

**PHARYNGEALS AND “LAX” VOWEL QUALITY**  
 (Supplementary handout)

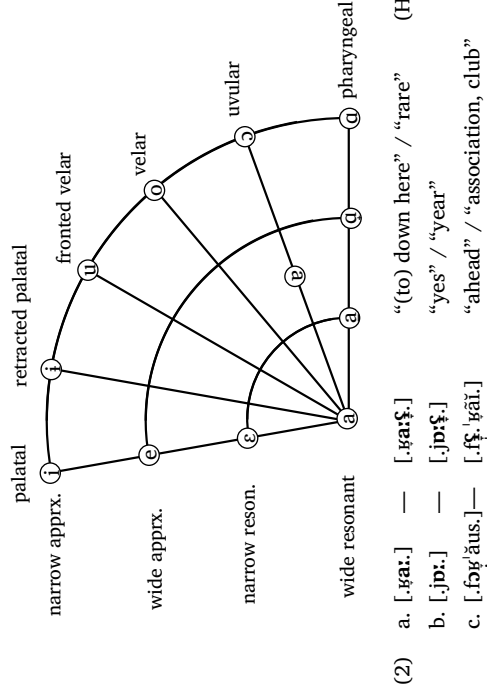
**[A] Background (i): “Lax” in West Germanic languages**

- Two ways in which centralisation might be attributed to short duration alone:
  - Statistical artifact: The shorter the duration of a vowel, the larger its portion affected by coarticulation, the greater its variability at midpoint. But tokens outside vowel space have to be discarded. As a consequence, the statistical mean comes out centralised.
  - Conversely, articulation may proactively choose a centralised target to make sure the result can be recognised as a vowel, in some language or other.

**[B] Background (ii): Pharyngeals in Central Swabian**

- Possibility 1:** Elsewhere other than in onset, /ɣ/ is retracted to avoid vowel space (1). **Possibility 2:** /ɣ/ really involves a double articulation (McCarthy 1994), one dorsal gesture, one pharyngeal — perhaps variably timed (cf. Sproat and Fujimura 1993 on English “dark l”) or unevenly reduced (cf. vocalised /t/).

- (1) [e] is a uvular approximant/resonant (polar vowel chart after Catford 1977: 184–187; Trask 1996: 282 f.):



**[C] Background (iii): The (general) vowel system of Swabian**

	Central Swabian	Regional Near-Standard Gm.
Phonemic long vowels:	/iː eː aː ɔː oː uː/	/iː eː yː øː aː oː uː/
Phonemic short vowels:	/i e ε a o u/	/i e ε y ø a o u/
Nonmoraic (?) vowels:	/e ə/	/e (ə) /
Closing diphthongs V <sup>v</sup> :	/aʊ dʏ äɪ/	/aʊ dʏ äɪ/
Closing diphthongs V <sup>v</sup> :	/äʊ äi/	/äʊ dʏ äi/
Other diphthongs:	/iə εə uə ui/	—

(NB: Nasalisation is surface-distinctive (cf. French), but not in the reg. near-standd.; many nasalised V change oral quality and neutralise certain distinctions<sup>1</sup>.)

**[C.1] Comparison to the Standard German norm<sup>2</sup>**

- Note additional short /e/ ≠ /ɛ/ distinction
 

	Swab. (and Swab. near-std.)	Standard pron.
(3) a.	[fɛʃt] ≠ [fɛʃt]	[fɛst] (both) “fast” / “feast”
b.	[ʃtɛl(e)] ≠ [ʃtɛl(e)]	[ʃtɛlə] (both) “place” / “stables”
- Typically, Swabian (also near-standard) long corresponds to Standard German tense without causing misunderstandings ...
 

(4) a.	[ˈviːsə] — [ˈviːsə]	[ˈviːzən] — [ˈviːzən]	“meadows” / “knowledge”
b.	[ˈʃtiː] — [ˈʃtiː]	[ˈʃtiː] — [ˈʃtiː]	“stem” / “silent”
c.	[ˈpɛt] — [ˈpɛt]	[ˈbɛt] — [ˈbɛt]	“flowerbed” / “bed”
d.	[ˈsoːlə] — [ˈsoːlə]	[ˈzoːlən] — [ˈzoːlən]	“soles” / “be supp.to”
e.	[ˈkʰoːmaː] — [ˈkʰoːmaː]	[ˈkʰoːma] — [ˈkʰoːma]	“coma” / “comma”
- ... but there exist sources of systematic mismatches (e.g. “iambic” shortening).
 

