Kwadi: from family-level to family-internal isolate

Tom Güldemann

Humboldt University Berlin and Max Planck Institute for Evolutionary Anthropology Leipzig

1 Introduction

1.1 The people and their language

- small isolated non-Bantu group with an earlier pastoral subsistence and a click language
- along the lower Curoca River in the Moçâmedes desert in south-western Angola (which is the extension of the coastal Namib desert stretching from the Orange River in the south to the town of Moçâmedes in Angola)
- alternate names: (Ova)Kwepe = likely Bantu exonym, (Ova)Kuroka = geographical denomination > potentially confused with other (Bantu) groups in the river valley
- with all likelihood referred to in some early Portuguese sources about the discovery and colonization of the area (1681 by Cadornega, 1770 by Pilarte da Silva; cf. Estermann 1956: 53-4)
- more detailed anthropological work only from the mid-20th century on: Estermann (1941, 1956, 1959), Almeida (1960, 1965), Guerreiro (1971) - fewer than ten speakers!!!
- southern Angola hosted in addition several other groups which clearly differed from Bantu groups linguistically (non-Bantu, click) and/or anthropologically (hunter-gatherer, different phenotype): (Ova)Twa, (Ova)Kwissi aka (Ova)Kwando or (Ova)Kwambundyu, Kedi, etc. (Estermann 1956, 1962)
- assimilated to Bantu as well as to acculturated African Mbali population in Portuguese settlements like Onguaia and Porto Alexandre (Guerreiro 1971: 98-9)
- language shift to Kwanyoka (dialect of Northwest Herero R311) and Mbali (local admixtured variety of Kimbundu H21) ?and Portuguese - language Kwadi (ISO: kwz) almost certainly extinct
- people can still be traced in the genetic profile of the local population (Coelho et al. 2009, Rocha 2010)

1.2 Linguistic research history

- occasionally mentioned in Bantu surveys without linguistic data - Johnston (1919: 800-1):

   93. Ndombe or Kwandɷ, 93a. **Korɷka**.[1]

   This speech of the Mossamedes coast, spoken by the Andombe, Akwandɷ, and **Akoroka** tribes (also by the Akubele and the Akuisɷ?), is as yet scarcely illustrated. ...

   [1] Mr. W. J. B. Chapman, of Southern Añgōla, asserts that the true Korɷka tongue is non-Bantu (Bushman) and not a dialect of Ndombe.

- no mention in early linguistic "Khoisan" surveys such as Schapera (1930), Greenberg (1950, 1963), Westphal (1956)
- field work and audio-recording by anthropologist A. de Almeida (Instituto Superior do Ultramar, Lisbon) in 1948 and 1955
- Westphal's Khoisan survey research across southern Africa between 1953 and 1971 brings Kwadi on the linguistic map (cf. Westphal 1978):
(a) collaboration with Almeida in the late 1950s[1] > Westphal (n.d.a/b/c)
(b) field work in 1964/65 including (un-located) audio-recordings > Westphal (1964/5)

   ... I had all my time cut out to get a straight vocabulary from the rather drunken old lady I had to work with. As you know she and two men are the only people speaking a good Kwadi. She was the best informant but unfortunately a Portuguese assigned to my camp plied her with liquor. (E. Westphal in a letter of 16/3/1976 to H. Honken)

1.3 Previous classification attempts

+ rare example of an African language which was not subsumed right from the beginning under one of the 4 Greenberg groupings - had the exceptional "fame" of an African isolate

(I)   Westphal (1962, 1963: 247): genealogically isolated

   These people [the Kwadi] were not visited but their language has been analysed by Professor António de Almeida and myself from tape recordings made by him in the field. Their language, we find, has no connection with any of the other non-Bantu languages but it must be noted that it too is a click language. Westphal (1962: 8)

(II)   Westphal (1965, 1971): potentially related remotely to Khoe

   This language was previously placed as a separate family consisting of this one language. Certainly grammatically it is not comparable to any of the Hottentot languages. However there are several words which resemble Hottentot words and although no soundshift relationship has been established yet, the language is placed here [within "Hottentot family"] as a concession to the possibility of a genetic relationship. It may turn out that relationship is in fact a contact relationship as the Hottentots did achieve a brief domination of Southern Angola under Jonker Afrikaner, but at this stage this seems to be an unlikely alternative. Westphal (1971: 380)

(III)   Köhler (1981): related remotely to Khoe due to lexical affinities

   A en juger par le matériel possédé sur le kwadi (Angola, région de Porto Alexandre), une partie des mots kwadi, enregistrés sur bande par A. de Almeida (Lisbonne), représentent des radicaux khoe, mais avec des changements des sons qui sont pareils à ceux du tshwa [part of East Kalahari Khoe]. A cause de ce fait, le kwadi est considéré comme une langue khoe marginale. ... Köhler (1981: 469)

[1]   The exact dates remain unclear: Westphal (1963: 247, n.d.a/b) gives 1956/7 and Westphal (1978) has 1958/9.

