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namely, that in all focus type conditions, speakers controlled the position of the f_0 peak, such that accented items positioned later in the utterance received an earlier f_0 peak alignment than those in sentence medial and initial position. It is not clear to what extent this pattern is a result of what may be a universal tendency, or whether it is partly a reflection of the choice of a different falling accent types used in different sentence positions.

The above study sheds light on the description of temporal alignment of f_0 events in Polish and Bulgarian across focus conditions. Nevertheless, as already stated above, further analysis is needed before the above claims and descriptions can be extended to a more general model of alignment in the two languages studied.

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Tobias Scheer, Nice

Syllabic and trapped consonants in (Western) Slavic: different but still the same

1. Phonological hermaphrodites¹

Syllabic consonants are objects of wonder: they are phonological hermaphrodites. Neogrammarians used to call them "consonants in vocalic function" (Saussure's 1879 laryngeal theory is entirely based on this insight), and this is probably as close as one can get to reality. Indeed, syllabic consonants are consonants physiologically speaking - yet they behave as if they were vowels. As a sound, their body is *only* consonantal - not a bit of vocalicity in sight. As a phonological object, however, they are *only* vocalic - showing no consonantal behaviour at all. In other words, they are males physiologically speaking, but whose behaviour is exclusively female. Except when they are followed by another female (i.e. a vowel), in which case their behaviour patterns with their physiological identity.

Syllabic consonants are the male counterpart of glides, which have opposite distribution of physiological properties and phonological behaviour: glides are female hermaphrodites. They belong to the female vocalic world, but endorse male consonantal function.

On account of this symmetry (among other things, see below), I extend the branching analysis that is commonplace for glides to syllabic consonants: physiological properties determine the syllabic home of all individuals, while spreading defines their function: glides are vowels that have spread onto a consonantal position, while syllabic consonants are consonants which have colonised a vocalic slot.

The way in which syllabic consonants are approached in this article bears a number of peculiarities. For one thing, a catalogue of the specific synchronic and diachronic behaviour that syllabic consonants constantly display in Slavic and Germanic is established. This aims at giving as much, as varied and as detailed flesh as possible to the common-sense statement "syllabic consonants behave like vowels".

The most important piece of evidence, however, comes from the comparison with a closely related relative (both genetically and phonologically speaking): so-called *trapped consonants*. These occur most prominently in Polish,² and have been extensively discussed in the literature (foremost in the work by Jerzy Rubach) under the banner of extrasyllabicity. On Rubach's analysis (e.g. Rubach & Booij 1990a, Rubach 1997a), the [r] in Polish words such as *rdza*, *trwac*, *Piotr* "rust, to last, Peter" is extrasyllabic.

The ambition of the article, then, is twofold. For one thing, I aim at establishing trapped consonants as an autonomous player in the phonological scene: one that is on a par with, and hence distinct from, other fundamental categories such as syllabic consonants, vowels and non-syllabic consonants. Second, I attempt at crossing the information that is conceded by syllabic and trapped consonants. To all extents and purposes, they show exact opposite behaviour: every time the former act as if they were a vowel, the latter show regular consonantal behaviour. Therefore, any analysis of either category must come up with representations that somehow encode this antagonicity. Building a theory of syllabic consonants without looking at their trapped mates must lead to partial and inaccurate results, just as much as the isolated analysis of trapped consonants does.

¹ Comments by Luka Szucsich have greatly improved content and style of this article, which attempts at rendering a chapter of Scheer (2004) (§240). On various occasions, space restrictions do not allow to report on all facets of the data, or to quote all relevant literature.

² But also in Czech (see section 3) and Romansch (Montreuil 1999). Another candidate is Georgian (Kartvelian): I strongly suspect the massive clusters that this language is famous for to be created to a large extent by trapped consonants. For example, what is usually called "syllabic" consonants in this language is transparent to voicing (i.e. the voice value of the adjacent consonants must agree, a typical feature betraying trapped consonants, see sections 5 and 11). Relevant material is discussed for example in Butskhrikidze (2002) and Ritter (ms).

