Phonological marking of morphological boundaries vs. phonetic syllabification in Swedish

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(1) *Selected properties of proto-typical word and syllable languages* (drawing basically on Auer 2001, 1395-1398; also, e.g., Auer & Uhmann 1988, 253, Nübling et al. 2006, 21, Szczepaniak 2007, 52f.)

	Typological parameter	*Word language (WL)*	*Syllable language (SL)*
1	Nature and domain of accentuation	Phonetically strong accent. Culminative dynamic or musical accent on the phonological word	Phonetically weak accent. Typically initial or final accent in the phonological phrase
2	Use of pitch in words	Musical accent with culminative function (cf. 1)	Tone possible in every syllable
3	Uniformity of consonant clustering in different positions in the word	Phonotactic rules differ according to location within the word. (Accented and word-margin sequences exhibit more complex edges.)	Phonotactic rules are the same for all positions in the word. (Tendency towards CV-sequences in all word positions.)
4	Geminate consonants vs. ambisyllabicity	Ambisyllabic consonants allowed (but no geminates)	Geminates possible (but no ambisyllabic consonants)
5	Morpheme constancy	Constancy expected in a word language, which gives prominence to the word	
6	Uniformity of sandhi rules across different kinds of grammatical boundaries	Word-internal (inner) sandhi ≠ word-external (outer) sandhi	Word-external sandhi = word-internal sandhi
7	Vowel inventory in unaccented syllables	If culminative accent, (a) vowel phoneme inventories reduced (e.g., no long unaccented vowels), (b) vowels centralized, and (c) schwa-type vowel	No accent-dependent phonemic or phonetic reduction (long vowel phonemes possible and little centralization)
8	Vowel~zero alternations (a) Vowel and consonant epenthesis (b) Vowel deletions	 Produce complex accented or word-edge syllables	 Gets rid of complex syllable edges or fill hiatus Optimize CV-structure
9	Word-related phonological processes (accent-independent)	Word-initial aspiration of voiceless stops. Glottal stop insertion before word-initial vowel. Etc.	
10	Syllable-related phonological processes		Resyllabification across morphological and syntactic boundaries

Stress

(2) brädgård [ˣbrɛ:dˌgo:ɖ] ‘timber-yard, lumberyard’
la(du)gård [ˈlɑ:ˌgo:ɖ], [ˈlag:ɔɖ] ‘cow-house, barn’

Tonal accent (traditionally called ‘accent 2’ or ‘grave accent’)

(3) (a) *No tonal accent*

bind	/bind/	[ˈbind]	‘bind!’

(b) *No tonal accent*

förbind!	/før+bind/	[fœ̞rˈbind]	‘combine!’
binderi	/bind+er+i/	[bindəˈri:]	‘(book)bindery’

(c) *Tonal accent*

binda	/bind+a/	[ˣbinda]	‘bind’
bindande	/bind+ande/	[ˣbindandə]	‘binding’ (pres. part.)
bindel	/bind+el/	[ˣbindəl]	‘bandage; armlet’
bindlar	/bind+el+ar/	[ˣbindlar]	‘bandages’
bindsle	/bind+sel+e/	[ˣbindslə]	‘fastening’
bindning	/bind+niŋ/	[ˣbindniŋ]	‘binding’ (n.)
bindare	/bind+ar+e/	[ˣbindarə]	‘header’ (building)
bindväv	/bind+vɛv/	[ˣbindˌvɛ:v]	‘connective tissue’ (anat.)

(4) (a) In the standard language, tonal accent never appears in monosyllabic words.
(b) Normally, non-compound words with anacrusis receive no tonal accent.
(c) In non-compound words with a left-most stressed syllable, tonal accent is triggered by a specially defined vowel in another morpheme within the same word:

←
bind+a primary-stressed root morpheme + tone-triggering suffix

(d) Compound words usually have tonal accent:

←
bind+väv primary-stressed + secondary-stressed root morpheme

(5) *Compounds involving first member with anacrusis*
(Boxes indicate stressed syllables, superscript lines domain of tone.)

σσ□σσσ	fiskerinäring	‘fishing industry’
σσ□σσσσ	existensminimum	‘subsistence level’
σ(σ)σ□σσσσ	experimentstadium	‘experimental stage’
σ(σ)σ□σσσσ	temperaturmaximum	‘temperature peak’
σσσ□σσσ	universalmedel	‘panacea’
σσσ□σσσσ	kondoleansskrivelse	‘[official] letter of condolence’
σσσσ□σσσσ	kommunikationsmedier	‘communication media’

(6) Tonal accent joins stressed syllabics in a word, but does not in the first place indicate word edges. It primarily serves a *connective* rather than demarcative (delimitative), function.

