



PHONOLOGICAL GLEANINGS FROM THE DIALECTS OF KHOEKHOEGOWAB (NAMA/DAMARA): TOWARDS INTERNAL RECONSTRUCTION

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The present article is the result of a re-perusal of lexical data that had been collected for a dialect survey (Haacke, *et al.* 1997), with the view to establishing possible trends that would reflect on diachronic depth in the genealogical development of Nama and Damara dialects. For the purpose of that dialect survey a closed set of data had been utilized primarily for establishing the dialects of Khoekhoe (short for Khoekhoe-gowab) and the dialectometrical proximity between them. The dialectometrical method essentially assesses lexical, not phonological proximity.

The upshot of that survey was that the Damara dialects as represented on the north-western periphery (Hai||om, ± Ākhoe, Sesfontein, Namidama) are closer to Naro — and thereby to the nucleus of proto Western Central Khoesaan, than any of the dialects of the Nama in central and southern Namibia (i.e. Central Nama, Topnaar, and the Bondelswarts dialect; see below). This is considered to be cogent evidence that — contrary to the popular but unsubstantiated claim — the Damara were already Khoe-speakers *before* they came into contact with the Nama. Only the dialect of the more centrally situated Damara (between Otjiwarongo and Rehoboth) who lived in contact with the Nama — here called Central Damara — assimilated largely to what is referred to as Central Nama. The rate of proximity between the Central Damara and Central Nama lexicon was found to be as high as 98,9%; the rate between Central Damara and Hai||om 79,5%. Of all Khoekhoe dialects Hai||om has the highest rate of proximity to Naro with an index of 34%, against 22,3% for, Central Nama.

This historical implication of the survey, which in essence was confined to a *statistical* investigation concerning dialect proximity, raised the question whether the lexical evidence would also be corroborated by phonological evidence. For this purpose any material available was perused randomly; *including such material from the dialect survey which was not part of the final word list.*

The hypothesis is that, if the north-western Damara dialects (that were not exposed to Nama influences) are closer to proto-Khoe than the Nama dialects are, then these dialects should bear evidence of earlier etymological stages, or of sound correspondences that are also evident in other Khoe languages of Botswana that are relatively close to the nucleus. By way of anticipation it may be said here, that even though certain trends are discernible, the evidence is not as consistent as one might have wished. Just as historical reconstruction for Khoesaa in general is known to encounter considerable problems because of the irregularity of correspondences, so even internal reconstruction within Khoekhoegowab faces similar difficulties. No reconstructions are attempted in this paper, but a random inspection of various phenomena may hopefully show up directions for further investigation.

The dialect areas referred to are the following:

- | | |
|------------------------------|---|
| ± Ākhoe (± Ā): | Formerly of eastern Owambo near Otsholo |
| Hai om (Hai om): | North of Tsumeb: From Etosha to east of Tsintsabis. |
| Ghaub-Dama (Ghaub): | The triangle between Tsumeb, Grootfontein and Otavi. This is a transitional area, rather than a dialect in its own right. |
| Sesfontein (Sesf): | The phonologically most divergent dialect cluster: in southern Kaokoland, with own variants. |
| Namidama (Namid): | Along the pro-Namib from south of Sesfontein to the Brandberg. |
| Central Dama (CD): | South of the Hai om (Otavi) to Windhoek/ Rehoboth, including the Kuiseb and Swakop areas in the west; i.e. bordering on the Nama. |
| Topnaar (Top): | On the lower Kuiseb near Walvis Bay. They have traits from the peripheral north-western dialects, as they had lived near the Skeleton Coast previously. |
| Central Nama (CN): | All the Nama in former Great Namaland, north of the Bondelswarts. |

Gobabis (Gob):	A rather non-distinct area in the east. Informants seemed to have some non-endemic traits.
Bondelswarts (Bond):	The Nama south of Keetmanhoop, with centre around Karasburg and Warmbad.

1. VOWEL JUXTAPOSITION THROUGH CONSONANT ATTRITION

One of the most obvious processes that can be observed internally is the loss of the intervocalic consonant of radicals. This phenomenon, which was first mentioned by Hahn (1880:31),¹ is a clear instance of a unidirectional historical process, which amounts to the following: Khoekhoe roots are all dissyllabic and originally had the structure C_1V-C_2V . C_2 can only be one of four consonants: either a labial fricative/plosive (**w**) or an alveolar trill/tap (**r**); or a labial or alveolar nasal (**m, n**). In a process of lenition these can be lost, leaving behind either oral or nasalized juxtaposed vowels, thus CVV or $C\tilde{V}\tilde{V}$. If these vowels are identical, they are conventionally considered to be "long" (oral) or "nasal" vowels respectively; if not identical, they are considered to be oral or nasalized "diphthongs". Identical oral pseudo-geminates are spelled with a macron to indicate their apparent "length", thus $V_1V_1 = \bar{V}$; nasal "diphthongs" are spelled with a macron on the first vowel to indicate nasality, thus $\tilde{V}_1\tilde{V}_2 = \hat{V}_1V_2$.

Another possibility of reduction is that, if C_2 is a nasal consonant **N** (thus being a sonorant that can constitute a tone-bearing syllable on its own), then the final consonant may be elided; viz. $CV-NV > CV-N$.²

As the "full" forms of radicals (i.e. $CV-CV$) are the historically older forms, it will be investigated here whether such original forms would occur predominantly in the peripheral Damara dialects, rather than in the Nama dialects.³

In the following instances the older, because non-attributed, form does occur in the **north** (short for Damara dialects of esp. the northern as well as the north-western periphery); i.e. the hypothesis is supported:

1 bad

<i>tsū-ai</i>	general
<i>tsū-ari</i>	Hai om
<i>tsūri, sūri</i>	Sesfontein

This set of manifestations provides the clue that the original form of *ais* "face"

and *ai* “on” is **ari* (and not **awi*, cf. Hai||om), and that the origin of the intensifying verb suffix *-ri* is **ari*.

2 chase

<i>dore</i> <i>gā</i>	Sesf (also remembered by Pastor E. Eiseb as “old” Damara)
<i>doe</i> <i>gā</i>	Hai om, Sesf, Top

Doe “move house, trek” is generally used.

3 chisel a hole (into wood)

<i>horo</i>	general, esp. Damara; <i>hore</i> Nama
<i>hō</i>	Bond

4 fall

<i>nara</i> <i>gōa</i>	Hai om
<i>nā</i>	general

5 your father

(<i>sa</i>) <i>awo</i> +	Hai om, Sesf
<i>sao</i> +	general (Note the contraction with the possessive pronoun.)

6 knot (in wood)

! <i>hona</i> +	general
! <i>hōa</i> +	Bond

The reduced form !*hōas* is the general word for knobkerrie.

7 leaf

⊕ <i>gare</i> +	Hai om, Ghaub
⊕ <i>gae</i> +	general, including Hai om and Ghaub; (not elicited among ⊕ Ākhoe)

Cf. also ⊕ *nareb*, which is generally manifested, except among Hai||om and ⊕ Ākhoe.

Only in the northern peripheral dialects is *awo* + used for “my father”. Otherwise *Awob* is generally used mainly in the biblical (hence archaic?) sense of Heavenly Father.

8 man

<i>arkhue</i> +	⊕ Ā, Hai om
<i>arokhoe</i> +	Hai om

cf. <i>kx'aro</i> +	Korana
<i>ao</i> +	all, except \neq Ā and Hai om (but cf. <i>aore khoe</i> + Hai om, Gob and Bond)

Naro uses the reduced form *kx'aukhoe*. Note the full manifestations *arogū* + (male sheep) and *arokhoe-ai* + (maleness; euphemism for genitals). Here Naro and the Bondelswarts dialect provide counter-evidence.

9 my father

<i>baba</i> +	Naro, Ghaub, Top
<i>bā</i> +	Top, CN, Bond

10 pipe; limestone

<i>!khorō</i> +	Bond
<i>!khō</i> +	general

11 pursue

<i>!khoe!gama</i>	Hai om
<i>!gū!gama</i>	Ghaub
<i>!khoe!gā</i>	used elsewhere (extent not determined); cf. <i>dā!gā</i>

12 rainbow

<i>tu(r)utsi!nao</i> + , <i>turus di !nao</i> +	Hai om
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Cf. the general Damara word *tū* for “rain” (verb).