2. Syllabic, but not trapped consonants constitute syllabic peaks and can bear stress

Let us first consider Polish. Table (1) below shows trapped consonants in word-internal and word-final position.³ Relevant Polish words and their Czech cognates are lined up in order to show that the consonants at hand occur in identical contexts in two closely related languages, yet are syllabic only in Czech.

(1) trapped consonants in Polish					
a. word-internally					
	Common Sl.	Polish	Czech	gloss (Polish)	gloss (Czech)
CrC	trɛvati	trwać	trvat	to last	to last
CrzC	grɛmɛti	grzmieć	hřmět	to thunder	to thunder
	brɔnɛti	brzmieć	brnět	to sound	to tickle
	chrɛbɛts	grzbiet	hřbet	back (body)	back (body)
	trɛstina	trzcina	trstina	reed (plant)	reed (plant)
ClC	kɛn-	klnę	klnout	I curse	to curse
	plɔv-	plwocina	arch plvat > plivat	sputum	to spit
b. word-finally					
	Common Sl.	Polish	Czech	gloss (Polish)	gloss (Czech)
Cr	bebrɔ	bóbr	bobr	beaver	beaver
	vɛtrɔ	wiatr	vřtr	wind	wind
Crz	pɛprɔ	pieprz	pepř	pepper	pepper
	vɛnɔtrɔ	wewnątrz	vnitř	inside	inner, inside
Cl	mɛslɔ	myśl	mysl	thought	sense

Let us compare the behaviour of (Polish) trapped and (Czech) syllabic consonants on two counts: stress and poetry. Following the 19th century characterisation according to which consonants are syllabic when they assume vocalic function, syllabic consonants should be able to bear stress, and they should count in verse.

Czech syllabic consonants such as in *krk*, *trvat*, *vlk*, *slza* "throat, to last, wolf, tear" indeed return a positive answer on both counts. When asked, natives invariably identify two peaks in *trvat* and *slza*, which also count as two units in poetry. In the same way, syllabic consonants are stress-bearing units in Czech: stress being word-initial, it regularly falls on the [r] of *krk*, *trvat*, and on the [ʃ] of *vlk*, *slza*.

Further evidence to the end that syllabic consonants count just as much as vowels in Czech comes from a bimoraic constraint that controls infinitives: a well-formed infinitive must either bear a long vowel, e.g. *znát* [znaat] "to know" (vs. *poznać* [poznat] "to recognise"), two short vowels, e.g. *topić* [topit] "to heat", or one short vowel and one syllabic consonant, e.g. *trvat* [trvat] "to last" (see Kastler 1995:26, Scheer 2003, Caha & Scheer in press).

By contrast, Polish trapped consonants never count in poetry, and natives recognise only one peak in words such as *trwać*, *krwi*, *bóbr*, *wiatr* "to last, blood GENsg, beaver, wind". Also, trapped consonants are unable to bear stress. Polish has invariable penultimate stress (e.g. *malin* vs. *malina* vs. *malinami* "raspberry GENpl, NOMsg, INSTpl"). However, words such as *trwać* "to last" and *krwi* "blood GENsg" are stressed on the vowel, not on the trapped [r]. Were trapped consonants able to bear stress, they surely would in these examples. Also, stress placement ignores trapped consonants: the word *jesiotr* "sturgeon" for example is

stressed on the first vowel. Were the final trapped consonant counted, the <o> would be penultimate and hence tonic.

This picture is confirmed by Czech trapped consonants. In this language, [r] and [l] are trapped if and only if they occur word-initially before another consonant. Thus in words such as *řít se*, *řzi*, *řty*, *řhát*, *řžice* "to go red, rust GENsg, lips NOMpl, to lie, spoon",⁴ the initial sonorant is trapped. As in Polish, it is not counted as a syllabic peak by either poetry or natives, and it may not bear stress: despite its being initial, word-initial stress falls on the first vowel.

Finally, there is another category of trapped consonants in Czech: palatalised rhotics <ř> that are flanked by two consonants or occur in word-final position after a consonant. These environments, which make non-palatalised rhotics syllabic (cf. *krk*, *bratr* "throat, brother" etc.), produce trapped results with <ř>: *hřbitov*, *křtít*, *třpytít*, *hřbet*, *pepř*, *vnitř* "cemetery, to baptise, to glance, back (body), pepper, interior". As before in Czech and Polish, <ř> in these words does not count in poetry, natives do not identify it as a syllabic peak (*hřbitov* for example has two peaks), and it is unable to bear stress (stress always falls on the first vowel).