(IV)   Ehret (1982): related specifically to **East Kalahari** Khoe

> no linguistic data except for referring to 2 lexemes (*guu* 'sheep', *goe* 'cow, cattle'; see §2.4 below), but formative influence on non-linguistic research

> ... The probable candidates for bringing animal husbandry to southern Angola and Namibia were instead another Khwe people, speaking a language ancestral to that of the recent Kwadi pastoralists of coastal southern Angola. The Kwadi, raisers of small stock, had a language that appears to share several fundamental sound shifts with, and so belongs to, the Hietsho [= tshwa] subgroup of Khwe. (1982: 167)

(V) Ethnologue (!!!possibly based on Westphal (1971) ever since: 1 of 4 sister branches within "Central Khoisan" aka Khoe

+ none of the above classifications argued for by means of empirical linguistic data from either Kwadi itself or its supposed relative, the Khoe family (impossible at the time due to lack of historical-comparative reconstruction)

> new situation due to thorough historical-comparative study on Khoe by Voßen (1997)

2 Linguistic comparison

2.1 Typological profile

+ clicks and laterals as salient part of the phoneme system (cf. §2.4 below)

+ basic head-final syntax in both clause and noun phrase (Güldemann forthcoming b)

(1)   *ta*   *tʃi*   *mupa-wa* *kalena*
        1S   1S.POSS friend-D   have
        I have (my) two friends

(2)   *tçe'e-kõ-kho-de*
        people-kill-person-M.S
        murderer

+ complex verb morphology - not well understood

(3)   Subject   Object-*le/de*   Predicate
        sa   *ta-de*   *munana*   you (S) see me
        sa   *moⁿ-de*   *mo'nana*   you (S) see us (I) two [semantically odd!]
        sa   *ala-de*   *munana*   you (S) see us (E)
        ta   *sa-le*   *mondana*   I see you (S)
        ta   *ᵘwa-le*   *monanana*   I see you two
        ta   *u-li*   *mɔɔna*   I see you (P)'

+ major typological split among non-Bantu languages in southern Africa

> Kwadi goes clearly with Khoe pattern

Feature	Khoe	Kwadi	Non-Khoe
Dominant alignment	Accusative	?	Neutral
Word order	SOV		SVO
Head position in noun phrase	Final		Initial
Preposition	No		Yes
Default relational marker	No*	?	Yes
Verb serialization	No	?	Yes
Verb compounding	No*	?	Yes
Verb derivation morphology	Yes	?	No
First-person inclusive	No*	(Yes)	Yes
Gender assignment M vs. F	Yes		No
Gender-agreement class ratio	<1		≥1
Number marking on noun	Regular		Irregular
Number category dual	Yes		No
Number-sensitive stem suppletion	No		Yes

Note: * exceptions due to language contact with Non-Khoe

Table 1: Typological split Khoe+Kwadi vs. Non-Khoe (Güldemann forthcoming a)

2.2 Grammatical evidence: person-gender-number marking

Comparing Kwadi pronouns with person-gender-number (PGN) markers of Proto-Khoe

+ Westphal (1971: 393):

> Clearly by the application of this one criterion, the form of the pronominal system, and by the application of the associated criterion, the (phonemic) correspondence of each of the items, Kwadi, Sandawe, and Hatsa are not KHWE-KOVAB (Hottentot) [= Khoe] languages.

Person/gender	Singular	Plural	Dual
1st	***ta***, *tʃi*	*ala*, (*h*)*ina*	(*h*)*a-mu*
2nd	***sa***	(*h*)*u*	(*h*)*u-wa*
3rd masculine	*ha-dɛ*	*ha-u*	*ha-wa*
3rd feminine	*hɛɛ* (< *ha-e*)	*ha-'ɛ*	*ha-wa*

Table 2: Personal pronouns in Kwadi (Westphal 1971: 393, Güldemann 2004)

Person	Gender			Number
	Common	Feminine	Masculine	
1st	***ta**			Singular
2nd	-	***sa**	*tsa	
3rd	*'i	*sa	*ba	
1st	*kha-be[1]	*sa-be	*tsa-be[1]	Dual
2nd	*kha-do[1]	*sa-do	*tsa-do[1]	
3rd	*kha-da[1]	*sa-da	*tsa-da[1]	
1st	*tae	*s(a)e	*‖ae	Plural
2nd	*to (~*tu)	*sao	*‖ao	
3rd	*na	?[2]	*‖ua	

Notes: 1 dual forms not reconstructible for Khoekhoe

      2 reconstructed as *_ti_ for Khoekhoe and *_dzi_ for Kalahari Khoe

Table 3: The reconstructed PGN system of Proto-Khoe (Voßen 1997: 376-7)

+ overall system very different in size and categorical elaboration, but some similarities:

- typological parallels:

    - gender distinction feminine vs. masculine

    - number distinction singular vs. plural vs. dual

    - duals morphologically complex

- apparent sound-meaning correspondences:

    - 1st singular *ta

    - 2nd singular *sa

A deeper comparison (Güldemann 2004)

+ orientation towards modern attested Khoe forms reveals a few more affinities:

a) 1st-person dual rather *-m than *-be

Person	Gender			Number
	Common	Feminine	Masculine	
1st	-	-_ta_	-_re_	Singular
2nd	-	-_s_	-_ts_	
3rd	-_'i_	-_s_	-_b_	
1st	-**_m_**	-_sa_-**_m_**	-_kha_-**_m_**	Dual
2nd	-_khao_	-_sa-ro_	-_kha-ro_	
3rd	-_kha_	-_sa-ra_	-_kha-ra_	
1st	-_da_	-_sē_	-_tjē_	Plural
2nd	-_du_	-_sao_	-_kao_	
3rd	-_n_	-_dē_	-_ku_	