13 select

<i>tsaru</i> \neq <i>ui</i>	Sesf, Outjo
<i>tsau</i> \neq <i>ui</i>	

14 swear

<i>/ā-//âxare</i>	general, incl. Sesf
<i>âxae</i>	Sesf

15 tell a lie, (deceive)

<i>gara</i>	Hai om
<i>gā</i>	Namid, CD, CN, Gob.

16 think

\neq <i>âi tsi kere</i>	\neq Ā
\neq <i>âi</i>	general

Kere probably is the original of *kē* “look” (variant *kō*).

17 **wide**

± <i>hawa</i>	Namid
± <i>hā</i> (flat, shallow)	general

18 traditional **shelf** (in hut)

!hama +	Hai om
!hā +	Hai om, Sesf, Namid, CN, Bond

19 **while** (conjunction)

<i>hā</i>	all, except ± Ā, Hai om and Ghaub
<i>hina</i>	Sesf, Namid, Top

The manifestation of *-CiNa* (and thus *Cía*) is confined to this one instance in Khoekhoe. Among the ± Ākhoe, Hai||om, Ghaub-Dama and Namidama a non-nasalized form *ia* was recorded, as is also found in Kxóé *ya*. The Topnaar most likely borrowed the full form from the Damara during their stay in the Kaokoland; cf. Haacke *et al.* (1997) on this.

Some interesting cases of reduction in roots with a nasal C_2 occur in Hai||om, where the nasal consonant is not elided, nor is the pgn-marker for the third person masculine singular *-b* assimilated, as it would be in all other dialects after a nasal consonant:

20 (**halm of**) **grass**

$\begin{array}{l} g\hat{a}m + b(a) \\ g\hat{a} + b \end{array}$	(= CVN) (= CŨŨ)	Hai om (not: * $ gam + mi$) elsewhere
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21 **stomach**

!nā + <i>b</i>	Hai om and elsewhere
!nām + <i>b</i>	(Hai om)
!nā +	Naro

In the following cases the “full” form is found in the **south**, contrary to the hypothesis:

1 **bird's nest**

(<i>ani</i>)!nuru +	Ghaub, CD
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cf. <i>tcaranguu</i>	Kxwé
<i>tsara!nū</i>	Naro

Here the Damara dialects have retained the full form, while even Naro — which is supposed to be closest to the nucleus — uses the reduced form.

2 centipede

<i>nāganeb</i>	optional in Sesf and among CD
<i>naraganaeb</i>	Ghaub, Sesf., Namid, CD, Top, CN, Gobabis

Cf. *nanagana(h)eb* CD, CN.

3 namakwa dove

<i>namakwa</i> ≠ <i>nawi</i> +	CN
‡ <i>naira</i> +	‡ Ā, Hai om, Ghaub
‡ <i>nai</i> +	Namid, CD, CN, Bond

4 tadpole

<i>purupē</i> + <i>b</i>	Top, CN, Bond
<i>pūpī</i> + <i>b</i>	CD

In the following instance Ghaub-Dama and CD has retained the full form, while Naro and Kxwé have the reduced form:

5 tick

<i>!orape</i> +	general
<i>!oape</i> +	Hai om, Damara?

In the present sample the instances are predominantly in favour of the hypothesis, *viz.* that the full, older forms are found in the older, i.e. peripheral Damara dialects, rather than in the southern, Nama dialects. Nevertheless, this result should not be overrated, for the assumption cannot be taken for granted that trends in phonological change (in this case attrition through lenition) need to take place at the same speed everywhere.

2. ELISION OF V₂

An alternative kind of attrition of the radical involves the loss of the final vowel, V₂, instead of C₂. This, however, is only possible, if the intervocalic consonant C₂ is a sonorant (N: *m, n*) and hence can act as syllabic nucleus, with its own tone. Such a root is thus still dissyllabic:

CV-NV > CV-N̩.

Evidence in the form of *simultaneously* existing forms is rare; yet these instances show up the historical process.

1 gnaw bones

/am	‡ \bar{A} , Hai om
/ama	Hai om

This word is not used among other groups.

In the following gloss the original nasal and V_2 are still evident in Naro:

2 know

‡ <i>an</i>	generally in Khoekhoe
‡ <i>âi</i>	Sesf
cf. ‡ <i>âna</i>	Naro (Barnard)
!â	Naro (Vossen in Barnard)

The Sesfontein variant, with a high front vowel [ɪ] as V_2 is quite significant here, as will be shown now. In several radicals that generally end in the nasal consonant *n* in Khoekhoe, the Sesfontein equivalent ends in a (nasalized) high front vowel — provided V_1 is not a front vowel; e.g.

sweet

‡ <i>khon</i>	Hai om, Ghaub, Namid, CD, all Nama dialects; Korana (Meinhof)
‡ <i>khun</i>	Hai om, ‡ \bar{A} , (CD) (i.e. northern dialects)
‡ <i>khûi</i> ⁴	Sesf, (Nami)
‡ <i>khen</i>	(CD), all Nama dialects
‡ <i>khin</i>	(CD)

hem (v.t.)

!khon	all dialects except ‡ \bar{A}
!khûi-am!gâ,	Sesf, but also !khenam!gâ
!khen	Hai om, Sesf, Top, CN, Bond

fetter (v.t.)

!gae!non	general
!gae!nûi	Sesf

smoke (n.)

/an + ni	general
/âi + b	Sesf

know

‡ <i>an</i>	general
‡ <i>âi</i>	Sesf
cf. ‡ <i>ana</i>	Naro (Barnard)

meat

// <i>gan</i> +	general
// <i>gâi</i> +	Sesf

Looking at the Khoekhoe forms (only) for “know”, $\neq an$ and $\neq âi$, the conclusion offers itself that the original form was * $\neq ani$, and that this form atrophied differently: In Sesfontein C_2 was elided, while elsewhere V_2 was elided. The Naro form (Barnard) reveals, however, that the original V_2 has not been *-i* but *-a*. This fact leads to the conclusion that in this reflex — and therefore most likely also in most other reflexes of this kind — the final vowel, next to being nasalized, was quasi “alveolarized” in a process of lenition of the alveolar nasal consonant (i.e. the vowel took on tongue body features of *n* by being fronted, and raised — if not already high, to *i*). It is interesting to note that this process does not take place if the first vowel is a front vowel;⁵ cf. e.g.

vomit

// <i>khûi</i>	general
but	
// <i>khen</i>	Sesf.

The correctness for this derivation is further supported by the fact that no instantiations are known where the *bilabial* nasal *m* is involved as C_2 . This process of quasi “vowel alveolarization” links the Sesfontein dialects also with other languages of central Khoesaaan, as is instantiated in the following case, where Sesfontein has retained the original form:

dwel, reside

// <i>ana</i>	Sesf
// <i>an</i>	general
// <i>âi</i>	Naro (Bleek in Barnard)

Cf. also the following set:

name (n.)

// <i>on</i> +	general, except Sesf
// <i>ûi</i> + <i>da</i>	Sesf
// <i>en</i> +	Hai om, Ghaub, Sesf, Top, (CN), (Bond)
// <i>in</i> + ⁶	Sesf
\bar{e} +	$\neq \bar{A}$
cf. // <i>kx'ûi</i> +, // <i>kx'ôe</i> +	Naro
// <i>xm</i> +	Kxwé
// <i>on</i> +, // <i>kx'on</i> +	Korana.

A question relating to the alternation of *o* with *e* often found in V₁, this is whether a certain preference can be associated with a particular dialect region.

3. ALTERNATION OF *o* WITH *e*

Honken (1988:53) correctly observes that a vowel lowering phenomenon is widespread in Khoesaaan, leading to an alternation between the high vowels *i* and *u* on the one hand, and the mid vowels *e* and *o* on the other. More will be said about this below.

The present section will present the areal distribution of front versus back mid vowel (*e* vs. *o*), showing that there is no clear geographical trend to be observed from the available data.

The following instances show for *e* a wider distribution in the *southern* dialects:

1 **sweet** (cf. above)

The back version with *-o-* is found in all regions, and is exclusive to Ghaub-Dama, Sesfontein (*-ûi*) and the Namidama. With the exception of these areas */khen* was recorded everywhere, but is less prevalent among the Central Dama (where in Omaruru also an instance of */khin* was recorded), *Gobabis and the Bondelswarts*.

2 **baboon**

<i>/nōra</i> +	all, except $\pm \bar{A}$, Hai om, Ghaub and Gob — which use mainly <i>/arub</i> , or <i>/gorab</i> ($\pm \bar{A}$, cf. Naro <i>/koarab</i>).
<i>/nēra</i> +	Hai om, Sesf, Top, CN, Bond. Not among Namid and CD.