On the bottom line, thus, we can record a consistently opposite behaviour: while syllabic consonants are visible for stress and poetry, trapped consonants are not.

3. Czech syllabic consonants and prefixal vowel-zero alternations

Syllabic consonants also line up with full vowels in regard of another property: in case there is a vowel-zero alternation to their left, zero surfaces.

Relevant evidence comes from Czech consonant-final prefixes (full detail is available in Scheer 1996,2004:§246). Prefixes remain unvocalised if they are followed by CV-initial or C₁C₂V-initial roots. In the latter case, the full cluster C₁C₂ must also be root-initial (as in *podě-brad-ek* "double chin"). In case C₁ is root-initial, but C₂ root-final, i.e. when the root occurs in zero grade, the prefix is vocalised (e.g. *pode-běr-at* "to seize from below").

There are various means of identifying the fact that a root occurs in zero grade. One is the existence of another form of the same root where a vowel overtly separates what appears to be the initial cluster on the surface. Such cases are shown under (2)a below.⁵

(2)	a. root provoking vocalised prefixes			b. root provoking non-vocalised prefixes: no occurrence of $\sqrt{C_1VC_2}$
	$\sqrt{C_1C_2}$ - zero grade: $\sqrt{C_1\emptyset C_2}$	full grade: $\sqrt{C_1VC_2}$		
\sqrt{BR} -	<i>pode-brat</i> pf	<i>pod-bírat</i> ipf	<i>pod-bradek</i>	
\sqrt{DR} -	<i>roze-drat</i> inf	<i>roz-deru</i> 1sg	<i>roz-drobit</i>	
\sqrt{HR} -	<i>přede-hra</i> noun NOMsg	<i>her</i> noun GENpl	<i>od-hrabat</i>	
\sqrt{HN} -	<i>ode-hnat</i> pf	<i>od-hánět</i> ipf	<i>roz-hněvat</i>	
\sqrt{SN} -	<i>beze-sný</i> adj	<i>sen</i> noun NOMsg	<i>pod-sněžník</i>	
\sqrt{SL} -	<i>vze-šlý</i> adj	<i>šel</i> past act part.	<i>roz-šlapat</i>	
\sqrt{ZD} -	<i>pode-zdit</i> inf	<i>zed'</i> noun NOMsg	<i>od-zdola</i>	

Since the prefixal alternation depends on the vocalisation of the root, we have a handle on syllabic consonants. When occurring in the middle of a root, they indeed have the same effect as a full vowel. That is, the prefix remains unvocalised: *roz-dřít* "to crush", *od-mřít* "to reject", *před-krm* "starter (dish)" and so forth.

Bearing this fact in mind, let us examine the analogous situation in Polish.

³ Trapped consonants also occur word-initially. However, Rubach & Booij (1990a) have shown that their behaviour in this context is not quite the same as elsewhere (see Scheer 2004:§354s on this issue). Trapped consonants may also be created by vowel-zero alternations, e.g. *krew* - *krwi* "blood NOMsg, GENsg" (a near-exhaustive list of these cases appears in Scheer 2004:§244). Finally, note that there are no syllabic consonants in Polish.

⁴ An exhaustive list of this class of words is available at www.unice.fr/dsl/tobias.htm, section "other stuff to download/ Slavic data". See also Scheer (2007).

⁵ Glosses, line by line: "to seize from below pf, id, ipf, double chin, to tear up inf, id, 1sg, to crumble, prelude, game, to sweep away, to expel pf, id, ipf, to enrage, to prewash inf, id, 1sg, incentive, sleepless, dream, snowdrop, open adj. (flower), to go past act part., to crush, to underpin, wall, from below, bottomless, day."

4. Vocalisation of Polish prefixes before trapped roots

4.1. Morphology has got a word to say

The Polish situation is more complicated. Prefixal alternations occur as well, but in addition to the phonological rule that governs the Czech picture alone, the vocalisation of Polish prefixes is also subject to morphological restrictions.