(5) a.	[ˈtʰotoː] ≙ [ˈtotoː]	[ˈtʰotʰo] ≠ [ˈtʰotʰo]	“(football) bet” / “national lottery”
b.	[ˈʎiːliːaː] ≙ [ˈʎiːliːaː]	[ˈʎiːliːa] ≠ [ˈʎiːliːa]	“purple” / “villa”

<sup>1</sup> Regional colloquial speech generally doesn’t pronounce nasalisation in vowels but nonetheless changes their oral quality the same way (i.e. as though they were nasalised) — so, allophones become surface distinctive: [ˌtsɛə.] “ten” > [ˌtsɛə̃.] not \* [ˌtsiə̃.] etc.

<sup>2</sup> As far as relevant here, prescription agrees with varieties empirically found in Northern Germany.

[D] **Observation here: “Lax” vowels in Swabian**

- Sketch of OT analysis:

(6) a.	[vɔʁə] p	[vɔʁə] p	[vɔʁə] pp	[vɔʁə]	Id(C-phar)	*PHAR	CLOSED⇒“LAX” & SHORT⇒“LAX”	Id <sub>-...+</sub> (V-phar)
						*	*!	
						*		*
						**!		*
					*!			

b.	[solə] p	[solə] p	[solə] p	Id(C-phar)	*PHAR	CLOSED⇒“LAX” & SHORT⇒“LAX”	Id <sub>-...+</sub> (V-phar)
						*	
					*!		*

c.	[toʁo:] p	[toʁo:] p	[toʁo:] p	Id(C-phar)	*PHAR	CLOSED⇒“LAX” & SHORT⇒“LAX”	Id <sub>-...+</sub> (V-phar)
					*		
					*		*!

- Exceptional ambisyllabicity -VCV- (7)a between full vowels leads to surface minimal pairs with the regular case -V.CV- (7)b, so does exceptional absence of “iambic” shortening (7)c, ...

(7) a.	[ˈtsʁo:]	(PN) <Zorro>	[ˈku.ʁu:]	“guru”
b.	[ˈto.ʁo:]	(PN) <Doro(thea)>	[ˈ(?)u.ʁi:]	“(Swiss canton)” <Urr>
c.	[ˈto.ʁa:]	(PN) <Dora>		

- ... near minimal pairs (8) of (7)b also with mandatory ambisyllabicity -VCə-, never \*-V.Cə-, preceding schwa.

- (8) [ˈkuʁə] “coo (pigeon) (INF)”

(NB: The lax allophone of /o/ is less open than<sup>3</sup> /ɔ:/ (9).)

- (9) [ˈtʁʰʰʰ.ʰʰ]— [ˈvɔʁʰʰʰ.ʰʰ] “ahead” / “why”

- More near-minimal pairs like in (7) arise with shortening of pretonic vowels<sup>4,5</sup> (10). In (10)b, [ʊ o] are somewhat similar (esp. in F1:F2 space), yet are distinct (*contra* Frey 1975).

- (10) a. [ˈhɔʁʰʰʰ.ʰʰ]— [ˈ.ʃpɔ. ʁa:.tʰ.ʰ] “horrendously”/“sporadically” (Hiller 1995)  
 b. [ˈhɔʁʰʰʰ.ʰʰ]— [ˈho. ʁa:ts.] “hooray” / (PN) <Horaz>

[E] **Relevance**

- Related previous work:

- (11) a.

	Language	Source	Discipline
Shahin (1997)	Arabic	experim. study	instr. phonetics
Bessel/Czaykowska-Higgins (1991)	Coeur d’Alene Salish	fieldwork	descriptive
McCarthy (1994)	Asturian Spanish	literature	theor.phonology
Oostendorp (1995a,b)	E Javanese, etc.	literature	theor.phonology
here:	Swabian German	introspect. (so far)	p.gy-p.cs interf.

b.	(i)	(ii)	(iii)	(iv)	(v)	Term used
Shahin (1997)	+	+	+	-	-	pharyngealisation
Bessel/Czaykowska-Higgins (1991)	-	+	+	-	-	lowering
McCarthy (1994)	(+)	-	+	+	-	lax
Oostendorp (1995a,b)	+	-	+	+	+	lax = [ - ATR]
here:	+	+	-	+	+	lax = [ - ATR]

- (i) “lax” in closed syll.; (ii) near pharyngeal G; (iii) harmonises; (iv) “lax”; (v) -ATR

<sup>3</sup> Some regional sub-varieties of Central Swabian do have a more closed /ɔ:/ instead of /ɔɪ/, so the vowels highlighted in (9) do merge — probably with repercussions elsewhere in the phonology: E.g. nasalized /ɔɪ/ is raised to [ɔɪ] (cf. other lower mid V), hence the popular [õʝ ɔɪ] “one egg” shibboleth.

