

Gliding into a smaller inventory

A reanalysis of diphthongs in Bernese German

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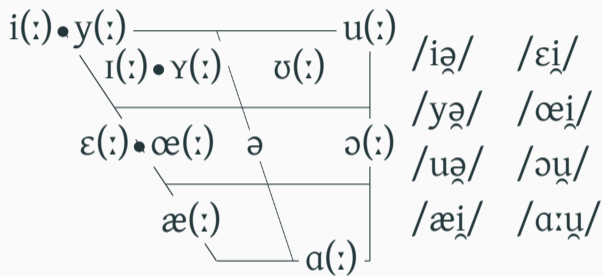
- High Alemannic variety in the German dialect continuum
- spoken mainly in the canton of Bern, Switzerland
- discussed here: Mittelland & Seeland
- one grammatical description (Marti 1985)
- not very consistent w/r/t phonology
- main question here: how many diphthong phonemes are there?

Bernese consonant inventory

	bilabial	labiod.	alv.	postalv.	velar	glottal
plosive	p ɸ (p: p)*		t ɖ (t: t)*		k ɡ (k: k)*	
affricate	ɸf		ts	tʃ	kx	
fricative		f f: * ʋ	s s:	ʃ ʃ: *	x x: *	h
nasal	m m:		n n:		ŋ:	
lat. appr.			l l:			
rhotic			r			
glide			j			

(Marti 1985:42, *added)

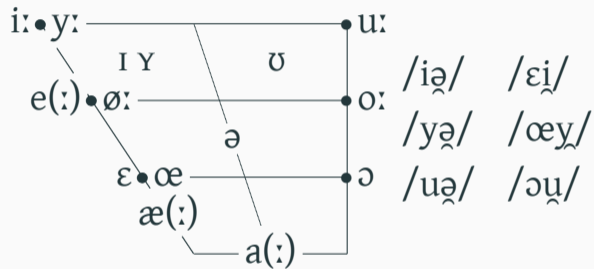
Bernese vowel inventory



(Standard German $/a\underset{\sim}{I}/$, $/\underset{\sim}{\text{ɔ}}y/$, $/a\underset{\sim}{u}/$)

(Marti 1985:39–40)

MHG vowels



(Hermann 1998:47)

Development of MHG diphthongs

MHG		Bernese
/iə/	→	/iə/
/yə/	→	/yə/
/uə/	→	/uə/
/ɛi/	→	/ɛi/
/œy/	→	/œi/
/ɔʏ/	→	/ɔʏ/
?	→	/æi/
?	→	/a:ʏ/

- /æi/ very marginal; only in /æ̣ịs/ 'DEM' (≠ 'one')
- Staub's law: $Vn \rightarrow V:, V\check{V} / _ \left[\begin{array}{l} +\text{cons} \\ +\text{cont} \\ -\text{son} \end{array} \right]$ (Werlen 1977)
- /ɛn(ə)s/ → /æ̣ịs/ (Staub & Tobler 1885-)
- also found in Standard German loanwords like /'ʃaɪsə/ → /'ʃæ̣ịs:ɛ/ 'shit'

- /pla:u/ 'blue', /kra:u/ 'grau', /kɛna:u/ 'genau', /pfa:u/ 'peacock', /ʃla:u/ 'smart'...
- from MHG /a:/ and /w/:
- MHG /bla:/, /bla:wəs/ 'blue', 'blue.N.INDF' (Hermann 1998:144)

More diphthongs!

- explained as non-phonemic by Marti (1985:31) because:
 - combinations of vowel + glide
 - umlauted versions of phonemic diphthongs
 - shortened/lengthened versions of phonemic diphthongs

More diphthongs!

- /æ:ɪ/ as in /t:ræ:ɪə/ 'turn', /kæ:ɪ/ 'steep'
- /œ:ɪ/ as in /ʃlœ:ɪər/ 'smarter', /plœ:ɪələ/ 'bruise'
- /ɑʊ/ as in /rɑʊft/ 'bread crust', /saʊft/ 'well'
- marginal:
 - /uɪ/ in /pʰuɪ/ 'ew!'
 - /ɔɪ/ in /hɔɪ/ 'hi!'
 - /ɑ:ɪ/ as in /lɑ:ɪ(i)/ '(s/he) let (IRR)' (Marti 1985)
 - /ɛ:ɪ/ /ksɛ:ɪə/, /ksɛ:ɪi/ '(s/he) see (IRR)' (Marti 1985)

Origin of additional diphthongs

- Staub's law: /ranft/ → /raʏft/
- hiatus resolution with epenthetic /j/: OHG *sa:en → /sæ:jə/ 'sow'¹
- deletion of intervocalic /h/: OHG *ga:hi → /kæ:j/ 'steep'
- (half-)umlauted versions of other diphthongs: /pla:ʏ/ 'blue' → /plœ:jələ/ 'bruise', /raʏft/ → /ræʏft/
- all not allophonic!

¹also found in other Germanic languages; PG *se:anǣ → Gothic *saian*, Old Saxon *sa:ian* (Kroonen 2012:428).