The vocalisation of Polish prefixes has been studied in work by, among others, Gussmann (1980a:42s,81s,1980b:148ss), Rubach (1984:186ss), Szpyra (1989,1992:202s), Pawelec (1989) and Rowicka (1999a:267ss,1999b). Regular vowel-zero alternations in prefixes that obey the Czech pattern are found only in related perfective and imperfective (so-called derived imperfectives, "DI") forms of the same verb. This is demonstrated by the following examples.

(3) regular vowel-zero alternations in Polish prefixes

prefix	perfective	imperfective	gloss	prefix	perfective	imperfective	gloss
z(e)-	ze-rwać	z-rywać	to tear off	od(e)-	ode-mknąć	od-mykać	to open
	ze-drzeć	z-dzierać	to tear off		ode-tchnąć	od-dychać	to breathe
	ze-brać	z-bierać	to gather		ode-zwać	od-zywać	to speak
ob(e)-	obe-schnąć	ob-sychać	to dry		ode-przeć	od-pierać	to beat off
w(e)-	we-ssać	w-sysać	to suck in		ode-słać	od-syłać	to send back
	we-trzeć	w-cierać	to rub in	pod(e)-	pode-zreć	pod-zerać	to eat up
roz(e)-	roze-rwać	roz-rywać	to tear apart		pode-słać	pod-syłać	to send

Outside of this specific paradigm, vocalised prefixes hardly ever occur. Some cases in point that I could come by are shown under (4) (Szpyra 1995:132s offers further discussion of exceptional vocalisation in Polish prefixes).

(4) Polish vocalised prefixes outside of the pf - ipf paradigm

vocalised prefix	related forms	gloss
roze-dnieć	dzień, dnia	to grow light, day NOMsg, GENsg
ode-mglać	mgła, mgiel	to de-vaporate, fog NOMsg, GENpl
roze-jm	na-jem, na-jmu	truce, rent (of a flat) NOMsg, GENsg
obe-jm	na-jem, na-jmu	embrace, rent (of a flat) NOMsg, GENsg
beze-cny		infamous
beze-ceństwo		infamy
pode-szwa	szew, szwu	sole, stitch NOMsg, GENsg

The vocalised prefix in the first column is attached to a root whose vowel alternates with zero itself. This may be seen when looking at column two, where the same root appears in vocalised and unvocalised form. The vocalisation of the prefix is expected in these circumstances because alternating vowels are always vocalised when followed by another alternating vowel. This is the basic rule that governs Slavic vowel-zero alternations, known as Lower (e.g. Gussmann 1980a, Rubach 1984).

For the time being, the only thing that needs to be borne in mind is the fact that two alternating vowels in a row are both expected to surface. This holds true regardless of the actual phonetic existence of the rightmost vowel: the <ie> of *pies* "dog NOMsg" is present when the following alternating vowel is expressed as in *pies-ek* "dog dim. NOMsg", but also in case it is absent as in *pies-ek-a* "id. GENsg". Therefore, the vocalisation of prefixes under (4) is regular. However, words such as under (4) represent only a small minority of cases. The unmarked pattern is the one shown under (5), where the non-vocalisation of prefixes is unexpected (as before, the second column allows to control the alternating character of the root vowel).

(5) unexpected non-voca

prefix	related forms
pod-pieniek	pień,
pod-szewka	szew,
bez-senny	sen, s
bez-denny	dno, s
od-setek	sto, s
przed-dzień	dzień

Traditional descri-
prefixes escape the
Various implementat
Rubach (1984:186ss,
phonological autono
move that makes the
has also been analy
Gussmann 1998,200
Cyran & Guss
(1989:215ss,1992,19

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In other words, the
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cases where the pref
The vocalisation has

4.2. How Polish p

We are now in a pos
that bear a trapped co

(6) influence of trapped

a. vocalised prefix

root	prefix + v
drg-	roze-drgać
	roze-drgać
brn-	roze-brnąć

b. unvocalised pref

root	prefix +
trw-	roz-trwać
trw-	roz-trwać
trw-	z-trwożyć
brzm-	roz-brzmieć
krzt-	od-krztnąć
plć-	bez-plcić
krew	roz-krwawić
	bez-krwawić

We know from the foregoing section that the unvoiced prefixes under (6)b do not reveal any property of the root (hence of trapped consonants): rather, they do not "see" the root for morphological reasons.

