for reconstructed stems; however, a tonal analysis still needs to be done.

P-KX	ǂHoan	SE-!Xun	NW-!Xun	Meaning
*!!áóm	||ám	!óm 'leg'	||óm 'leg'	'thigh'
*ˈē(n)	ˈēn (or ˈee) 'it is'		ē proximal demonstrative stem	'here'
*!àò	!àò	!àò	!àò 'drop'	'to throw down'
*ǂòun	ǂòn	ǂūn	!!ūn	'star'

2.6 An overview

On the basis of the phonological reconstructions proposed above it is possible to give a rough outline of the phonological structure of Proto-Kx'a, even if these reconstructions take care only of a restricted set of correspondences that we were able to establish.

As we observed in section 2.2, all modern Kx'a languages have a five-vowel system, and all five oral vowels can be reconstructed back to Proto-Kx'a. Furthermore, there must have been at least a restricted set of nasal, breathy, and pharyngeal vowels. Table 5 lists the vowels that we propose. In view of the little information that is available we do not endeavor to determine what exactly the phonetic basis of the distinction between two sets of oral vowels (*e vs. *E, *o vs. *O), of nasals (*en vs. *enn, *an vs. *ann), and of pharyngeal vowels (*aʕ vs. *aʕʕ, *oʕ vs. *oʕʕ) may have been, more research on these vowel units is urgently required.

There is hardly any information on vowel combinations in !Xun, and even less in ǂHoan; we therefore do not attempt to establish whether a given combination should be reconstructed as a diphthong or as a sequence of two vowels.

Furthermore, there must have been four distinct tonemes and tone levels, namely high, mid, low, and extra-low (see 2.5).

The consonants that we propose to set up for Proto-Kx'a are presented in Table 6. Note that Table 6 simply presents an inventory of units that surface in our lexical reconstructions; trying to reconstruct the consonant system of the proto-language would be premature at the present stage of research.

With 18 vowels, 73 consonants, and four tone units, the reconstructed phonological units constitute presumably but a fragment of the actual system that must have charac-

Table 6. The consonants of Proto-Kx'a.

(Abbreviations: Af = affricate, Al = alveolar, As = aspirated, Bl = bilabial, Dt = dental, EGR = egressive, Br = breathy, Gl = glottalized, IGR = ingressive, Lb = labial, Lt = lateral, Pl = palatal, Rt = retroflex, Uv = uvular, Vl = unvoiced velar fricative. The symbol *g* before a click signals voiced pronunciation, while *q* signals a voiceless and *G* a voiced uvular pronunciation).

	EGR Lb	EGR Al	EGR Al-Af	EGR Pl	IGR Bl	IGR Lt	IGR Dt	IGR Al	IGR Rt	IGR Pl	EGR Vl
Non-nasal sonorants											
Plain		*r									
Fricatives											
Plain		*s		*ʃ							*x
Plain Voiced	*b	*t *T *d	*ts *Ts	*tʃ	*⊙ *G⊙	*|| *g||	*| *g|	*! *g!	*!! *g!! *G!!	*ǂ *gǂ	*k *g
Complex stops											
Plain + Gl Voiced + Gl			*tsˈ		*⊙ˈ		*|ˈ	*!ˈ	*!!ˈ	*ǂˈ	*kxˈ
Plain + As Voiced + As		*th	*tsh *Tsh	*dtʃ		*||h		*!h		*ǂh	*kh
Stop clusters											
Plain + /x/		*tx *Tx					*|x	*!x			
Plain + /q/						*q||	*q|	*q!			
Plain + /q/ + As							*q|h		*q!h		
Plain + /xˈ/						*||xˈ	*|xˈ				
Nasals											
Voiced	*m	*nn			*n⊙	*n||	*n|	*n!	*n!!	*nǂ	*N
Complex nasals											
Nasal + As						*n||h	*n|h	*n!h			
Gl + nasal					*ˈn⊙		*ˈn|	*ˈn!		*ˈnǂ	

terized Proto-Kx'a; note that all modern Kx'a varieties have clearly larger phonological inventories. At the same time, the number of click types that were distinguished in the proto-language must have been larger than that of its daughter languages; as we observed in section 2.4, Proto-Kx'a appears to have distinguished six click types while the modern Kx'a varieties have only four, with the exception of Central !Xun, where five click types are distinguished.[11)]

3 Conclusions

We hope we have presented a viable hypothesis to the effect that ǂHoan and !Xun are genetically related languages and can be traced back to one and the same hypothetically set up ancestor language. Both have a large number of lexical and grammatical similarities in

11) An anonymous referee of this paper suggests that it would be good to relate this reconstruction to possible alternative scenarios in order to strengthen the present hypothesis. We are, however, not aware of any reasonable alternative scenario.

Table 7. Click types distinguished in the modern Kx'a languages and in Proto-Kx'a.

Click type	Proto-Kx'a	ǂHoan	!Xun dialects		
			W2	C1, C2	All other dialects
Dental	*|	+	+	+	+
Alveolar	*!	+	+	+	+
Palatal	*ǂ	+	–	+	+
Retroflex	*!!	–	+	+	–
Lateral	*||	+	+	+	+
Bilabial	*⊙	+	–	–	–

common which show regular phonological correspondences. Correpondences with sound correspondences between !Xun and ǂHoan are found on the one hand in grammatical morphology and on the other hand in the lexicon, especially but not only in basic semantic areas such as kin tems, important animals, body parts, or basic activities.