Consonant clustering in different positions in the word

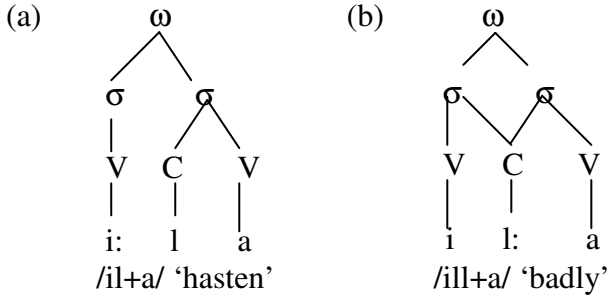
(7) *Canonical forms of native or nativized root morphemes* (Eliasson 2009, 59, 84)

$C_0^3VC_0^{2(3)}$	monosyllabic group predominant
$C_0^3VC_1^{2(3)}$v̆L	a fairly large group ending in unstressed *-ĕl*, *-ĕr*, *-ĕn* (sometimes certain other vowels)

(8) The consonant clustering tendencies in different positions of the word correlate with the morpheme types (root morphemes vs. affixes) that can appear in these word positions. Root morphemes in Swedish tend to be more complex than affixes.

Geminate consonants and ambisyllabicity

(9)



(10) Phonetically ambisyllabic consonants are underlying geminates (sequences of two identical consonant phonemes).

Phonetically varying morpheme shapes

(11) *Long vs. short vowel allophones*

(a)	led	ledde	‘lead’	‘led’	(a fair number of cases)
(b)	grad	gradera	‘degree’	‘grade’	(a multitude of cases)

Word-external vs. word-internal sandhi

(12) *Supradentalization* (simple cases)

/r#t/	kör till stan!	‘drive downtown!’	[rt] ~ [ʈ]
/r#d/	kör dit! / kör där!	‘drive there!’	[rd] ~ [ɖ]
/r#s/	kör sakta!	‘drive slowly!’	[rs] ~ [ʂ]
/r#n/	kör nu!	‘drive now!’	[rn] ~ [ɳ]
/r#l/	kör långsamt!	‘drive slowly!’	[rl] ~ [ɭ]

(13) *Recursive application* (↺ word-internal, ↺ sentence sandhi)

K ö r s å s n a r t s o m A n d e r s s ä g e r t i l l a t t v i f å r s t a r t a!
↺ ↺↺ ↺↺ ↺ ↺↺ ↺

‘Go as soon as Anders tells us that we may start!’

B ö r d u i n t e f ö r s t l e t a u n d e r s t o l a r n a ?
↺ ↺↺↺ ↺↺ ↺

‘Shouldn’t you first look under the chairs?’

(14) Aside from differing degrees of optionality, in supradentalization, word-external sandhi equals word-internal sandhi.

Vowel inventory in low- or unstressed syllables

(15) Vowel phonemes in different positions in simple (i.e., non-compound) words

Pre-stress	*Stressed position*	*Post-stress 1*	*Post-stress 2*	*Post-stress 3*
i	i	i	i	—
e (ɛ)	e ɛ	e (ɛ)	e (ɛ)	e (ɛ)
a	a	a	a	a
u (o)	o u	o u	(—) u	— —
y	y	y	—	—
ø	ø	—	—	—
~~ʉ~~	~~ʉ~~	~~ʉ~~	~~ʉ~~	—
1 (7)	9	5 (7)	4 (5)	2

l**i**njal	s**i**l	s**i**ll	kolli, gull**i**g	liderl**i**g	—
b**e**lägg	s**e**l s**ä**l	**e**ld s**ä**ll	gav**e**l, Kålle	gladar**e**	gulligar**e**
g**a**losch	s**a**l	**a**ll	gamm**a**l, kolla	grodorn**a**	baderskorn**a**
l**o**kal	s**å**r s**o**l	s**å**ll tom	hall**o**n, kollo kollo, grod**o**r	(—) baderskor	— —
l**y**rik	s**y**l	s**y**ll	band**y**	—	—
m**ö**blera	s**ö**l	h**ö**ll	—	—	—
m**u**sik	s**u**r	s**u**rr	hustr**u**	kängur**u**	—

Vowel deletions and insertions

(16) *Epenthetic schwa before post-consonantal, word-final* r, l *and* n (Wessén 1970, 65, 67)

Runic Sw	*Early OSw*	
*dagR	dagh**e**r	‘day’
*bökR	bök**e**r	‘books’
*fäþr	fäþ**e**r	‘fathers’
*stafR	stav**e**r	‘staff’
*brytr	bryt**e**r	‘breaks’
Early OSw	*Late OSw*	
axl	ax**e**l	‘shoulder’
fughl	fogh**e**l	‘bird’
sokn	sok**e**n, sock**e**n	‘parish’
vapn	vap**e**n	‘weapon’
ökn	öck**e**n (modern *öken*)	‘desert’