The distributional pattern of this word is less apparent. Note the form */naidab* (\neq *naidab*) in Korana. As is known, *ai* is often assimilated to *ee*.

3 **fetter, handcuff** (see also above)

<i>/gae!non</i>	general
<i>/gae!nen</i>	Top, Bond

4 **pursue**

All dialects (except $\pm \bar{A}$) use compounds based on *-!gon*; e.g. *sao!gon*, *!gôa!gon* or *!khoa!gon* (Ghaub: *!gû!gôan*). Only in CN *!gôa!gen* was recorded as alternative.

5 namakwa dove

‖ <i>howo</i> +	general; also Naro: ‖ <i>khowo</i> +
‖ <i>owege</i> +	CN, Bond
‖ <i>hoe</i> +	CN

Mid vowel alternation is also possible in V₂:

6 peck at

‖ <i>howo</i>	generally Damara
‖ <i>howe</i>	generally Nama

Reduction may then lead to an alternation of *ō* with *oe*. In the following instance the regional distribution was not investigated:

rinderpest

sō ‖ *ōb*, *soe* ‖ *ōb*

The correspondences for "name" (see above, section 2.) show for *e* a wider distribution in the *northern* dialects. While the *-o-* version appears in all areas (Sesf = *-ūi*), the *-e-* version was not recorded in Namidama, CD, and Gobabis, and was rare in CN and the Bondelswarts dialect. /*En* is, thus, prevalent in the north-western periphery, from where the Topnaar probably acquired it.

In others, again, no predominance can be determined, e.g. "hem" (above), where *!hen* is used in the north among the Hai||om, in Sesfontein and among the Nama (Top, CN, Bond), but not among the Central Dama.

(*Sore*)*!hore* + (fata morgana) occurs generally, except among the ≠ *Ākhoe*, Hai||om and Ghaub. Only in CN occurs *!horo* + and *!horobe* +.

4. VOWEL LOWERING

The phenomenon of vowel lowering already pointed out by Honken (see above), is most apparent between the back vowels in Khoekhoe. On the face of it (because of geographical dominance of forms with *o*), it appears as if a nasal consonant *raises* the mid back vowel V₁ *o* to *u* in the northern dialects. Internal reconstruction from nasal vowel combinations, however, suggests the opposite process, viz. *lowering* of an original high vowel *u*, for the following reason. Only the following juxtapositions exist in Khoekhoe with a back vowel as V₁:

oral	nasal
<i>u + i</i>	<i>û + î</i>
<i>o + e</i>	
<i>o + a</i>	<i>ô + â</i>

Combinations of mid with high vowels do not exist in either sequence; e.g. **oi*, **io*, **ue*, **ôi*, **êu*. Judging from the non-existence of **ôi*, an original form **CoNi* was not available to develop into this juxtaposition. A perusal of written Nama texts does, however, contain words like the following:

‡ <i>homi</i>	tell a lie
/ <i>omi</i>	inherit
<i>omi</i>	disintegrate.

Such words are pronounced with a rather close *o* even in the Nama areas, and in the northern, more conservative Damara areas indeed with *u*, thus ‡ *humi*, etc. The latter phonotactic constellation, *CuNi*, is indeed the one that would have given rise to the vowel combination *ûi*.⁷ This means that *CoN* radicals that are pronounced *CuN* in the northern dialects probably also are manifestations of older forms, which resulted from the loss of the final vowel *i*. CVN radicals that are pronounced with the mid vowel *ô* even in the north (e.g. Hai||om *!hom + mi* mountain) are likely to have had their origin in roots of the type *CoNo* or *CoNa*, i.e. with a non-high final vowel.

The conclusion suggesting itself is thus, that vowel lowering, which is more prevalent in the central and southern, Nama areas, was a fairly late process, as it must have occurred only after the juxtaposition of *u + i* through loss of the nasal consonant that generally occurred.

The following examples illustrate the issue:⁸

1 breathe

/ <i>om</i>	general from Ghaub to Bond
/ <i>um</i>	‡ <i>Ä</i> , Hai om, Ghaub

Note, however, Naro *tsâ|om* and Kxwé *tsa|om*.

2 blow (wind)

/ <i>gom</i>	Hai om, Sesf, Namid, CD and to the south
/ <i>gum</i>	‡ <i>Ä</i> , Hai om, Ghaub, (Nami); also Korana

3 **millipede** (confined to $\neq \bar{A}$ and Hai||om)

xumme + $\neq \bar{A}$
xomme +, (*xûbe* +, *xombe* +) Hai||om

4 **spear** (confined to Damara and Top)

sum + $\neq \bar{A}$, Hai||om, Ghaub
som + Sesf, Namid, CD, Top

5 **house**

um + $\neq \bar{A}$, Hai||om
om + all others

It is conspicuous that the co-occurrence of the mid vowels and a nasal C_2 is constrained, as can be seen from the inventory of vowel juxtapositions:

oral (< *CVC₂V)

i^9
 . \bar{e}
 ai **ae** \bar{a} **ao** au
 . **oe** oa \bar{o} .
 ui . . . \bar{u}

C_2 = *r, w*

nasal (< *CVNV)

i^9
 . - . . .
 âi . â . âu
 . - ôa - .
 ûi . . . û

N = *m, n*

The mid front vowel *e* as V_1 does not combine with any vowel other than itself, be it in an oral or nasalized context. The back vowels *o* and *u* are mutually exclusive in the oral context, which is further support for the assumption of vowel lowering. The nasal set of *o* and *u* furthermore has systematic gaps, as the mid vowels never occur as V_2 after a nasal C_2 in a root.

In nasalized context no mid vowels occur at all, be they V_1 or V_2 or both, other than the combination *ôa*. This would invite the deduction that no combination of mid vowels with intervocalic nasal consonant could have existed to stand parent, other than **CoNa*.

Yet the roots of the type *CeN* evidently exist, as already shown. It is not clear whether these alternatives — which are less frequent than *CoN* forms, were derived from **CuN* forms *after* lowering to **CoN*, or from **CiN* forms *by way* of lowering. It is also conceivable that both sequences have occurred. Honken (*op. cit.*: 53) points out that the alternation between the high vowels *i* and *u* is widespread all through Khoesaa, and that the alternation is fossilized.

The following instances of high vowel alternation are on record for Khoekhoe. No clear regional tendency can be established with regard to the use of back or front vowels.

broth

	<i>sūro</i> +	all, except Hai om and Ghaub
vs.	<i>ṣīro</i> +	.all, but scarce in CN
cf.	<i>tsiri</i> +	Naro

slip

	‡ <i>khuri</i>	(Top)
vs.	‡ <i>khiri</i>	all, except ‡ <i>Ā</i>

slip (esp. from tree) (not among Nama, except Top)

	<i>suriwbe</i>	Hai om
	<i>dāsuri</i>	(Top)
	<i>surube</i>	(CN)
vs.	<i>siri</i>	Ghaub, Sesf, CD
	<i>sere</i>	Sesf, Namid, Top
	<i>seribe</i>	Hai om

Note the occurrence of high and mid vowels.

move backwards

	<i>khaoduru</i>	general
vs.	<i>khaoduri</i> +	‡Aodama (= northern CD)

scorpion

	<i>arube</i> +	general, except ‡ <i>Ā</i> , Hai om and Bond
vs.	<i>ari</i> +	Gob
	<i>kxari</i> +	Naro
	<i>kx̣əri</i>	Kxwé

namakwa dove (not Sesf)

	‡ <i>nawu</i> +	CD, CN
vs.	<i>namakwa</i> ‡ <i>nawi</i> +	CN
	‡ <i>nai</i> +	Namid, CD, CN, Bond
	‡ <i>naira</i> +	‡ <i>Ā</i> , Hai om, Ghaub
	‡ <i>nūra</i> +	‡ <i>Ā</i>
	‡ <i>nēra</i> +	Hai om

In this root various processes have applied randomly: high back/front alternation, lenition (loss of C_2), full regressive assimilation ($a+i > \bar{\imath}$), and reciprocal assimilation ($a+i > \bar{e}$).¹⁰ Note that the reduced form $*\neq nau+$ is not on record, suggesting that the variant with i is the original version.

milk weed

	<i>gūtama ō+</i>	general Damara
vs.	<i>gītama ō+</i>	general Nama

goat

	<i>puri+</i>	Sesf
vs.	<i>piri+</i>	general

The occurrence of *puri+* in remote Sesfontein appears to be a remnant of the loan derived from Tswana *podī*. In this case the available possibility of front/back alternation seems to have given the front vowel the upperhand.