We were proposing phonological reconstructions based on the comparative method, using regular sound correspondences as a basis for tracing phonological and morphological features of the modern Kx'a languages back to the hypothetically proposed Proto-Kx'a language. On the basis of this reconstruction work we proposed a few features that we argue to have characterized this proto-language. For example, unlike all modern Kx'a varieties, we hypothesize that Proto-Kx'a had altogether six click types. Table 7 lists both the click types found in these varieties and the ones reconstructed back to the proto-language. We are aware that this hypothesis is not in accordance with standard assumptions on uniformitarianism in linguistic reconstruction since the hypothetically set up proto-language is more complex than any of the modern languages, including other Khoisan languages: Note that so far no language in the world has been found to distinguish as many as six clicks. But on the basis of the data presented above we see no way of reducing the number that must be postulated for Proto-Kx'a.

In none of the Kx'a languages is there a phonemic distincion between two types of liquid consonants. In some dialects of !Xun, an [r]-type of liquid is preferred while in others it is an [l]-type, and in many dialect areas no distinction is made. The situation in ǂHoan is slightly different in that, as the examples in Gruber (1973; 1975) suggest, [r] appears to be used before the high vowels ([i] and [u]) and [l] elsewhere. On the basis of this situation, we argue that there was no phonemic contrast in Proto-Kx'a either.

The genetic classification of what is traditionally known as Khoisan that we propose on the basis of the observations made in the present study is summarized in Table 8. There is good reason to assume that the genetic stocks that are distinguished in Table 8 can be further reduced in future comparative work. In particular, we consider it possible that Khoe and Kwadi can be assigned to one and the same family, as argued for by Tom Güldemann, and the same applies to the Taa and !Ui groups. What is required however in order to strengthen these hypotheses provided is more substantial evidence.

As Honken's (2004) detailed analysis shows, there are also many form-meaning resemblances that ǂHoan shares with other Khoisan languages, in particular with its neighbors

Table 8. The "Khoisan" families of southern Africa.

Traditional classification	Proposed families (genetic stocks)	Sub-families	Possible families
Northern Khoisan	Kx'a	!Xun	Kx'a
		ǂHoan	
Southern Khoisan	!Ui		Tuu (!Ui-Taa)
	Taa		
Central Khoisan	Khoe	Kalahari Khoe	Khoe-Kwadi
		Khoekhoe	
	Kwadi		

!Xóõ and the Central Khoisan language |Gui, and some of these similarities can be said to show regular correspondences. And much the same applies to the comparisons that Köhler (1973/4: 185–9) carried out between the Khoe (Central Khoisan) language Khwe and !Xun (= Zhu in Köhler's terminology). How these similarities are to be interpreted is an issue that is beyond the scope of this study. Honken (2004) goes at great length searching for criteria that allow to distinguish between borrowed and inherited material. We were restricted here to proposing *positive* hypotheses on genetically inherited expressions and we had nothing to say about all the form-meaning correspondences among Khoisan languages that are not covered by our hypotheses; possibly they, or at least many of them, constitute in fact loans, but we do not wish to exclude the possibility that some of them are relics of older genetic relationship patterns that have so far not yet been identified (cf. Köhler 1973/4). The problem of historical relationship among the Khoisan languages is still largely unresolved. For good reasons we assume, like many others, that the Greenberg (1963) classification is problematic; but in much the same way as it would be inappropriate to say that it is "correct" is it also not possible to say that it is "wrong".

Ernst Westphal suggested that, if one were to adopt what we call the Kx'a hypothesis then this would mean "that the people migrated from the !xũ area (probably Ghanzi) to their present abode [...]" (Westphal 1974: 246). In other words, he has no doubt that the homeland of both the languages and the peoples speaking these languages are located roughly in the region where the E1 dialect of !Xun is located and that the present distribution of the ǂHoan is the result of migration. But he does not give any evidence for this hypothesis.[12] Honken (2004: 18), by contrast, considers it more likely that there was migration in the opposite direction since this would account for the loanword evidence: The !Xun stem **ŋ!ólé* 'country' appears to originate from !Xóõ, which is spoken in the same area as ǂHoan, as is suggested by the fact that the !Xóõ stem *ŋ!úle*, PL *ŋ!únsáⁿ* is analyzable where

12) As much as Westphal exhibits an admirably careful attitude in his crosslinguistic comparisons, the conclusions that he draws from them on both linguistic and extra-linguistic prehistory are generally conjectural: None of the ones that we are familiar with is based on any sound methodology of reconstruction. A paradigm example is provided by his assumption that "there is a vague possibility that "Common Khoisan" was spoken some 50,000 years ago" (Westphal 1974: 247). There are no clues on how he arrived at this figure, quite apart from the fact that he emphatically denied that a "Khoisan family" ever existed.

the ǂHoan stem is not.

Until further evidence becomes available we side with Tom Güldemann (p.c.) in adopting the default hypothesis according to which there was no migration or other population movement—that is, both the !Xun- and the ǂHoan-speaking people are autochtonous to the areas where they live today. What this hypothesis suggests is that not only the area presently occupied by the two peoples but also the area in between, presently inhabited by Naro and other Central Khoisan-speaking people, was once territory of Kx'a-speaking people, even if they may not have been the only Khoisan people in that area. And this hypothesis also suggests that there was a specific historical event that may have caused the split between the two branches, namely the intrusion of Central Khoisan-speaking populations such as the Naro and ||Gana.

Abbreviations

a.n. = authors' note; C = consonant; NW-!Xun = Northwestern !Xun; P-KX = Proto-Kx'a; SE-!Xun = Southeastern !Xun; V = vowel.

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