Table 4: The PGN system of !Ora on independent pronouns (Meinhof 1930: 43)

b) 1st-person singular allomorphism according to syntactic role: ta unmarked vs. ti possessor

(4)   Kwadi

a.   **_ta_**   _sa-le_   _kwaditʃi'e_ _laŋa_

    1S.SBJ   2S-OBJ PN   teach

    I (?am to) teach you Kwadi. (Güldemann 2004)

b.   **_tʃi_**   _hanyu_

    1S.POSS   father's.brother

    my father's brother (Güldemann 2004)

(5)   Standard Namibian Khoekhoe

a.   _!'áa-s_   _!'oá-**ta**_ _ke_   _ra_   _!úũ_

    town-F.S   to-1S.SBJ DECL IPFV go

    I am going to the town (Hagman 1977: 108)

b.   **_tíí_**   _'om-s_

    1S.POSS   house-F.S

    my house (Hagman 1977: 36)

+ revision of Proto-Khoe (based exclusively on Khoe-internal data)

Person	Gender			Number
	Common	Feminine	Masculine	
1st	***ta, *ti**			Singular
2nd		***sV**	***tsV**	
3rd		*sV	*bV	
1st	*khV-**m**	*sV-**m**	*tsV-**m**	Dual
2nd	*khV-do	*sV-do	*tsV-do	
3rd	*khV-da	*sV-da	*tsV-da	
1st	*ta-e	*sa-e	*!a-e	Plural
2nd	*ta-o	*sa-o	*!a-o	
3rd	*nV	*di	*!u(a)	

Table 5: The revised reconstructed PGN system of Proto-Khoe

+ step-by-step comparison of semantically corresponding forms:

	1st person	2nd person	
Khoe	**_ta_, _tV_**[front]	**_sa_**, _si_, _s_ (F)	_tsa_, _tsi_, _ts_ (M)
Kwadi	**_ta_, _tʃi_**	**_sa_**	

Table 6: Comparison of singular participant markers of Khoe and Kwadi

	Base	Suffixes	Singular		Plural		
			Masculine	Feminine	Masculine	Feminine	Common
Khoe	ǁ'ãi[1]	*a*-forms	-ba, -ma	-sa	-ǁua, -kua	-dza	-na
	xa, a, e, i[2]	Others	-b(**i**), -mi, -be	-s(**i**), -se, -hɛ	-ǁ**u**, -ku	-d(z)**i**, -d(z)e	-n(i)
Kwadi	**ha**		-dɛ	-e	-u	-'ɛ	none

Notes: 1 Khoekhoe form, 2 Kalahari-Khoe forms

Table 7: Comparison of non-dual 3rd-person markers of Khoe and Kwadi

	Plural		Dual		
	1st person	2nd person	1st person	2nd person	3rd person
Khoe	*-e	**-o**	**-m**	**-do**[1] < **-da-o**	**-da**[1]
Kwadi	*ala, hina*	**u**	(-)**mu**	**u-wa**	**-wa**

Note: 1 the alternants *-ro* and *-ra* are common throughout Khoe

Table 8: Comparison of dual and plural markers of Khoe and Kwadi

	Meaning or function	Sound form or feature
1	1st-person singular pronoun	*ti and *ta as allomorphs
2	2nd-person singular pronoun	*sa
3	**1st-person dual pronoun**	***mu**
4	2nd-person non-singular pronoun	*o or *u
5	3rd-person feminine singular marker	final front vowel or *-sV[front]
6	3rd-person masculine singular marker	final front vowel
7	3rd-person feminine plural marker	final front vowel
8	3rd-person masculine plural marker	final vowel u
9	3rd-person pronoun base	*xa
10	noun 'person' as pronoun base	*kho
11	nominal dual suffix	*-da

Table 9: Person-gender-number markers reconstructed for Proto-Khoe-Kwadi

Person	Number	
	+Restricted = Minimal	-Restricted = Augmented
+Speaker/+Hearer	*-ta*	***-tayo***
+Speaker/-Hearer	*-ko*	*-mi*
-Speaker/+Hearer	*-mo*	*-yo*
-Speaker/-Hearer	*-na*	*-da*

Table 10: Minimal-augmented pronoun system in Ilocano (after Greenberg 1988: 3)

Person/gender		- Augmented or Minimal	+ Augmented
+Speaker/+Hearer	= 1st+2nd inclusive	*mu	[?]
+Speaker/-Hearer	= 1st exclusive	*ti, *ta	[?]
-Speaker/+Hearer	= 2nd	*sa	*o or u
-Speaker/-Hearer	= 3rd masculine	stem[1] + (?)-*V[front]2	stem[1] + (?)-*u[2]
-Speaker/-Hearer	= 3rd feminine	stem[1] + *(s)V[front]2	stem[1] + (?)-*V[front]2

Notes: [?] no plausible reflex in both Khoe and Kwadi,
       1 deictic like *xa or generic noun like *kho,
       2 also used as gender-number index on nouns