By contrast, trapped consonants do betray their phonological identity under (6)a. We are sure that words of this kind constitute a single domain: did they not, the prefix would be mute. Hence, the root "sees" the prefix and therefore determines its vocalisation.

As expected, the result is opposite to what we have seen in Czech: $\sqrt{\text{CRC}}$ roots produce vocalised prefixes in Polish, against unvoiced prefixes in Czech. Their sonorant is trapped in Polish, but syllabic in Czech. Again, thus, we may record that trapped consonants, unlike their syllabic cognates, do not behave like vowels.

5. Trapped consonants are transparent to voicing, syllabic consonants are not

The reason why Polish trapped consonants have received attention in the generative literature, foremost in work by Jerzy Rubach (Bethin 1984, Rubach & Booij 1987, 1990a,b, Rubach 1996, 1997a,b, Gussmann 1992), is their peculiar behaviour with respect to voicing.⁶ That is, trapped consonants are transparent for voice assimilation: underlyingly voiced obstruents that precede word-final trapped consonants are devoiced by final devoicing although they are not word-final. Illustration is provided below (T is shorthand for obstruents, R for sonorants).

- (7) Polish: trapped consonants are transparent for voice assimilation I
word-final trapped consonants

...TR#	...TR-V	spelling	gloss
a. katr	kadr-a	kadr GENpl, NOMsg	staff
bupr	bóbr-a	bóbr NOMsg, GENsg	beaver
zupr	zubr-a	zubr NOMsg, GENsg	bison
mukw	mógw-a	mógl masc., fem.	could
b. mexajizm	mexajizmi	mechanizm NOMsg, NOMpl	mechanism
mjelisn	mjelizn-a	mielizn GENpl, NOMsg	shallow water

The dental stop of a word like *kadra* "staff NOMsg" under (7)a is underlyingly voiced. This is ascertained by its pronunciation [kadra]. In GENpl where the case marker is zero, however, the stem-final cluster comes to stand in word-final position and is therefore subject to final devoicing, which is a general feature of Polish. As a result, the /d/ appears as [t]. Words like *mielizna* under (7)b demonstrate the same behaviour for fricatives.

The same transparency is found word-internally: obstruents that flank trapped consonants always agree in voicing. That is, the voice contrast in Polish is neutralised altogether in TrT clusters: $T_{[-\text{voice}]}-R-T_{[+\text{voice}]}$ and $T_{[+\text{voice}]}-R-T_{[-\text{voice}]}$ sequences do not exist. Table (8) below shows that beyond this static distributional evidence, there is also active assimilation, which may seep through the liquid in either direction.

- (8) Polish: trapped consonants are transparent for voice assimilation II
word-internal trapped consonants

CRV	CRC	CRVC-C	spelling	gloss
a.	trfat̩		trwać	to last
b.	plfat̩		plwać	to spit
c. kref	krf-i	krev-ni	krew NOMsg, krwi GENsg, krewny	blood, relative
d. bref	brv-i		brew NOMsg, brwi GENsg	eyebrow
e. jendrek	jentrka		Jędrka NOMsg, Jędrak GENsg	Andy dim.

⁶ This is also the phenomenon on which Rubach's Derivational Optimality Theory (DOT) was originally built (e.g. Rubach 1997a,b). His classical extrasyllabic analysis of trapped consonant transparency is discussed below.

The words under (8)a,b are pronounced with an [f] whose underlying identity is probably /v/. Even though morphology does not allow to put them in a position where their voiced character is expressed overtly, spelt <w> and comparative evidence (e.g. Czech *trvat* [trvat] "to last") hint at /v/. Underlying /v/ can be safely demonstrated for (8)c, though: the noun *krew-ny* [krevni] "relative" allows to observe /v/ on the surface. In NOMsg of the word "blood" *krew* [kref], the [f] can thus be regarded as the result of final devoicing. In GENsg, however, the /v/ is covered by a vowel and should therefore be able to appear as such. Its unexpected devoicing must therefore be ascribed to the presence of the [k] that precedes the trapped [r]. The same holds true for (8)d, except that this time the obstruent preceding the trapped consonant is voiced, which provokes the appearance of [v] in GENsg.