<sup>4</sup> Typically, but not invariably (F1:F2) <ll>, <ll> / <ll>, reflected in orthography.

<sup>5</sup> Note that before other consonants, no difference in quality results (<ll> / <ll>, much unlike has been claimed for standard German and so, precise syllabification cannot be determined.

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# Pharyngeals and “Lax” Vowel Quality

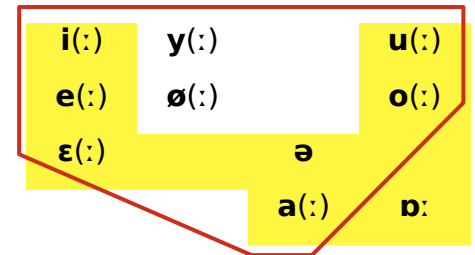
Markus Hiller

## Summary

The present paper reviews grammatical evidence from a surface-level **phonological** regularity, in which a property in vowels **established as [–tense]** in Standard German is additionally required to **be licensed by a pharyngeal** consonant. Hence, “[±tense]” = [±ATR].

## Swabian

- Branch of **West Upper German**
- Discussion here also of regional near-standard variety (“Schriftdeutsch”) or “Swabian-coloured Standard German” (SwCSG).
- Urban speakers use Sw as colloq., SwCSG as formal register (diglossia).



**Tbl.1** Monophthongs of Swabian (shaded) and of SwCSG (outline).

## Background (i): “Lax” in W Germanic Lgs.

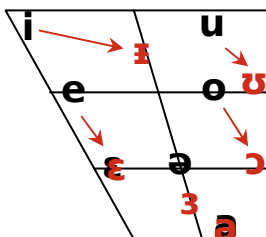
- 2 opposed sets of vowels, here: “tense” vs. “lax”.
- “Lax” correlated with closed syllables; also with short duration.
- Independent characteristic: slightly more open (F1 raised).

## Research question:

- **What defines “tense” v. “lax”?**

## State of the art:

- Provisionally: “lax” = centralised (caveat: short dur. & syll. cut), → Lindau (1979): [±peripheral]
- More provisionally: that diagnosis interpreted as diminished effort (caveat: TB in En. /kuk/vs./køk/?) → Jakobson/Halle(1963): [±tense]



**Fig.2** Sw short V before [ɕ] (red)

## Background (ii): Pharyngeals in Central Sw

- Same in SwCSG
- \*r > /ʁ/, like most of Gm.
- But allophones: [ɕ] when not in onset — prob. to avoid V space.
- Note final devoiced allophones [ɕ̥ ɨ̥] (obsolescent).
- Shared feature of [ɕ ɕ̥] is **[pharyngeal]** (McCarthy 1994).
- Note: surface min. pairs with alternate syllabifications of clitics /mɕ n/ “me him” [mɕn̩]~[mɕ̥n̩]~...

## Overview:

### “Lax” vowels in Swabian

- In fact, Vs in Sw/SwCSG **have** systematically “lax” qualities (fig. 2) in one kind of environment:
- 3 conditions must be met **simultaneously**:
  - [1] Syllable must be closed.
  - [2] Vowel must be short.
  - [3] A [phar] cons. right adjacent.
- [1]+[2] and esp. comparison of Std.Gm. attest to [–tense].
- [3] is evidently licensing — by a [phar] C, ⇒V becomes [–ATR].

## Background (iii): Vowel system of Swabian

- Sw and SwCSG share much of their vowel system (tbl. 1).
- Note: SwCSG makes more distinctions than the prescriptive std. Relevant here esp.: /e/≠/ɛ/.
- In both Sw/SwCSG, V quantity is distinctive and **is not accomp. by opposition in tenseness**.
- Most typically, Sw/SwCSG **long** translates to N Std. Gm. **tense**, but systematic exceptions.

## Conclusion:

- “[±tense]” really is [±ATR]

## Data/methods:

- Ambisyllabicity regular before /ə/, exceptionally occurs bef. other V. Leads to **surface min. pairs**.
- Proves that tense/lax opposition in these data is **categorical**.
- “Same”/“diff.” jjmts. by native speakers can be used (e.g. as published by Hiller 1995).

## Further research needed:

- Testing: articulation imaging, sufficient acoustical data, ...