The combination of the mid vowel *o* with other consonants — which are complementary to combinations with *u* (cf. Table 1) — tend to have non-lowered equivalents in the north-western dialects:

person

	<i>khoe+</i>	general, except $\neq \bar{A}$
vs.	<i>khue+</i>	$\neq \bar{A}$, Hai om
	<i>xue+</i>	Sesf

nine

	<i>khoe</i>	general
vs.	<i>khue</i>	Hai om

return

	<i>oa</i>	general
	<i>ua</i>	Sesf

all

	<i>hoa</i>	general
	<i>hua</i>	Hai om

The combinations *ue* and *ua* are also attested for \parallel Ani and Naro.

sit

$\neq n\hat{o}a$ general (< $\neq n\hat{u} h\hat{a}$)¹¹

vs.

$\neq n\hat{u}a$ Sesf

smash

$\neq n\hat{o}akh\hat{o}a$ general

vs.

$\neq n\hat{o}akh\hat{u}a$ Hai \parallel om

hunt

x\bar{u}re, x\bar{o}re Hai \parallel om

5. LOWERING OF *o* TO *a* IN THE BONDELSWARTS DIALECT

A well-known characteristic that distinguishes the Bondelswarts dialect from CN is the lowering of the mid back vowel *o* to the central low vowel *a* in V_1 position. Neither the reason nor the historical implications of this change are clear at this stage. Examples like “slave” show that it cannot be a matter of vowel assimilation. This phenomenon is apparently also not shared with the former southern neighbour, the Korana.

cow

goma + general, Korana

gama + Bond

slave

khowo + general, incl. Bond

khawo + Bond

wild cucumber

toma + (> *t\hat{o}a* +) general

tama + Bond

open mouth

khowa general, Korana

khawa Bond

reject an offer as puny

<i>!ho(w)a</i>	general
<i>!hawa</i>	Bond

The following gloss presents the reverse occurrence in one option for the Bondelswarts dialect:

rainbow

compounds based on *!hanab* (arched pole), e.g.

<i>!awi!hana+</i>	Ghaub, Namid, CD, Top, CN, Gob
<i>!noas !hana+m</i>	Korana (Wandres)
<i>!gao!hana+b/!hona+b</i>	CN, Bond

6. VARIANTS OF *ai*

Vossen (forthcoming, section 1.1.1), as already mentioned, has postulated that proto-Khoe **ai* is **ai* or **a* in proto-Khoekhoe and **ai* or **e* in proto-Non-Khoekhoe. It is another indication of older remnants in the northern dialects of Khoekhoe, that the combination *ai* is occasionally retained in those dialects:

long

<i>gaihu</i>	± \bar{A} , Hai om
<i>gaxu</i>	± \bar{A} , Hai om, Ghaub (Sesf), (Nami), CD, Gob, (Bond); <i>not</i> CN

vs.

gaxu (= *gāxu*) all, except ± \bar{A} ; Korana

also

gaoxu (Gob) cf. Naro *!kao*, Kxwé *kyao*

stomach

<i>!nā+</i>	all, except ± \bar{A} ; Korana
<i>!nai+</i>	Sesf

In some cases the distinction between the juxtapositions *ai* and *ae* is neutralized between dialects. Too few data are available, however, to allow any generalization concerning a regional bias:

eight

<i>!khaisa</i>	most widely used; cf. Korana <i>!khaisi</i>
<i>!khaesa</i>	Bond

my mother

<i>ai</i> +	all Damara, Gob; (no Nama);
<i>ae</i> +	Sesf
cf. <i>aitjo</i> +	Korana (Meinhof)
<i>ai</i> +	Naro

In other cases assimilation seems to apply:

jackal

<i>gaire</i> +	all, except Bondelswarts and Gob, rare in CN
vs.	
<i>gīri</i> +	all, except ≠ Ā and Hai om; but also Naro: <i>/kiri</i> +
<i>gēre</i> +	Hai om
cf. <i>aiiv</i> +, <i>iie</i> +	Korana

smell (v.t.)

<i>hamme</i>	≠ Ā, Hai om, Ghaub, CD, Top, CN
<i>hamai</i>	Hai om, Bond
<i>hami</i>	Bond

ram (n.)

<i>bai</i> +	all, except ≠ Ā, Hai om, Ghaub
<i>bīra</i> +	(Hai om)

7. CLICK LOSS

Click loss is a phenomenon well known from Central Khoesaa languages of Botswana (excepting Naro), as well as Kxwé. In Khoekhoe it is only associated with the Damara dialects of Sesfontein, and to a lesser extent with Hai||om, and perhaps Namidama. Contrary to trends in Botswana, it is not confined to the “abrupt” alveolar and palatal clicks *!* and *≠* (see Traill & Vossen 1997), as the following examples show. In most cases click loss involves merely the loss of the primary articulation, while the secondary articulation is retained in near-original form. This process is not consistent, however, as can be seen from the examples for */kh*

7.1 Loss of the Dental Click /

scorpion

<i>/hū+</i>	(Hai om), Sesf, (Namid), CD, generally Nama; Korana
<i>hū+</i>	(Hai om)

with (postposition)

<i>/kha</i>	general
<i>/khua</i>	≠ Ā
<i>xa</i>	Sesf

come

<i>/khī</i>	general, but less frequent in Sesf
<i>/hī</i>	Sesf
<i>sī</i>	Sesf

It is not clear whether in this last case the surrogate is formed by analogy to the semantically close word *sī* (arrive elsewhere) — which is tonally distinct, though.

duiker

<i>/nâu+</i>	≠ Ā, Hai om, Ghaub, Sesf, Namid; Naro
<i>nâu+</i>	(Hai om)

hunnable game

<i>am/nē + n</i>	Hai om, Bond
<i>amñi + na</i>	Sesf

7.2 Loss of the Alveolar Click !

The variants *!apupūe + b*, *!apu(ga)kūe + b*, *!apu(pe) + b*; *!apuro + b* (Hai) (lavender croton) are on record as having the alternatives commencing merely with a glottal stop, thus *apupūe + b*, etc. among the (northern) Damara.¹²

take, receive

<i>!khō!oa</i>	general
<i>!khō-oa</i> , <i>!khō ≠ oa</i>	(Sesf)

Both these variants are from the same informant in Sesfontein.

(my) brother

<i>ti !gūi + b</i> , <i>ti kūi + b</i>	Damara variants
--	-----------------

track down

(!gú)!gôa!gon, (!gú)!gôan;
gôan

Damara variants

The following is an unusual (erratic?) reversal of click loss recorded in Sesfontein:

right (side)

am general
!am Sesf.

fall through (e.g. ceiling)

||nā!khuru, ||nākhuu Damara variants

in (postposition)

!nâ general
nâ Sesf

7.3 Loss of the Palatal Click †

eat

†û general
hû Sesf

go hunting

ôaû (< ôa †û) Sesf

tell a lie

sûa Sesf
cf. tsu ≠ hôa †Ä, Hai||om, Ghaub

excessively soaked

†gon†gon general
dondon Damara (exact distribution not established)

7.4 Loss of the Lateral Click ||

Only cases of the lateral click with velar aspirated release are on record. In this case double lenition occurs: first the primary release is lost, then the velar aspirate or affricate is fricativized:

scratch

‖ <i>kha(r)o</i>	general Nama
<i>xaro</i>	northern/western Damara

spear

<i>xao-oa</i> +	Hai om
<i>kxao</i> ‖ <i>khao</i>	Naro
‖ <i>xao</i>	Kxwé (missile)

7.5 Alternation of Secondary Click Releases

Employment of different click releases occurs particularly in the peripheral regions. Noteworthy is the alternation between former depressor releases and non-depressor releases, particularly *Xh* (depressor) with *Xkh* (non-depressor). A systematic study of any possible influence of this alternation on the tonology has not yet been undertaken. Suffice it to say that in the “main-stream” versions (non-)depression did not occur quite consistently with *Xkh* as against *Xh*.¹³

A characteristic of especially the Namidama and Sesfontein dialects is the neutralization of the distinction between *Xh* and *Xkh*.

sour

‖ <i>khuru</i>	general
‖ <i>huru</i>	Sesf
cf. / <i>xuru</i>	Korana

righthand side

<i>am</i> ‖ <i>khā</i> +	general
<i>am</i> ‖ <i>hā</i> +	Sesf

namakwa dove

‖ <i>howo</i> +	general
‖ <i>khowo</i> +	Sesf, Namid; (Naro)

spear

‖ <i>haigôa</i> +	general. except ≠ \bar{A}
‖ <i>khaigôa</i> +	Sesf
cf. ‖ <i>hâe</i> ‖ <i>kxao</i>	Naro

blade (of animal)

// <i>khûi</i> +	general
// <i>hûi</i> +	Sesf

extract marrow

! <i>hû</i>	general
! <i>khû</i>	Sesf, Namid

pierce

! <i>khā</i>	general
! <i>hā</i>	Sesf; Korana

small

‡ <i>khari</i>	general
‡ <i>hari</i>	Sesf

crack a louse

‡ <i>khū</i>	general
‡ <i>hū</i>	Sesf

Almost all possibilities of release alternations can be instantiated with the odd example, but without any meaningful pattern emerging. The *Xkh/Xh* alternation or neutralization is by far the most prominent, albeit not consistent especially in Sesfontein. The above list only represents typical examples.