Table 11: The reconstructed pronoun system of Proto-Khoe-Kwadi

Person/gender category	- Augmented or Singular	+ Augmented or Plural	Dual
1st+2nd (inclusive)	(*h*)a-**mu**	(*h*)ina	(*h*)a-**mu**
1st (exclusive)	**tʃi, ta**	ala	
2nd	**sa**	**u**	**u-wa**
3rd masculine	**ha-ɛ**	**ha-u**	**ha-wa**
3rd feminine	***ha-e**	**ha-'ɛ**	

Note: cf. generic noun *kho* 'person' with Proto-Khoe *kho-* in dual PGNs

Table 12: The pronoun system of Kwadi with innovated duals

Person/gender category	- Augmented or Singular	+ Augmented or Plural	Dual
1st+2nd (inclusive)	**-mu**	?	**(kho)-mu**
1st	**ti, *ta**	*e	
2nd	**sa**	**o**	**kho-da-o**
3rd masculine	stem+*(?)-V[front]	stem+*(?)-u	**kho-da**
3rd feminine	stem+*sV[front]	stem+*(?)-V[front]	

Note: cf. 3rd-person pronoun stem *xa*, *a* with Kwadi pronoun base *ha*

Table 13: The probable pronoun system of Pre-Khoe with innovated duals

+ two 1st-person augmented gaps possibly represent only one missing form (Cysouw 2005)

+ coincidence cannot be safely excluded (cf. Callaghan 1980)

> requirement of additional evidence for genealogical relationship

2.3 Lexical evidence

Westphal (1965)

+ lexical affinities admitted by Westphal (1965: 137) himself:

> ... although it [Kwadi] contains some 5-10 words comparable to Kora (i.e. !ora) but not Nama, it cannot **as yet** be classed with the Hottentot [= Khoe] languages. There are no sound-shifts which link Kwadi and any Hottentot language, the vocabulary is limited to the 5-10 similar (probably not common) words, and the grammar is very different. [**bold** TG]

- understatement in view of possible Kwadi-**common** Khoe comparisons in Westphal's
(1965: 139-44) own comparative lists of 61 lexical items across southern African "Khoisan":

    - 13/4 good matches: 'man', 'head', 'nose', 'heart', 'tongue', 'throat', 'breast' ~ 'milk'
    (2 meanings of 1 lexeme), 'meat', 'cow', 'sheep', 'skin', 'night', 'year'
    - 10 less clear candidate items: 'person', 'boy', 'woman' ~ 'girl', 'father' ~ 'mother',
    'eye', 'dog', 'zebra', 'tree'
    > 23% (low count) or 39% (high count) of vocabulary total!!!

- unsubstantiated borrowing scenario (apart from contradiction with above quotation)

> Their [Kwadi] country was invaded by the Nama in 1860 and hunting parties are known to have made their appearance there, perhaps from before that time, and certainly later. These visits may account for some of the Khoe vocabulary [apparently found in the Kwadi lexicon]. (Westphal 1980: 61)

> more systematic but restricted preliminary comparison: Güldemann and Elderkin (2010)

"Obvious" lexical matches

+ uncontroversial lexical similarities as promising candidates for cognates (recurrent problem of insecure Kwadi form due to diverse transcriptions)

(6)   Obvious matches between Proto-Khoe and Kwadi

	Meaning	Proto-Khoe (unless stated otherwise)	Kwadi
1	big	*kai	*kye*, *tya* [? < /ke/]
2	bite	*pa	*pa-*
3	blood	*|'ao	*|'o-* (|o- {W n.d.b: 6})
4	come	*ha	*ha* {W n.d.b: 5}
5	cow, cattle	*goe (WKa)	*goe-* {W 1965: 141}
6	drink	*kx'a	*kx'a* (*ka* {W n.d.b: 5})
7	go	*!ū, *kū (EKa)	*kõ* (*ko* {W n.d.b: 5})
8	grasp, take	*se	*se*
9	hear	*kum (Ka)	*kum* (*kūŋ*; *ku* {W n.d.b: 6})
10	male	*kx'ao	*k"o-* [= /kx'o/] {W 1965: 139}
11	meat	*kx'o 'eat (meat)'	*k"o-* [= /kx'o/] {W 1965: 141}
12	medicine	*tso, *so (Kk)	*so-* {W n.d.b: 4}
13	milk, breast	*pi	*pi-/bi-* {W 1965: 141}
14	mouth	*kx'am	*kx'ami-* (*kame* {W n.d.b: 5})
15	night	*thu	*thwii* [< /thu-/] {W 1965: 143}
16	one	*|ui	*|ui* {W n.d.b: 7}
17	pain	*thū	*thõ*, *thū* 'illness'
18	person	*khoe	*kho-* {W 1965: 139}
19	sheep	*gu	*guu-* {W 1965: 141}
20	skin, fur	*kho, also *kxo*	*kxo-* {W 1965: 143, n.d.c: 1}
21	smell	*mm (Ka),*ham (Kk)	*mh(u)*
22	throat	*dom	*tumu-*, also 'swallow' {W 1965: 141, n.d.c: 1}
23	tongue	*dam	*tame-* {W 1965: 141, n.d.c: 1}
24	year	*kudi, also *kuri*	*kuli-* {W 1965: 143}

