New data for ‘A-raising’ in !Xoon

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!Xoon

!Xoon or Taa is a Tuu Khoisan language with many clicks. One interesting phenonemon is the variation of first-mora /a/ quality by the second-mora vowel, place of the initial click, and click accompaniment; this has been used to argue for novel phonology [2], gang effects [5], and in the last OCP, lack of gang effects [3]. The phenomenon is called ‘A-raising’ after [8]. Analysis is bedevilled by very limited data; this presentation reports on results from new audio data.

Basic !Xoon phonology

Word-initial consonants include:

- clicks at five places ʘ, ǀ, !, ǁ, ǂ
- in 23 ‘manners’ ǂ, gǂ ǂʼ, gǂʼ ǂh, gǂh nǂ, nhǂ, ʼnǂ
  (g)ǂq (g)ǂqʼ (g)ǂqh [ǂq^{h}] (g)ǂqxʼ [ǂq$^{\chi}$ʼ] (g)ǂx [ǂχ]
  (g)ǂhh [ǂh] (g)ǂʼʼ [ǂʔ]
- many pulmonic consonants

Most content lexemes are $C_1V_1(C_2)V_2$. C_1 is an initial consonant. C_2 is weak: b [b/v], w, r/l, y [j], ny [ɲ]. V_1 can have several voice qualities.
V_2 is a, e, i, o, u, and may be nasalized an.

What about V_1?

V_1 ranges over (and between) a, e, i, o, u, partially driven by V_2.

- traditional description: it’s a, o and undergoes assimilation to V_2 and other segments
- currently favoured description: it’s underspecified A, O and fills in features from V_2 and other segments

‘A-raising’

is the traditional [8] name for its behaviour, described as
a assimilates in height to V_2

- fully, when C_1 has a ‘front’ click ǀ,ǂ *and* C_1 is not a complex with q, x *and* C_2 is empty;
- partly, when C_1 is a front click and C_2 is palatal or dental

Many analyses

- [8] underlying a with *SPE*-style rules.
- [6] underlying i, e, with *lowering*.
- [7] opted for underspecified underlying V_1.
- [2] SPE plus ‘concurrent phonemes’.
- [5] gradient subfeatural phonology.
- [3] element-theory.

All this on the basis of few transcribed data – single forms for some bits of argument.

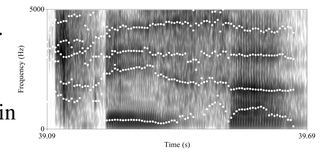
Lots of new data!

[4] is six hours of high quality recordings of carefully spoken Bible translation in West !Xoon, by men and women of unknown ages. We have analysed 25% of the data by auditory impression and acoustic formant (Praat, [1]) measurement.
So what’s going on in current !Xoon? It’s messy …
To summarize, we’ll use [ɐ–ɜ–ɔ–ɔ] to indicate degrees of raising or [æ–ɛ–e] when especially fronted.

V_1 after ‘back’ clicks ʘ, !, ǁ

[8] actually claims some raising to [æ] in CV_1i.
We find:

- no raising in most such contexts; but
- speaker-variable raising to [ɔ], [e] or even [i] in ǁʼai, ǁhhai, ǁqhai

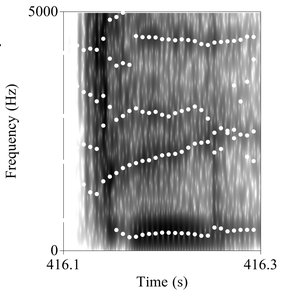


F3 ǁʼai-sa [ǁiisa]

V_1 after ‘front’ clicks ǀ, ǂ

Supposed to be full raising, or part after uvular complexes or with non-high C_2 present. We find:

- inter- and intra-speaker variable raising ([ɔ, ɜ, i] in non-uvular contexts for -ai, *but*
- full raising is only in ǂʼai only in some speakers
- mostly part raising ([æ] to [ɛ])in -aC_2i
- part raising ([ə]) in uvular -ai contexts



F1 ǀhai [ǀ^{h}əi]

Long accompaniments

- The clicks with hh, ʼʼ [h, ʔ] account for most of the expected full raising tokens, and also show some raising in ‘back’ contacts where the standard account expects none.
- The [h, ʔ] in these sounds is long (100–200 ms), so it is plausible that they simply block any effect C_1 has, resulting in simple ai → [ii] (or Ai → [ii]).
- Equally long uvular x [χ] accompaniment does block raising.

A-raising??

- So far, not a single example of simple classic full raising such as ǀai to [|ii] – only after long accompaniments.
- There are examples of, e.g., ǂae → [ǂee]
- Four more hours to analyse, but …
- It looks much more variable and gradient than described in [8].
- Could this be (a) dialect difference ([8] is eastern dialect, ours is western)?
- Could it be language change? (Ca. 2000–3000 speakers now)
- Or could it be that Traill over-generalized from limited data?

Phonology and/or phonetics?

- There seems to be a lot of gradience
- but also some categorical change.
- What is an underspecified A anyway?
- And what is its realization?
- Can [5] be adjusted to account for this data rather than Traill’s?
- And can element theory do it?

To do …

- rest of data
- more numerical analysis

References

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