In the great majority of cases it is the fricative *Xh* version that occurs in the peripheral dialects, i.e. in the Namidama and Sesfontein dialects. Although these peripheral dialects usually reflect the more archaic, original form, one would universally expect a process of lenition from an aspirated or affricated release *Xkh/Xkx* to the fricative *Xh*, rather than fortition in the opposite direction, as found in some instances above. This would also be in harmony with other processes of lenition that elide the intervocalic consonants in roots, as well as root-initial consonants.

8. LENITION OF EGRESSIVE CONSONANTS

It appears as if the north-western peripheral dialects went even further in the process of lenition as described by Honken (1988) for the "Nama" dialects. The alternation between aspirated/affricative and fricative click releases is directly paralleled by an alternation between aspirated/affricative and fricative consonants, *kh* vs. *x*. Again, the peripheral dialects have an affricative if not fricative version, which in those dialects leads to a neutralization between *kh*

and original *x* as *C*₁. In the case of egressive consonants, however, the effect on tonemes was the opposite: *kh* consistently was a depressor, while *x* was a non-depressor.¹⁴ *Kh* typically is pronounced as an aspirated plosive in the Nama dialects, while affrication is typical for peripheral Damara dialects when lenition has been only partial. The affricate *kx* is also employed in Kxwé.

kh/x

skin

<i>khō</i> + b	general
<i>khō</i> +, <i>kxō</i> +	general; Naro

vs.

<i>xō</i> + b	Namid, Sesf
---------------	-------------

person

<i>khoe</i> +	general, except ≠ \bar{A} ; Naro
<i>khue</i> +	≠ \bar{A} , Hai om; Naro

vs.

<i>xue</i> +	Sesf
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cf. *kxoe* Kxwé

fly (v.i.)

<i>khâi</i>	general
-------------	---------

<i>xâi</i>	Sesf
------------	------

cf. *tsâi*¹⁵ Naro

It should be remarked here that in certain instances the fricative *x* of general Khoekhoe has the glottal fricative *h* as equivalent in Hai||om and ≠ \bar{A} khoe. If it is regular, then the proto-form remains yet to be established. Compare also Naro, for instance, for *xoa*/*hoa* (write).

wild animal

<i>ûitswa hū</i> + <i>n</i>	Hai om
-----------------------------	---------

cf. *ûitsaba xū* + *n* general: "living things"

cf. *xuu* + Naro: "thing"

butterfly

<i>apuxare</i> , <i>apuhale</i>	≠ \bar{A}
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<i>apuxare</i>	Namid, CD, CN
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dirty

<i>luriha</i>	Hai om
<i>lurixa</i>	general

ts/s

Honken (*op. cit.*) has demonstrated how “Nama” (i.e. essentially represented by the central and southern dialects) has merged five consonant series into two: *s* and *ts*^h.¹⁶ In the Sesfontein dialects speakers widely neutralize even this distinction by pronouncing “Nama” *ts* as *s*. The affricate has not entirely disappeared, though. It remains to be a topic for future investigation whether the lenition is a random process, or whether it is systematic, reflecting the different original affricates *before* they were merged in “Nama”. There is a good likelihood that at least some of it is systematic, as one particular informant, Gustav |Nūab, replaced *ts* with an alveopalatal fricative *sh* [ʃ] in certain but not all words (cf. ashes vs. dust).

The following examples serve as illustration:

ashes

	<i>tsao</i> + ¹⁷	general
	<i>tsao</i> +, <i>sao</i> +, <i>shao</i> +	Sesf
cf.	<i>thau</i> +	Naro

dust

	<i>tsara</i> +	general
	<i>sara</i> +	Sesf
cf.	<i>tshara</i> +	Naro
	<i>thara</i> +	Korana

float, swim

	<i>tsâ</i>	general
	<i>sâ</i>	Sesf
cf.	<i>thâ</i>	Korana

day

	<i>tsē</i> +	general
	<i>sē</i> +	Sesf
cf.	<i>tsē</i> +	Korana

night

	<i>tsuxu</i> + (= <i>tsūxu</i> +)	general
	<i>sūxu</i> +	Sesf
cf.	<i>thūxu</i> +	Korana

gnaw bones

	<i>tsoro</i> + <i>ui</i>	general
	<i>soronā</i>	Sesf

9. ALTERNATION OF EGRESSIVE CONSONANTS

Most alternations involve alveolar consonants, including the ones just discussed.

Most conspicuous are the variants of the nasal alveolar consonant *n*. While the nasal is typical for mainstream Khoekhoe, oral continuants or stops may appear in the peripheral dialects and in Botswana.

n/l

The lateral continuant *l* is not normally considered to be part of Khoekhoe, but it does appear in the peripheral dialects. In non-Khoekhoe the alveolar often appears as plosive *t*.

lightning

	<i>nawa</i> +	(Hai om rare) all, except ≠ \bar{A}
vs.	<i>lawa</i> +	Hai om, Sesf
	<i>tawa</i> +	≠ \bar{A} , Hai om, Sesf, (Namid)
cf.	<i>tawa</i> +	Korana
	<i>tewe</i>	Naro
	<i>téwe</i>	Kxwé

tongue

	<i>nam</i> +	all, except ≠ \bar{A} and Ghaub
vs.	<i>lam</i> +	Ghaub, Sesf, (Namid), (CD)
	<i>tam</i> +	≠ \bar{A} , Hai om
cf.	<i>tam</i> +	Korana, Naro
	<i>dam</i> +	Kxwé

fontanelle

<i>nīra</i> + <i>s</i>	general
<i>līra</i> + <i>s</i> , <i>pīra</i> + <i>s</i>	peripheral (distribution not exactly established)

The following set for “pursue” seems to be of a different diachronic origin, as it has mainly *n* in the peripheral dialects, to which it is confined. It may be the equivalent of *sao* (follow) in general Khoekhoe, but an alternation with the alveolar fricative *s* has not been noted elsewhere.

pursue

<i>nao</i>	Hai om, Sef
<i>nâu</i>	± \bar{A}
<i>lao</i>	Sef
cf. <i>sao!gon</i>	elsewhere, except Top

n/d

In the following case the distribution is contrary to that of the previous cases, with [t] being the more general:

flow

<i>dâu</i>	all, except ± \bar{A} , rare with Hai om
<i>nâu</i>	Hai om, Ghaub

n/r

The alternation between *n* and *r* seems to be rather unsystematic. Köhler (1966:150) reports this alternation also for Kxwé.

(wild) animal

In this instance *n* is predominantly northern, *r* southern.