+ most matches not found outside Khoe and Kwadi
> some of those which occur elsewhere (e.g., 'drink', 'medicine', 'sheep', 'throat', 'year') may still be true exclusive cognates - cf. Güldemann (2008) for 'sheep' and 'year'

The consonant systems compared

29EG+8IG	EG Lb	EG Al	EG Pl	EG Lt	IG Lt	IG Dt	IG Pl	EG Vl	EG Gl
Non-nasal sonorants									
Plain	w	l~r	y						
Fricatives									
Plain	f	s	ʃ	ɬ				x	h
Simple stops									
Plain	p	t	c	tɬ	(ǁ)			‡	k	ʔ
Voiced	b~ß	d	ɟ					g	
Complex stops									
Plain + As	p(f)h	t(s)h	ch	tɬh		|h		k(x)h	
Plain + Gl				tɬ'		|'	‡'	k(x)'	
Stop clusters									
Plain + /x/						|x			
Nasals									
Plain	m	n	ɲ			ŋ|		ŋ	

Table 14: The approximate consonant system of Kwadi (Güldemann forthcoming b)

16EG+30IG	EG Lb	EG Al	EG Al-Af	IG Lt	IG Dt	IG Al	IG Pl	EG Vl	EG Gl
Non-nasal sonorants									
Plain		?*r							
Fricatives									
Plain		*s						*x	*h
Simple stops									
Plain	*p	*t	*ts	*ǁ	*|	*!	*‡	*k	*?
Voiced	*b	*d		*gǁ	*g|	*g!	*g‡	*g	
Complex stops									
Plain + As		*th		*ǁh	*|h	*!h	*‡h	*kh	
Plain + Gl			*ts'	*ǁ'	*|'	*!'	*‡'	*kx'	
Stop clusters									
Plain + /x/				*ǁx	*|x	*!x	*‡x		
Plain + /kx'/				*ǁkx'	*|kx'	*!kx'	*‡kx'		
Nasals									
Plain	*m	*n		*n̥ǁ	*n̥|	*n̥!	*n̥‡		
Voiced						*n!	*n‡		

Table 15: The reconstructed consonant system of Proto-Khoe (Voßen 1997: 319, 326)

Note   Af affricate, Al alveolar, As aspiration, EG egressive non-click, Gl glottal(ization), IG ingressive click, Lb labial, Lt lateral, Pl palatal, Vl velar

+ striking differences with impact on possible comparisons:
- Kwadi with palatal and lateral series and more labials but relatively few clicks, only full dental series
- Khoe with alveolar-affricate series and far more clicks, notably full lateral, alveolar, and palatal series

Some emerging regular sound changes

+ the following correspondences exclude:
- all direct matches of non-click phonemes (e.g., *kx'~kx' in 'drink', 'male', 'meat', 'mouth')
- all correspondences with less than 3 clear examples (e.g., *‡'ũ, *'yũ (EKa) vs. ʼɲũ 'eat')

(7)   Retention of dental click in Kwadi

	Meaning	Proto-Khoe	Kwadi
3	blood	*|'ao	|'o- (|o- {W n.d.b: 6})
25	fem. genital	*|ĩ 'vagina'	|en- 'clitoris' {W n.d.c: 3}
26	hair	*|'ũ	|o'm {W n.d.b: 5, n.d.c: 1}
16	one	*|ui	|ui {W n.d.b: 7}
27	two	*|am	|a(m), |ã {W n.d.b: 7}
28	urinate	*|xam	|hã- {W n.d.a: 2, n.d.c: 3}

(8)   Replacement of palatal click by (alveo)-palatal egressive affricate in Kwadi

	Meaning	Proto-Khoe	Kwadi
29	head	*‡u (WKa), also cu	tshũ- {W 1965: 140} (ɸum {W n.d.c: 1})
30	heart	*‡ao, also c(a)o	ts'o- {W 1965: 140} (tso- {W n.d.a: 2})
31	nose	*‡ui, also cui	tʃwi- [? = /tʃui/] {W 1965: 140}

(9)   Loss of lateral click influx under retention of efflux in Kwadi

	Meaning	Proto-Khoe	Kwadi
32	fish	*ǁ'au (Ka)	'au- {W n.d.b: 5}
33	open	*ǁxobe,*ǁxode (Ka)	xoe-
34	sleep	*ǁ'om	'mu, also 'lie down'

(10)   Lenition of alveolar affricates to fricatives in Kwadi

	Meaning	Proto-Khoe	Kwadi
35	cook	*tsã(i)- (Ka)	Θẽ (sẽ {W n.d.b: 4})
36	foot	*dzĩ	ze- {W n.d.c: 2}
12	medicine	*tso, *so (Kk)	so- {W n.d.b: 4}

(11)   Alternation of nasal vowel and vowel-nasal sequence, !?in both directions

	Meaning	Proto-Khoe	Kwadi
25	fem. genital	*|ĩ 'vagina'	|en- 'clitoris' {W n.d.c: 3}
26	hair	*|'ũ	|o'm {W n.d.b: 5, n.d.c: 1}
27	leg	*tĩ	tin- {W n.d.a: 3}
37	rest	*sã	seŋ
38	see	*mũ	mun-
27	two	*|am	|a, |ã {W n.d.b: 7}
28	urinate	*|xam	|hã- {W n.d.a: 2, n.d.c: 3}