- /myəi/ 'struggle', /plyəiə/ 'bloom', /t:ryəiə/ 'gain weight'
- /myəi/ from non-syllabic version of feminine *-i*, compare /lɑŋ/ 'long', /lɛŋ:i/ 'length' (Marti 1985:30–31)
- but others from same hiatus resolution process as in **sa:ən* → /sæ:iə/

Di- and Triphthongs

iə	ɛi	æ:i	ɔi
yə	œi	œ:i	a:i
uə	ɔu	au	æu
æi	a:u	ui	yəi
ɛ:i	ɛ:u		

bold: phonemic in Marti (1985)

Di- and Triphthongs

iə	ɛi	æ:i	ɔi
yə	œi	œ:i	a:i
uə	ɔu	aʊ	æʊ
æi	a:u	ui	yəi
ɛ:i	ɛ:u		

bold: phonemic in Marti (1985)

- started in the late 1700s, spreading from rural Emmental (Baumgartner 1940:74)
- /l/ became [w] ([ɥ]) oder [ʊ] in certain positions, via [lʲ] (Haas 1983:1113)
- fairly widespread today (Leemann, Kolly, et al. 2014), not seen as a feature of Bernese (Christen 2001)

Affected contexts

context	not vocalized	vocalized
ə_# _σ	['fɔkəl]	['fɔku] 'bird'
_# _σ	[ʃnæɪ·]	[ʃnæw·] 'fast'
_# _σ _	['xæɪ:ər]	['xæw:ər] 'cellar'

is [w] from /l/ phonemic?

- original distribution clearly allophonically conditioned, but:
 - not all geminates are vocalized; it's usually ['vɑ:l:is] 'Valais' and ['vɪl:ɑ] 'villa', not ['vɑw:is] und ['vɪw:ɑ]
 - not all singletons, either: usually [ital'jæənər] statt [itaw'jæənər] 'Italian'
 - no [w] after closing diphthongs: /phɔ̥ʊl/ 'Paul', /ʃtɛ̥i̯l/ 'steep'; *[ʃtɛ̥i̯w] – but [tɛ:̥ʊ] from earlier /tɛ̥i̯l/ 'part'
 - after /u:/ we either find Ø, /mu:/ from /mu:l/ 'mouth', or /l/: /ʃvu:l/ 'gay', /kxu:l/ 'cool'
- all marginal cases, but: no synchronic automatic alternation

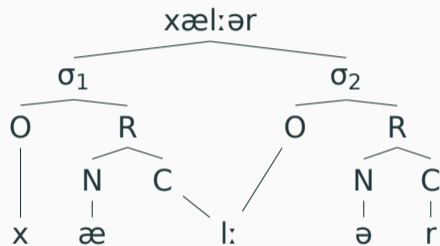
Di- and Triphthongs, updated

iə	ɛj	æ:j	ɔj
yə	œj	œ:j	a:j
uə	ɔu	au	æu
æj	a:u	uj	yəj
ɛ:j	ɛ:u	ɔ:u	ʊu
æ:u	ɛu	œu	œ:a:u
ɪu	ɪ:u	ʏu	iu
iəu	yəu	uəu	

/l/-vocalization in geminates

- word-medial geminates are usually described as ambisyllabic, coda position of σ_1 and onset of σ_2 (Hayes 1989)
- this explains why /l/-vocalization applied to geminates ([ˈxæɪl:əɾ] → [ˈxæw:əɾ] ‘cellar’)
- vocalization in coda (rhime) position

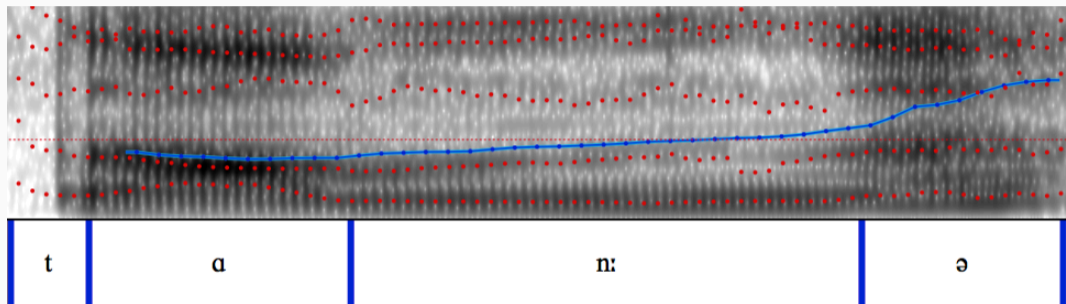
Syllable structure of ['xæ:l:ər]/['xæw:ər]



Homophony of /ɔ̥/ and earlier /ɔl/

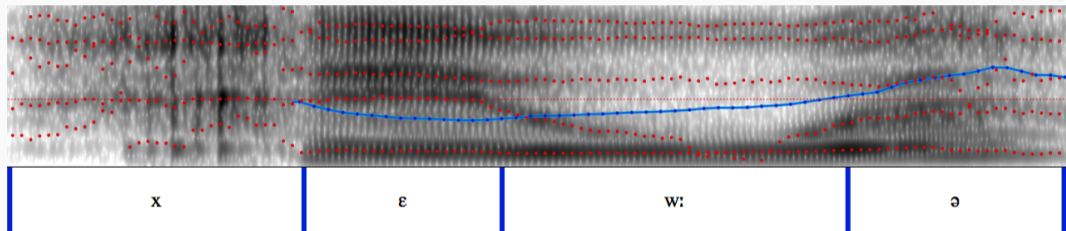
- /ɔ/ + vocalized /l/ are homophonous with Diphthong /ɔ̥/ inherited from MHG
- intervocalically: ['p:ɔw:ə] 'built; pollen'
- important: second part of diphthong /ɔ̥/ is long before vowels, like vocalized earlier /l:/
- ...true for all closing diphthongs!