<i>xamani</i> +	± \bar{A} , Hai om, Ghaub, Sef, Namid, CD, (Top), (CN), Gob, (Bond)
<i>xamari</i> +	Ghaub, Namid, CD, Top, CN, Gob, Bond

bite

<i>nâ</i>	general, except ± \bar{A}
<i>nā</i>	± \bar{A} , Hai om, Ghaub, (Namid)
<i>ndā</i>	± \bar{A} , Hai om, Sef
<i>dâ</i>	(Sef)
<i>râ</i>	(Sef)

cf.	<i>kaa, (taa)</i>	Naro
		<i>paa</i> Kxwé
		<i>baa</i> Korana

iguana

<i> nâre + b</i>	general, except \neq \bar{A} , Hai om, Bond
<i> nâre + b</i>	\neq \bar{A} , Hai om
<i> nâne + b, nana + b</i>	\neq \bar{A}

twinkle

	<i> namino, namiro</i>	Hai om
cf.	<i> gamiro + b (star)</i>	general Khoekhoe
	<i> gamoro + b (star)</i>	Korana

r/l

The trilled or tapped *r* and the plosive *d* are allophones in radicals (but not grammatical morphemes), with *r* appearing intervocalically, while *d* is root-initial.

butterfly

<i>apuxare +</i>	\neq \bar{A} , Namid, CD, Top, CN
<i>apuhare +</i>	\neq \bar{A}
<i>apuxale +</i>	Hai om

d/k

One further correspondence underpins the close link of Hai||om to other Central Khoesaaan languages: When the alveolar stop [t] is followed by *i*, it becomes a velar, e.g.

ten

	<i>disi</i>	general; Naro
	<i>kisi</i>	Hai om
cf.	<i>djisi</i>	Korana

The reflex with the velar consonant appears to have been the general form in the Cape dialects, according to the records cited by Nienaber (1963:478).

Some Hai||om speakers also use *ki* instead of the common *di* as possessive particle.

10. VOWEL ANTICIPATION

One phenomenon that might deserve further comparative attention is the anticipation of V_2 in a root:

$$CV_1CV_2 > CV_1V_2CV_2.$$

This process is not confined to Khoekhoe, but is common to all Khoe languages and has been recorded even as far as Zulu of Northern Khoesaaan (cf., e.g., the discussion of Jan Snyman's data by Elderkin 1988:130).

No clear trend can be detected from the available data, other than that $\neq \bar{A}$ tends not to anticipate the vowel when other dialects do. With the exception of the gloss for "warthog", Bondelswarts always uses the extended form with anticipated vowel.

give chase

!kholesarugu	$\neq \bar{A}$ (pursue)
saru	Hai om, Sef, (Top), CN, (Bond)
sauru	Hai om, Sef, Namid, CD, Top, CN, Gob, Bond

A Damara in Sesfontein considered *saru* to be Nama.

all

horaga	Hai om, Ghaub, Sef, CD, CN
hoaraga	Sef, CD, Top, CN, Gob, Bond
hoar'ga	Ghaub
cf. horaka	Korana

baboon

/gora+	$\neq \bar{A}$
cf. /koara+	Naro

warthog

gari+	$\neq \bar{A}$, Hai om
gairi+	Hai om, all others except Bond

cripple

!hora+	general (not established in detail); Korana
!hoara+	Bond

rough

/khor	general (not established in detail)
/khoara	Bond

engrave

<i>xora</i>	general (not established in detail)
<i>xoara</i>	Bond

More instances of vowel anticipation are on record, but their distribution is not known reliably.

11. MORPHOLOGICAL RELICS

The peripheral dialects, particularly the Sesfontein dialects, have retained some instances of an early stage of grammaticalization of the present stative aspect marker *a*. In the fully grammaticalized form this aspect marker has become the “oblique” case suffix, marking NPs that serve as objects, deposed subjects and as subjects of interrogative sentences. In this process a “minimal” sentence, i.e. a sentence with only one (lexical) stem, which serves as predicate head, can assume only two forms.¹⁸ Crucially, these forms differ in meaning, best illustrated with an adjective:

<i>Kai b a</i>	Predicative rendering: “He is big”
big he stat	
<i>Kai a b</i>	Copulative/nominal rendering: “He is a big one”
big stat he	

In the predicative rendering the stative marker (**stat**) grammaticalizes into a suffix denoting the “oblique” case *Kai+ba*; the copulative rendering presents the “nominative” form, which — after elision of the stative marker *a* — is grammaticalized into the surface citation form of a noun, consisting of a “stem + pgn-marker”, viz *kai+b*. The stative marker can only be deleted in the copulative strategy, i.e. *before* the pgn-marker.

Typically, in mainstream Khoekhoe the citation form of the noun is the *nominative*, e.g. *tara+s*. The northern dialects, i.e. ≠Ákhoe, Hai||om and the Sesfontein dialects by contrast, share with Naro the trend that frequently the *oblique* form of the noun is offered as citation form during interviews, thus *tara+sa*. Sometimes the noun “stem” (which is the true noun underlyingly) is even cited without pgn-marker, e.g. *tara* — a behaviour shared with Kxwé. This hardly happens in mainstream Khoekhoe.

A further characteristic of these northern dialects is that in the oblique form the phonological adaptation of the grammaticalization has not proceeded all the way (yet), in that assimilation (or deletion, as the case may be) has not taken place systematically. Thus, typically, the oblique form of nouns with the

third person masculine plural pgn-marker *gu* is not *ga* but *gua*; e.g. *!am + gua* (feathers) instead of *!am + ga*.

Traill & Vossen (1997:21–56) report the same phenomenon from various Khoe languages as reflected in the following extracted table:¹⁹

“Nama	.kū (sic)
!Ora	.ku
!Ani, Kxoe, Naro, Ts’ixa, !Gana	!ùà
Cara, Danisi, Cua	.kùà
Kua	(.ku)”.

Further evidence of incomplete grammaticalization is found in the Sesfontein dialects with regard to the nominative form as well. While in mainstream Khoekhoe the pronominal use of the definite article (often erroneously referred to as pronoun stem) for the first person singular and plural is *ti + ta* and *si + da* respectively, the corresponding forms in Sesfontein are *tia + ta* and *sia + da*. These forms are not phonologically cute quirks, but simply the *copulative/nominative* renderings in which the stative aspect marker *a* has not been elided. The same is found in other forms like the first person common gender plural *saa + da*, but it is not as conspicuous.

Such structures exist in mainstream Khoekhoe as well, frequently with the non-deletable present *progressive* marker *ra*, but only in fossilized *nouns*; e.g. Nama *bai(ra) + b* (ram, lit. he who butts). In the peripheral dialects even such nouns are more frequent, e.g.

your parents

<i>sao + n</i>	general
<i>saoa + n</i>	Hailom (lit. they <i>who are</i> your parents).

12 CONCLUSION

While the present survey is bound to remain largely cursory because of the limitations of the data gleaned, it should have become evident nevertheless that the conspicuous *dialectometric* proximity (*i.e.* of the *lexicon*) of the northern and western Damara dialects to Naro (cf. Haacke *et al.* 1997) — which according to Köhler (1975:329) is closest to the proto-Central Khoesaa nucleus — is paralleled by phonological trends. Aspects like the non-attrition of the intervocalic consonants of roots; the fronting and raising of final vowels by the alveolar nasal; the resistance to vowel lowering in general, and in particular of *u* to *o* before *e* or *a*; the retention of the loan *puri* (goat) as against *piri*; the retention of the juxtaposition *ai*; click loss; alternation of alveolar

consonants; the incomplete grammaticalization of the present stative marker *a*; all these suggest that these peripheral dialects are diachronically still closer to the genealogical nucleus than dialects further south.

It is hoped that the present data may have shown up the need for systematic comparative work in the northern dialect regions of Khoekhoe, with the purpose of establishing the link to the non-Khoekhoe languages of Khoe. It should also have become clear by now that for comparative purposes existing sources on “Nama” can no longer be considered to be representative of the Khoekhoe language as a whole.