(12)   Apocope of final closed vowel in Khoe (cf. §2.3 for pronominal *-mu > *-m)

	Meaning	Proto-Khoe	Kwadi
14	mouth	*kx'am	kx'ami- (kame {W n.d.b: 5})
34	sleep	*‖'om	'mu, also 'lie down'
21	smell	*mm (Ka),*ham (Kk)	mh(u)
22	throat	*dom	tumu-, also 'swallow' {W 1965: 141, n.d.c: 1}
23	tongue	*dam	tame- {W 1965: 141, n.d.c: 1}

(13)   Monophthongization of /ao/ and /ai/ in Kwadi

	Meaning	Proto-Khoe	Kwadi
3	blood	*|'ao	|'o- (|o- {W n.d.b: 6})
30	heart	*ǂao, also c(a)o	ts'o- {W 1965: 140} (tso- {W n.d.a: 2})
10	male	*kx'ao	k''o- [= /kx'o/] {W 1965: 139}
1	big	*kai	kye, tya [?< /ke/]
35	cook	*tsã(i)- (Ka)	sẽ {W n.d.b: 4}

> involves ca. 40 lexical items, some with multiple occurrence in different, partly non-trivial sound changes - cf. 'blood', 'cook', 'sleep'
> some changes already observed in Kalahari Khoe
> involves relatively more words without clicks - partly expected from comparison of consonantal phoneme system: click loss and egressive replacement in Kwadi and click gain in Khoe as two explanations which can be relevant simultaneously

3. Summary

3.1 Resulting classification of a higher-order family Khoe-Kwadi

+ Kwadi is a sister to Khoe as a whole, untenable as a lower-order relative within it

Khoe-Kwadi
Kwadi   single language
Khoe
    Khoekhoe
    North: Eini†, Nama-Damara, Hai‖'om
    South: !Ora†, Cape varieties†
    Kalahari
    East
      Shua: Cara, Deti†, |Xaise, Danisi, Ts'ixa, etc.
      Tshwa: Kua, Cua, Tsua, etc.
    West
      Kxoe: Kxoe, ‖Ani, Buga, G|anda, etc.
      G‖ana: G‖ana, G|ui, ǂHaba, etc.
      Naro: Naro, etc.

Figure 1: Current classification of the Khoe-Kwadi family

3.2 Expected consequences for the reconstruction of Khoe

+ newly proposed relation informs the reconstruction within Khoe
> more coherent reconstruction of modern Khoe PGNs involving an alternation between a voiced stop and a nasal - previous reconstruction inconsistent

PGN category	*Khoe Voßen (1997)	Tshwa (Kalahari East)	‖Ani (Kalahari West)	!Ora (Khoe-khoe)	*Khoe Güldemann (2004)	Kwadi
3rd-person common plural	*-na	**-de**	-n(V)	-n	*-n(V[front])	-
1st-person dual	***-be**	**-be**	-m	-m	***-m(u)**	-mu

Table 16: Khoe PGNs with nasal initials and their reconstruction

+ other potential areas of grammatical comparison
> e.g. morphologically complex verb forms in Kalahari Khoe: CV(C)V-"JUNCTURE"-TAM; juncture morpheme depends on various morphological and phonological characteristics of the verb and its suffix - two types of juncture

(14)   Juncture morpheme in Kxoe

a.   kyámà-**à**-tè
        follow.spoor-J1-PRS
        kyámà-**nà**-hǎ
        follow.spoor-**J2**-PST

b.   kwê-**ɛ̇**-tè
        not.want-J1-PRS
        kwê-**rɛ̇**-hǎ
        not.want-**J2**-PST

(15)   Linking morpheme in complex verb forms in Kwadi

ta	OBJ	ɲwa-**la**-xɛ	I want to eat	...
ta		kwã-**na**-xɛ	I want to go	
ta	OBJ	'õa-**la**-xɛ	I want to buy	...
1S	(OBJ)	VERB-**X**-want		

> Kwadi -*la* (and its allomorphs) seems to be a marker of non-finiteness - this element and other verb morphemes potentially inform the historical analysis of the juncture in Khoe (cf. previous accounts by Elderkin 1986, Heine 1986, Voßen 1997)

3.3 Wider genealogical relations

+ relation to other non-Khoe languages in southern Africa less probable (pronominal system more comparable to Tuu and Ju-ǂHoan due to greater simplicity but far less so regarding sound-meaning correspondences), but more probable to Sandawe in eastern Africa:

Person/gender	Singular	Plural
1st	*tsi*	*sū:*
2nd	*hapu*	*sĩ:*
3rd masculine	*he-we*	*he-so*
3rd feminine	*he-su*	*he-so*

Table 17: The system of free pronouns in Sandawe

Category	Sandawe	Proto-Khoe-Kwadi
1st person singular pronoun	*tsi*	*ti (Kwadi *tʃi*)
2nd person singular pronoun	*ha-*	*sa
3rd person pronoun base	*he-*	*xa- (Kwadi *ha-*)
3rd person masculine singular suffix	*-w(e), -m*	*-V[front] (Khoe *-bV, *-mV)
3rd person feminine singular suffix	*-su*	*-V[front] (Khoe *-sV)

Table 18: Affinities between pronominal items of Sandawe and Khoe-Kwadi

3.4 Isolates and historical linguistics

+ isolates are normal (cf. Basque in Europe) just like diversity in general (Nichols 1992)

+ isolates should be treated regarding genealogical relationships like any other linguistic lineage - discovery procedure:

(I)   Typological (like superficial element-oriented) comparisons within a historically coherent area (cf. §2.1) are a useful tool for hypothesis creation - but take **diachronic typology** into account!!!