Comparison with geminate consonants

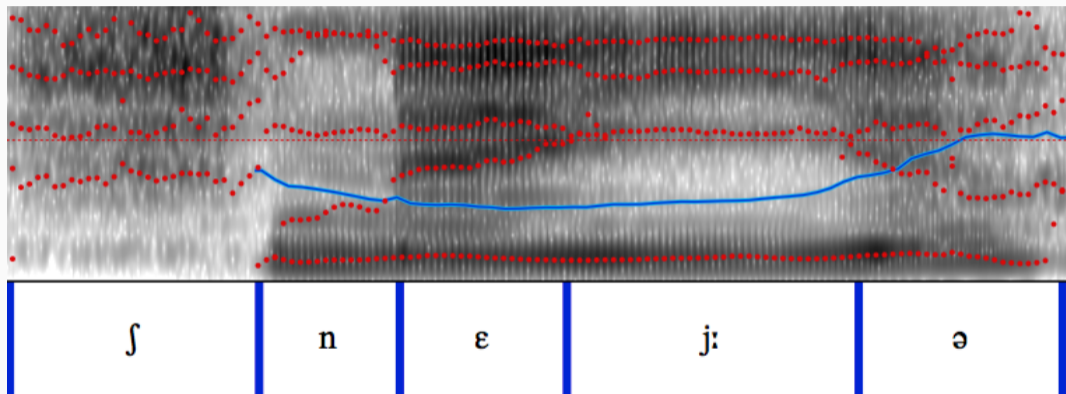


data from Leemann & Kolly (2014)

Comparison with geminate consonants



Comparison with geminate consonants



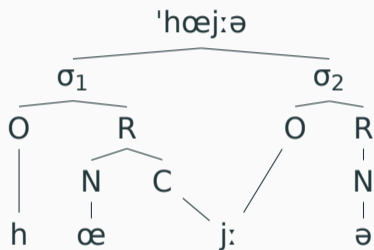
Comparison with geminate consonants

- all between 215 und 240 ms long
- considerably longer than surrounding (syllabic) vowels
- bigger phonetic study on relative duration to be done

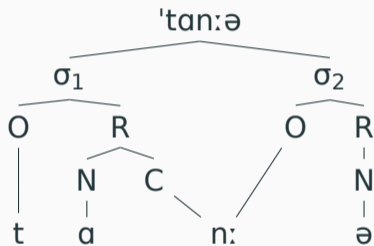
Analysis as glides

- large inventory of diphthongs, closing diphthongs all with [ɨ] or [ʉ]
- non-syllabic parts behave like geminate consonants
- analysis of closing diphthongs as /V/ + /j/ or /w/:
 - more economical than proposing ~30 diphthong phonemes
 - explains merger of inherited /ɔʉ/ and earlier /ɔl/
 - no marginal (diphthong) phonemes
 - captures behavior of /j/ and /w/ & their shared properties with other geminates
 - also explains triphthong /yɛj/ as combination of diphthong + glide
 - explains /ʃtɛj/ but not *[ʃtɛjw]: no more than one glide in coda

Syllable structure of /'hœj:ə/ 'make hay'



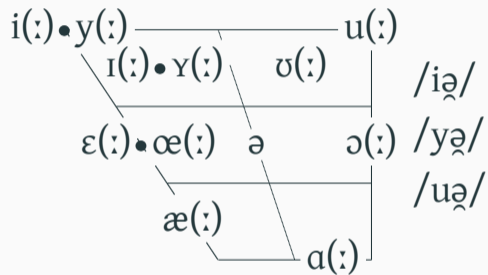
Comparison: syllable structure of /'tɑ:nə/ 'fir'



Bernese consonant inventory, updated





	bilabial	labiodental	alveolar	postalveolar	velar	glottal
plosive	p p:		t t:		k k:	
affricate	pf		ts	tʃ	kx	
fricative		f f: v	s s:	ʃ ʃ:	x x:	h
nasal	m m:		n n:		ŋ:	
lat. appr. rhotic			l l: r			
glide	w:		j:			

Bernese vowel inventory, updated



- geminates generally rare
- if geminates, then glides often exempt (Maddieson 2008)
- Bernese **only** has geminated glides in 'V_V position under my analysis




References

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Abbreviations

DEM	demonstrative
INDF	indefinite
IRR	irrealis
MHG	Middle High German
N	neuter
OHG	Old High German
PG	Proto-Germanic