ENDNOTES

- 1 See also Beach 1938:259 *et seq.* on the “decomposition theory”, which he acknowledges to Vedder, and Haacke (1988:145) for further instances.
- 2 For a discussion of this issue cf. Haacke 1992, chapter 2.
- 3 It should be emphasized that the fact that a form is quoted here as instantiation, is not to be construed as a claim that such a form is the predominant form in that area. It may be a single manifestation. If it clearly is a minor manifestation in an area, it appears in parentheses.
In order to avoid unnecessary detail that may vary between dialects, nouns will be quoted without pgn-marker whenever discrepancies occur. Instead, a plus-sign will remind the reader that in most dialects a pgn-marker would follow.
- 4 Nasalization of vowel combinations is only indicated on the first vowel in the standardized orthography; e.g. [ūĩ] = *ūi*.
- 5 Variants of roots with $V_1 = o$ that have *e* or *i* instead, present instances of rule bleeding, as a prior change to the front vowels does not permit the “alveolarization” of vowels. They furthermore illustrate that diachronic changes need not consistently take place in the same order through a linguistic area.
To compound the issue, cf. Honken’s claim (1988:54) that within general Khoesaaan Zhu -ŋ is to be derived from *-ni.
- 6 /In can probably be considered to be the non-lowered version of of- /en, and would thus represent the older version of the two. Cf. the discussion of a general process of lowering, below. /In presents an instance where the relic form was preserved in Sesfontein. The alternation between the original high vowels in */in and */un is part of a general phenomenon in Khoe languages, as is to be illustrated below.
- 7 This holds, of course, only for those roots which did not develop through what was called quasi vowel “alveolarization” earlier.
- 8 As the fieldnotes were recorded not in phonetic script but in standard orthography by the fieldworkers, the exact value of the back vowel could not always be reflected. They may thus, at times, have been forced to commit themselves to either *o* or *u* with some hesitation. Yet the trend is beyond doubt.
- 9 Pseudo-geminate vowels are spelt as “long” vowels if oral, e.g. *i*, and as nasal vowels if nasalized, e.g. *ĩ*.
- 10 The fact that Hai||om here uses \neq *nēras* next to \neq *nairas* again highlights the links to

- the non-Khoekhoe branches of Khoe. Vossen (forthcoming) reconstructs proto-Khoe *ai as *ai or *a in proto-Khoekhoe and as *ai or *e in proto-Non-Khoekhoe.
- 11 This is a case of partial assimilation between the morphemes.
 - 12 The reader is again reminded of the orthographic conventions of Khoekhoe: /a = [ʔa], /ga = [ʔa] (voiceless). Words commencing with a vowel in the spelling actually commence with a glottal stop, e.g. a. = [ʔa..]. The letters p/b, t/d, k/d all represent voiceless stops and are used distinctively merely to indicate higher and lower tones respectively.
 - 13 See Haacke (1992b: 77 *et seq.*) for a detailed discussion of tonogenesis in Khoekhoe.
 - 14 Although in the click release the fricative alternant is a *glottal* fricative, the glottal fricative consonant *h* is not involved in the alternation with *kh/kx* in egressive consonants. With *h* only *x* alternates.
 - 15 Double underlining indicates a pressed vowel.
 - 16 The affricate is aspirated, but in word-initial position only. It is not aspirated in the second person masculine singular pgn-marker, which appears in final position, e.g. *sats* [saats].
 - 17 The fact that the general Khoekhoe word has the [ˈˈˈ] melody, which has not been not affected by the depressor consonant *ts*, may possibly be indicative of the origin of the proto-form, considering that the reflex with *sh* was found in Sesfontein.
 - 18 For a more detailed argument cf. Haacke *i.a.* 1992a: 150.
 - 19 These data suggest, not surprisingly, that the hypothesis that Khoekhoe surface nouns (i.e. with enclitic pgn-marker) are of sentential origin, holds generally for Khoe languages.

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QUECLARATIVES IN XHOSA

Jackie J. Jones & Justus C. Roux

INTRODUCTION

The study of prosody in African languages in general, and in the Nguni languages in particular, boasts a wealth of descriptions stretching over many decades. In Roux (1995:27) the nature of these descriptions was assessed and it was argued that much of this data lacks authenticity and is often incomplete and even contradictory in nature. This is mainly due to the impressionistic bases of these descriptions, and it was felt that levels of descriptive adequacy could be raised considerably if data acquisition took place in a more controlled manner and if the impressionistically observed phonetic forms were actually subjected to some measures monitoring their accuracy and comprehensiveness. After all,

... the scientific description of speech sounds must necessarily aim at characterizing explicitly and quantitatively – rather than skillfully imitating – the acoustic events as well as the psychological and physiological processes that speakers and listeners use in generating and interpreting utterances (Lindblom, 1980:7).

In this contribution we would like to demonstrate the diversity of (impressionistic) opinions with respect to a topic such as queclaratives in Xhosa. It will be proposed that prosodic studies in the African languages should move beyond the “good ear” of the “skilled phonetician” in his/her task of describing, for instance, tonal patterns in a given language. It is suggested that researchers in this field change their focus from solely describing their own interpretation of the production of a mother tongue speaker’s renditions of words, phrases or the like to concentrating on the actual performance of the mother-tongue listener. That is, to monitor through experimentation in speech analysis and synthesis the mother-tongue listener’s

(linguistic) responses to alleged differences in the prosodic structure of an utterance.

PROSODIC QUALITIES OF QUECLARATIVES

Queclaratives represent a certain type of interrogative and may be defined as "utterances with declarative form, functioning as questions." (Geluykens 1988:467). In normal communication in a language such as Xhosa, these forms appear from time to time, cf.

- | | | | | |
|-----|-----|----------|----------------|----------------|
| (1) | (a) | Yinkomo. | It is a beast. | (Declarative) |
| | (b) | Yinkomo? | Is it a beast? | (Queclarative) |

It is clear that in utterances such as 1(a) and 1(b) above some type of prosodic information serves to distinguish between a declarative and a queclarative. Ohala (1983:1) in addressing this topic in general terms states that:

Where the same utterance can be produced as a question or statement using intonation i.e. without any lexical or syntactic markers, it is almost invariably the case that high or rising tone signals the former, whereas low or falling pitch the latter.

This general observation seems to hold true also for languages such as Xhosa and Zulu, albeit as a superficial observation. However, scholars have identified other factors which may also play a distinctive role in disambiguating statements and corresponding questions in the Nguni languages. Some of these impressionistically acquired "additional" factors will now be assessed in view of experimentally derived data of Theron (1991) on the topic.

Lanham (1963:58) ascribes to the view of differentiating intonation curves for statements and questions respectively, adding that the interval between penultimate H and L in the final syllable may also be contrastive. The duration of the penultimate vowel is also regarded as important by Lanham; a relatively long penultimate vowel is typical of questions, whereas an extra long vowel signals a statement. Riordan (1969:14) is in agreement with these views, supplementing them, however, with the observation that questions normally start at a higher absolute pitch level (maintaining this level throughout the utterance) and that no tonal downdrift is thought to occur with questions. Khumalo differentiates between these sentence types in the following manner:

Statement intonation is unmarked for key (i.e. it is at "average" speaking key), while question intonation is at a much higher key (1981:91).

Statement intonation is unmarked for tempo (i.e. it is at "average" speaking tempo), while question intonation is at a much faster tempo (1981:92).

In statement intonation the tone of the final syllable of the phonological phrase is lowered ... this lowered final tone does not occur in question intonation (1981:92).

Louw (1968), using a "pitch extractor", presents experimental phonetic data on pitch contours in Xhosa in which he cursorily also touches on the difference between statements and questions. His few examples on the topic, three to be exact (1968:87), support the impressionistic notions without however quantifying them to any degree.

The results of an experimental analysis performed by Theron (1991) of some of these phenomena involving the production of 60 statement-question pairs by one male and one female speaker of Xhosa will now be considered.

Sentence duration and speech tempo

The data presented by Theron (1991:59) indicates a distinct shortening of sentence duration in questions as opposed to statements. In 87,5% of the total number of cases the statement sentences were produced with a longer duration than corresponding question sentences. On average question sentences constitute 88,97% of the duration of corresponding statements.

As far as speech tempo is concerned, Theron (1991:61) indicates that there seems to be some variation between speakers. Her first informant produced 90% of his questions at a faster tempo (determined as syllables per second), 1,67% of the productions showed no difference at all, whilst 8,3% of his statements; were in fact produced faster than corresponding questions. The second informant produced 83,33% of her questions faster than the corresponding statements, however, in 16,67% of the cases the opposite was true. Control data of the second author indicate an average tempo of 4,9% syllables/second for statements and 5,5% syllables/second for corresponding questions.

This data to a large extent supports the impressionistic claims of scholars that argue for relatively longer duration and slower rate of articulation of statements as compared with corresponding questions.

Penultimate vowel duration

Theron (1991) expresses the duration of the penultimate vowel as a percentage of the total duration of the sentence. Although there seems to be a general tendency in support of the view that penultimate vowel duration is shorter with question sentences than with corresponding statements, the situation is not so clear-cut at all. Theron (1991:64) points out that in 33,4% of instances speaker #1 produced a longer penultimate syllable in questions, and this figure is even as high as 41,67% for speaker #2. On the basis of these findings it is very difficult to argue in support of impressionistic data that penultimate vowel shortening is a significant or relevant perceptual cue differentiating statement and question sentences in Xhosa.