(II)   Identification of PARADIGMATIC GRAMMATICAL data of the individual-identifying type (Nichols 1996) - lay out grammatical changes between different systems which should comply with diachronic typology (cf. §2.2)

(III)   LEXICAL correspondences will turn up if the genealogical relation is real (cf. §2.3)

Abbreviations

D dual, DECL declarative, E exclusive, EKa Kalahari East, F feminine, I inclusive, IPFV imperfective, M masculine, OBJ object, P plural, PN proper name, POSS possessive, Kk Khoekhoe, S singular, SBJ subject, WKa Kalahari West

References

Almeida, António de. 1960. Dos Kwadi - um povo do deserto de Moçâmedes, Angola. Paper presented to the XXV Congresso Luso-Espanhol para o Progresso das Ciências, Sevilha, 1960. [In Almeida. 1994, 137-146.]

Almeida, António de. 1965. Bushmen and other non-Bantu peoples of Angola: three lectures. The Institute for the Study of Man in Africa (ISMA) Papers 1. Johannesburg: Witwatersrand University Press. [In Almeida. 1994, 203-244.]

Almeida, António de. 1994. Os bosquímanos de Angola. Lisboa: Ministério do Planeamento e da Administração do Território, Secretaria de Estado da Ciência e Tecnologia, Instituto de Investigação Ciêntifica Tropical.

Callaghan, Catherine A. 1980. An 'Indo-European' type paradigm in Proto Eastern Miwok. In Klar, Katherine, Margaret Langdon, and Shirley Silver (eds.), American Indian and Indo-European studies: papers in honor of Madison S. Beeler. The Hague: Mouton de Gruyter, 331-338.

Campbell, Lyle. 2003. How to show languages are related: methods for distant genetic relationship. In Joseph and Janda (eds.), 262-282.

Coelho Margarida et al. 2009. On the edge of Bantu expansions: mtDNA, Y chromosome and lactase persistence genetic variation in southwestern Angola. BMC Evolutionary Biology 9: 80.

Cysouw, Michael. 2005. Syncretisms involving clusivity. In Filimonova, Elena (ed.), Clusivity: typology and case studies of the inclusive-exclusive distinction. Typological Studies in Language 63. Amsterdam: John Benjamins, 73-111.

Ehret, Christopher. 1982. The first spread of food production to southern Africa. In Ehret, Christopher and Merrick Posnansky (eds.), The archeological and linguistic reconstruction of African history. Berkeley: University of California Press, 158-181.

Elderkin, Edward D. 1986. Kxoe tone and Kxoe "jonctures". In Voßen and Keuthmann (eds.), vol. 1: 225-235.

Estermann, Carlos. 1939. Coutumes des mbali du sud d'Angola. Africa. ?: ?-?.

Estermann, Carlos. 1941. Quem são os Corocas. O Apostolado 279/ 280.

Estermann, Carlos. 1956. Etnografia do Sudoeste de Angola 1: Os povos não-bantos e o grupo étnico dos ambós. Memórias, Série Antropológica e Etnológica 4. Lisboa: Junta de Investigações do Ultramar.

Estermann, Carlos. 1959. Os habitantes do Namibe: observação prévia. Portugal em Africa 26.

Estermann, Carlos. 1962. Les twa du sud-ouest de l'Angola. Anthropos 57: 465-474.

Greenberg, Joseph H. 1950. Studies in African linguistic classification: VI. The click languages. Southwestern Journal of Anthropology 6,3: 223-237.

Greenberg, Joseph H. 1963. The languages of Africa. Publications 25. Bloomington: Research Center in Anthropology, Folklore, and Linguistics, Indiana University.

Greenberg, Joseph H. 1988. „The first person inclusive dual as an ambiguous category". Studies in Language 12:1.1-18.

Guerreiro, Manuel Viegas. 1971. „Vida humana no deserto de Namibe: Onguaia". Finisterra 6:11.84-124.

Güldemann, Tom. 2004. Reconstruction through 'de-construction': the marking of person, gender, and number in the Khoe family and Kwadi. Diachronica 21,2: 251-306.

Güldemann, Tom. 2008. A linguist's view: Khoe-Kwadi speakers as the earliest food-producers of southern Africa. In Sadr, Karim and François-Xavier Fauvelle-Aymar (eds.), Khoekhoe and the earliest herders in southern Africa. Southern African Humanities 20: 93-132.

Güldemann, Tom. forthcoming a. Typology. In Voßen (ed.)

Güldemann, Tom. forthcoming b. Kwadi: phonology, morphology, syntax. In Voßen (ed.)