(17) *Syncope in Modern Swedish* (sg. and pl.)

ax**e**l	axlar	‘shoulder’
syst**e**r	systrar	‘sister’
bott**e**n	bottnar	‘bottom’

Word- vs. syllable-related phonological processes

(18) *Voiceless stop aspiration*

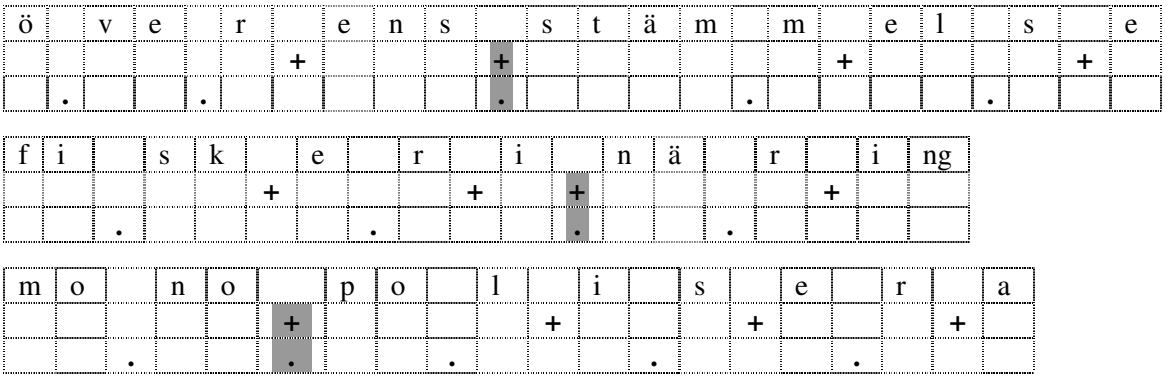
(a)	polis	[pʰuˈliːs]	‘police officer’
(b)	apropå	[apruˈpʰoː]	‘apropos of’
(c)	apologi	[apʰɔlɔˈgiː]	‘apology’

(19) *Glottal stop insertion* (hyper-articulations)

(a)	åtta, åtta och trettio	[ˣʔɔtːa ˣʔɔtːa ˈʔɔkː ˣtrɛtːiu]	‘8, 8 and 30’ (the Speaking Clock)
(b)	aorta	[ʔaˣʔɔʈːa]	‘aorta’

Syllabification

(20) *Discrepancies between morpheme and syllable boundaries*



Glosses: ‘agreement’, ‘fishing industry’, ‘monopolize’

(21) *Neutralization of contrast between different syllabifications*

Planen avvisas.	[ˣɑːv.ˌviːsas]	‘The plan is rejected.’ (*av* ‘of’, *visa* ‘show’, *-s* pass.)
Planen avisas.	[ˣɑːv.ˌiːsas]	‘The aircraft are being de-iced.’ (*isa* ‘ice’ vb.)
Neutralized form:	[ˣɑːˌviːsas]	‘is rejected’ / ‘is being de-iced’

(22) *Syllabification*

“Syllabic juncture tends to be ambiguous. … [T]he recognition of juncture plays a small role in the language as a system of communication. There are very few pairs in which the sequences are also grammatically identical. The grammatical context, then, in addition to the semantic context will make acoustical juncture cues fairly redundant. This makes it possible for a speaker to *disregard word- and morpheme-boundaries* when he speaks fast and *re-divide his speech into syllables conforming to the natural syllabification rules*, i.e., to his habits of coordinating articulatory movements.”

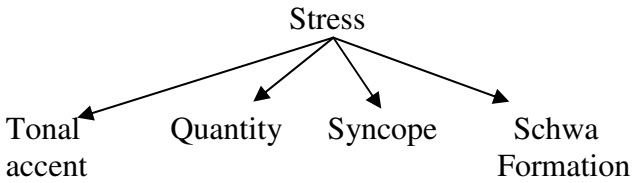
(Gårding 1967, 66; italics added)