Tonal interval between the final two syllables of an utterance

Lanham (1963:58) asserts that statements and corresponding questions may be differentiated in terms of the interval in tonal realisation between the penultimate and final syllables. The experimental data of Theron (1991:77-79) indeed support this view, indicating a mean pitch interval between the final two syllables of 35 Hz in the case of statements, and 75 Hz in questions.

Tonal register and tonal movement

Riordan (1969:16) states that a question "begins on a slightly higher absolute pitch and maintains it throughout". Theron's results (1991:67) support this view in general claiming an approximate tonal register for a male person being between 115 and 210 Hz for statements and between 170 and 260 for questions.

As far as tonal movement is concerned, Theron (1991:69,80) lends support to the view that statements are characterized by tonal downdrift, however, she also identifies a measure of downdrift in echo-questions. This attested downdrift, normally, is less than in corresponding statements; however, she also refers to examples (1991:73) where an equally sharp decline of the F_0 curve may occur with questions as well. In these cases she argues that a sudden change in the pitch value of the final (and/or penultimate) syllable may be responsible for maintaining the perceptual statement-question differentiation. She demonstrates this phenomenon (1991:74, figure 23) by indicating a LL sequence changing to a LH.

The experimental data discussed to a very large degree supports thus far the sum total of impressionistic claims made by scholars in this field. It is, however, true that none of the impressionistic descriptions address all the factors

simultaneously. It is furthermore still debatable as to which of these factors, or combinations of them, are really perceptually relevant in the communication process.

Apart from these language specific observations regarding the Nguni languages it has to be recognized that the generally held view concerning "rising intonation" in questions is not without any queries. Geluykens (1988:468), for instance, is of the opinion that

Perhaps a much more likely universal of rising intonation is its signalling of "non- finality" in the turn taking system in conversation ...

Another interesting contradiction to these theories is raised and exemplified by Geluykens when he states that

Rising intonation is irrelevant for the recognition of a declarative utterance as a queclarative, provided pragmatic factors contribute to the utterances question-status. If pragmatic cues fail to make the utterance question-prone, rising intonation may, but need not, be used to turn such an utterance into a queclarative (1987:492).

and

The most striking outcome of our analysis is the very low frequency of rising tones in Queclaratives ... Falling tones are far more frequent; in the majority of cases these are preceded by a "high booster" ..., i.e. a step-up in the pitch in the Head of the TU (1988:468).

Fries (1964) claims that in his study of 2 561 yes-no questions in English, 1 580 had a falling intonation pattern, and only 981 had a rising intonation pattern. In percentage terms therefore 61,7% had a falling intonation pattern and only 38,3% had a rising intonation pattern. He continues by stating

Unfortunately, so far as the evidence goes, the many assertions concerning the rising intonation of yes-no questions in English have not been based on any adequate body of quantitative information (1964:245).

The quantitative information derived from the corpus examined for this study does not support the much repeated assertion that yes-no questions "regularly", "usually", "characteristically" have a rising intonation pattern (1964:250).

In view of these remarks, consider now the following two pitch analyses (figure 1) of the utterance in (2)

- (2) (a) Yimifula. They are rivulets. (Declarative)
 (b) Yimifula? Are they rivulets? (Queclarative)

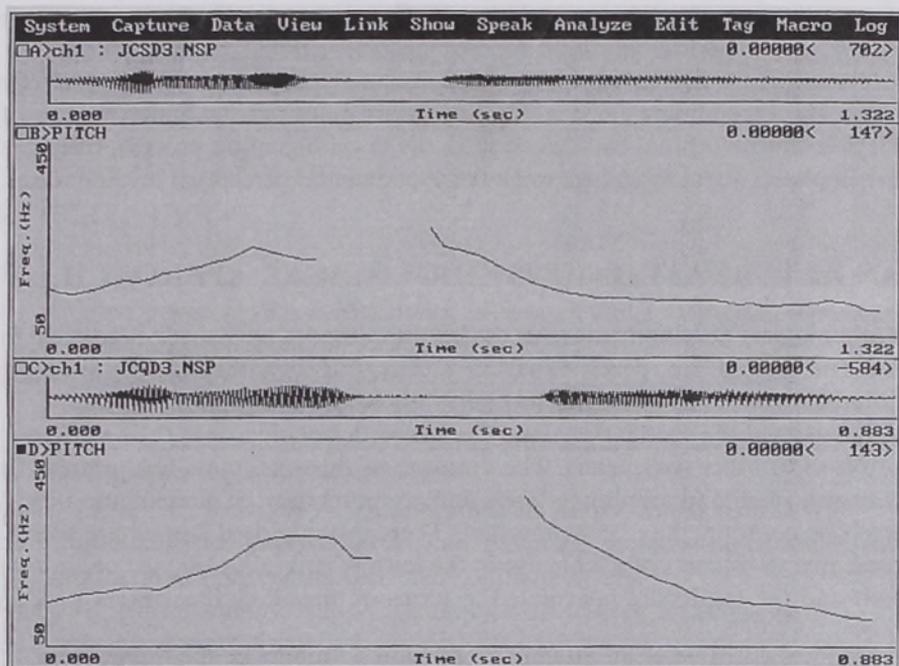


Figure 1: Panel A: Pressure wave of “yimifula” – declarative
 Panel B: Pitch contour of “yimifula” – declarative
 Panel C: Pressure wave of “yimifula” – queclarative
 Panel D: Pitch contour of “yimifula” – queclarative

From these examples it is quite apparent that apart from the fact that there is a clear difference in duration between the declarative (1,322 sec) and the queclarative (0,883 sec) there is little difference between, for instance, tonal register or overall shape of the pitch contour. A relatively sharp decline of the contour is present in the penultimate syllable (cf. panel D) of the queclarative; however, simultaneous downdrift also occurs in both renditions. This downdrift contradicts the widely held view of rising final tones in queclaratives. The fact that an expected acoustic difference may or may not manifest itself in these utterances lends support to the observation of Roux (1995b) that speakers may use different strategies in encoding an acoustic signal to convey a specific meaning.

A controversial issue, however, still remains to be addressed, the relationship between acoustic signals and perceptual cues. It is commonly known that no direct relationship exists between the acoustic signal and perceptual dimensions, and therefore it would be presumptuous to claim this in a language such as Xhosa. Although these acoustic analyses present a wealth of information, the limitations of this data presented in isolation are also perfectly clear. This type of data alone will not necessarily elucidate an understanding of the relevant perceptual cues involved in the disambiguation process, therefore the emphasis ought to change to one of experimental perceptual investigations.

AN ALTERNATIVE METHODOLOGICAL APPROACH

Technological developments over the last few decades have made it possible to edit and manipulate speech signals in a variety of ways through the use of different types of speech analysis and synthesis programmes. Different parameters of the speech signal may be edited in isolation or in their synergetic relations to other parameters. The duration of segments may, for instance, be changed, pitch and amplitude levels and contours may be altered, and new levels or contours may be synthesized. These resynthesized stimuli are then presented to listeners of a language in the form of carefully designed perception tests and the results are interpreted in terms of prevailing theories.

A classical example of an attempt to develop a "model of the listener" is exemplified in the work undertaken by the Institute for Perception Research (IPO) at Eindhoven in the Netherlands, which is reported in 't Hart, Collier & Cohen (1990). Experimental approaches to speech perception have been around for many years; however it is true to say that African languages have been neglected and have received very little attention.

Apart from the limited works of Roux (1982, 1995a, 1995b), Swart (forthcoming), Jones and Roux (1996) and Jones (forthcoming), little is known about the perceptual qualities of prosodic structures in the African languages spoken in South Africa. This type of knowledge has proven to be indispensable, not only for a better understanding of the human speech communication process, but also for attempts to model this process in the development of human-machine communication systems. These systems which are able to respond to speech input in a specific language, or which are able to generate good quality natural speech from texts are well developed for European languages (cf. Rabiner, 1995) and have numerous applications in everyday life. The need for these types of applications is bound to spread to the African continent sooner rather than later and this will certainly increase the necessity for obtaining quantitative prosodic data (cf. Roux, 1996).

The foundations laid by researchers such as Louw in his phonetic and phonological studies of tone in the languages of Southern Africa, and more particularly Xhosa, need to be acknowledged and developed using more experimental and all-encompassing approaches. This would simply imply that the value of such research be retained, yet the approach to further research in this field become more dynamic in understanding the nature of speech communication in the languages of this region.

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