Güldemann, Tom and Rainer Voßen. 2000. Khoisan. In Heine, Bernd and Derek Nurse (eds.). African languages: an introduction. Cambridge: Cambridge University Press, 99-122.

Güldemann, Tom and Edward D. Elderkin. 2010. On external genealogical relationships of the Khoe family. In Brenzinger, Matthias and Christa König (eds.), Khoisan languages and linguistics: proceedings of the 1st International Symposium January 4-8, 2003, Riezlern/Kleinwalsertal. Quellen zur Khoisan-Forschung 24. Köln: Rüdiger Köppe, 15-52.

Hagman, Roy S. 1977. Nama Hottentot grammar. Language Science Monographs, 15. Bloomington: Indiana University Publications.

Heine, Bernd. 1986. Bemerkungen zur Entwicklung der Verbaljunkturen im Kxoe und anderen Zentralkhoisan-Sprachen. In Voßen and Keuthmann (eds.), vol. 2: 9-21.

Johnston, Harry H. 1919. A comparative study of the Bantu and Semi-Bantu languages. Oxford: Clarendon Press.

Joseph, Brian D. and Richard D. Janda, eds. 2003. The handbook of historical linguistics. Oxford: Blackwell.

Köhler, Oswin. 1981. Les langues khoisan, section 1: présentation d'ensemble. In Perrot, Jean (ed.), Les langues dans le monde ancien et moderne, première partie: les langues de l'afrique subsaharienne. Paris: Centre National de la Recherche Scientifique, 455-482.

Meinhof, Carl. 1930. Der Koranadialekt des Hottentottischen. Zeitschrift für Eingeborenen-Sprachen, Beiheft 12. Hamburg: Eckardt and Messtorff.

Nichols, Johanna. 1992. Linguistic diversity in space and time. Chicago: University of Chicago Press.

Nichols, Johanna. 1996. The comparative method as heuristic. In Durie, Mark and Malcolm Ross (eds.), The comparative method reviewed: regularity and irregularity in language change. Oxford: Oxford University Press, 39-71.

Rocha, Jorge. 2010. Bantu-Khoisan interactions at the edge of the Bantu expansions: insights from southern Angola. Journal of Anthropological Sciences 88: 5-8.

Schapera, Isaac. 1930. The Khoisan peoples of South Africa: Bushmen and Hottentots. London: Routledge and Kegan Paul.

Voßen, Rainer. 1997. Die Khoe-Sprachen: Ein Beitrag zur Erforschung der Sprachgeschichte Afrikas. Quellen zur Khoisan-Forschung, 12. Köln: Rüdiger Köppe.

Voßen, Rainer (ed.). forthcoming. The Khoisan languages. London: Routledge.

Voßen, Rainer and Klaus Keuthmann (eds.). 1986. Contemporary studies on Khoisan, 2 vols. Quellen zur Khoisan-Forschung 5. Hamburg: Helmut Buske.

Westphal, Ernst O. J. 1956. The Non-Bantu languages of Southern Africa. Supplement to Tucker, Archibald N. and Margaret A. Bryan, The Non-Bantu languages of north-eastern Africa. Handbook of African Languages 3. London: Oxford University Press, 158-173.

Westphal, Ernst O. J. 1962. A re-classification of Southern African Non-Bantu languages. Journal of African Languages 1: 1-8.

Westphal, Ernst O. J. 1963. The linguistic prehistory of Southern Africa: Bush, Kwadi, Hottentot, and Bantu linguistic relationships. Africa 33: 237-265.

Westphal, Ernst O. J. 1964/5. Kwadi field notes. Cape Town: Manuscripts and Archives Department, University of Cape Town, unpublished.

Westphal, Ernst O. J. 1965. Linguistic research in S.W.A. and Angola. In Die ethnischen Gruppen in Südwestafrika. Wissenschaftliche Forschung in Südwestafrika 3. Windhoek: S.W.A. Wissenschaftliche Gesellschaft, 125-144.

Westphal, Ernst O. J. 1971. The click languages of Southern and Eastern Africa. In Berry, Jack and Joseph H. Greenberg (eds.), Linguistics in Sub-Saharan Africa. Current Trends in Linguistics 7 (ed. by T. Sebeok). The Hague/ Paris: Mouton, 367-420.

Westphal, Ernst O. J. 1978. The lexical and grammatical evidence for the classification of the non-Bantu languages of Southern Africa. Cape Town: Manuscripts and Archives Department, University of Cape Town, unpublished ms. of conference paper.

Westphal, Ernst O. J. 1980. The age of "Bushman" languages in Southern African pre-history. In Snyman, Jan W. (ed.), Bushman and Hottentot linguistic studies (papers of seminar held on 27 July 1979). Miscellanea Congregalia 16. Pretoria: University of South Africa, 59-79.

Westphal, Ernst O. J. n.d.a. Kwepe vocabulary. Cape Town: Manuscripts and Archives Department, University of Cape Town, unpublished ms.

Westphal, Ernst O. J. n.d.b. The Kwadi language (for the use of Prof. António de Almeida). Cape Town: Manuscripts and Archives Department, University of Cape Town, unpublished ms.

Westphal, Ernst O. J. n.d.c. Word list of Angolan click languages. Cape Town: Manuscripts and Archives Department, University of Cape Town, unpublished.