Swedish as a word- or syllable language

(23) *Summary of some word- and syllable-language properties of Swedish*

	Phenomenon	*WL*	*SL*	*Remark*
1	Stress	+		Partly delimitative ('initial accent' in native vocabulary), more generally culminative or connective
2	Tonal accent ('accent 2')	+		Partly delimitative, more generally culminative
3	Phonotactic structure: Accented and word-margin sequences include complex edges	+		
4	Intervocalic consonants: Geminate vs. ambisyllabic	+	+	Swedish has ambisyllabic consonants phonetically, but geminates phonologically
5	Morpheme constancy (expected in a word language)	+	+	Usually, constant morpheme shapes in Swedish, but important sub-regularities exist involving allophonic alternations of long and short vowels in the same morpheme
6	External sandhi vs. internal sandhi (paramount sandhi rule in Swedish is supradentalization)		+	External ≈ internal: The high productivity of the rule makes this deviation from typical word-language characteristics stand out
7	Vowels in unstressed syllables (a) Vowel phoneme inventory (b) Vowel brevity (c) Vowel centralization (d) Schwa (special case of (c))	+ 		 Vowel-phoneme inventory reduced The absence of length in unstressed syllables follows, however, automatically from the fact that length is triggered by stress However, centralization takes place also in stressed syllables, when the vowel is short Schwa-vowel exists phonetically
8	Vowel~zero alternations (a) Historical vowel epenthesis (b) Synchronic vowel syncope	 +	 + 	 Change actually decreases rather than increases the word-language character of Swedish Creates more complex *morpheme* margins
9	Word- vs. syllable-related phono-logical processes: Aspiration and glottal stop insertion		+	
10	Syllabification	+	+	Syllabification in *fast* speech resembles to some extent that of syllable languages

(24) *Stress and stress-dependent synchronic phenomena*



(25) *Dominant canonical form of **native** root morphemes (favored morpheme templates):*

Swedish: $C_0^3VC_0^{2(3)}$ predominantly monosyllabic

$C_0^3VC_1^{2(3)}\breve{v}L$ a fairly large group of bisyllables in *-ĕl*, *-ĕr*, *-ĕn*

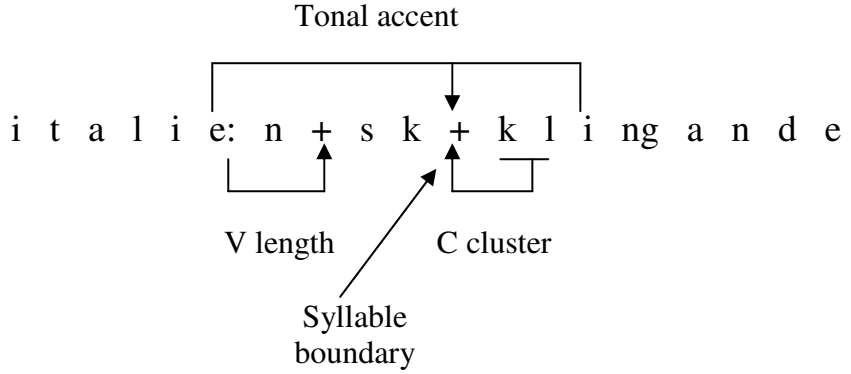
(26) *Comparison with Basque and Māori*

Basque:	$C_0^1VC_1^2VC_0^1$	ancient nouns and adjectives: predominantly bisyllabic
	$C_0^1VC_0^1$	ancient verb roots: predominantly monosyllabic (V may be a diphthong: *i+raun* 'last', *j+aus+i* 'fall')
Māori:	$C_0^1VC_0^1V$	predominantly bisyllabic
	C_0^1V:	a fairly large group of phonetic monosyllables ([V:] historically < *[V_aV_b], where $V_a = V_b$)

(27)

Example:	italienskklingande
Morpheme division:	/itali+en+sk+kliŋ+ande/
Pronunciation:	[(ʔ)i.ta.li.ˣe:nsk.ˌkliŋ.an.də] […ˌkli.ŋan.də]
Gloss:	'Italian-sounding'

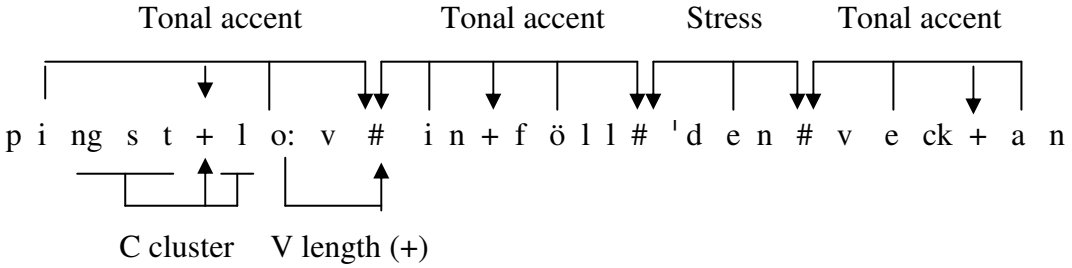
(28) *Recovery of morpheme boundaries*



(29)

Example:	Pingstlov inföll den veckan.
Word & morpheme division:	/piŋst+lov#inn+føll#dɛnn#vɛkk+a+n/
Pronunciation:	[ˣpiŋst.ˌlo:v.ˣin:.ˌføl:.ˈdɛn:.ˣvɛk:an]
Gloss:	'The holidays at Whitsuntide took place that week.'

(30) *Recovery of word and morpheme boundaries*



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