In all cases discussed so far, the assimilation process is progressive. (8)e shows that trapped consonants are also transparent to voice assimilation in case this process is regressive. The TR cluster in *Jędrak* [jendrek] "Andy diminutive NOMsg" appears as [dr] and therefore must be recorded as underlyingly voiced. In the GENsg *Jędrka* [jentrka], however, [tr] is observed. Devoicing must thus be ascribed to the absence of the alternating [e], which puts the TR cluster in contact with the voiceless [k]. The voice value of [k] then rules over the entire TrT cluster.

As before, (Czech) syllabic consonants show opposite behaviour: their flanking consonants are entirely insensitive to the voice value of each other. As in Polish, Czech devoices obstruents in word-final position (e.g. *holub* [hɔlup] vs. *holuba* [hɔluba] "pigeon NOMsg, GENsg"). However, the obstruent of final voiced TR clusters is not subject to this process: the direct cognates of the Polish examples under (7) are *bobr*, *zubr*, *mohl* [bɔbr̩, zubr̩, mɔɦ̩] "beaver, bison, he could" where /b,ɦ/ appear unmodified on the surface.⁷ Also, syllabic consonants are not transparent word-internally. Again, the direct Czech cognates of the Polish words under (8) are not inclined to produce TrT clusters that agree in voicing: *trvat*, *krve* [trvat, krve] "to last, blood GENsg".

Hence it must be concluded that the typical Polish transparency of sonorants in C__# and C__C is not just a consequence of the particular position that they come to stand in: their Czech cognates occur in the same environment without being transparent. Rather, transparency is a specific property of trapped consonants that is not shared by their syllabic relatives.

6. Summary syllabic vs. trapped consonants

We thus face a consistent pattern across the board: syllabic consonants in Czech count in poetry, bear stress, provoke unvoiced prefixes and are not transparent to voicing. On the other hand, trapped consonants in Polish cannot be stressed, do not count in verse, trigger vocalised prefixes and are transparent to voicing. Analyses of trapped and syllabic consonants must take this systematic antagonicity into account.

⁷ Note that the devoiced version of /ɦ/ would be [x], which appears in the word at hand when the final -l is left out in colloquial style: *moh* [mɔx] "he could".

7. What kind of animal is a syllabic consonant ?

7.1. The classical view: syllabic consonants sit in Nuclei

The null hypothesis of early generative times is simple. It merely translates the fact that syllabic consonants assume vocalic function: alongside with vowels, they are assigned the feature [+syll]. This feature, replacing earlier [\pm voc], actually came into being because of the existence of syllabic consonants (see Chomsky & Halle 1968:354).

This approach was carried over to subsequent autosegmental approaches where the feature [\pm syll] continues to be assigned on the grounds of pure observation: segments are [+syll] if and only if they constitute a sonority peak. The presence of [+syll], then, qualifies the segment in question for occupying a nuclear position (as opposed to segments that are [-syll]). Since it is very common that the same consonant in the same word is syllabic in one form but non-syllabic in another (e.g. English *bottle* [bɒtəl] vs. *bottling* [bɒtəlɪŋ]), the value for its feature [\pm syll] is manipulated. Rubach (1977:52ss) for example uses syllabicity-imposing and syllabicity-releasing rules. The former make a sonorant [+syll] after an obstruent and before another consonant or a word boundary, while the latter turns [+syll] into [-syll] in the appropriate context. Also, resyllabification must be assumed because the [l] in *bottle* is supposed to be dominated by a Nucleus when it is syllabic, but sits in an Onset or a Coda in case it is non-syllabic.⁸

The classical interpretation of syllabic consonants thus involves the feature [\pm syll], the existence of consonants in Nuclei and resyllabification. It is expressed by, among many others, Blevins (1995), Bell (1978), Clements (1990:293ss), Hall (2000:215ss), Gussenhoven & Jacobs (1998:28), Kenstowicz (1994:255s) and Carr (1993:55). The representations that result from this approach hardly rest on any phonological evidence (Rubach 1990 is a notable exception). They merely reproduce observation: "whatever constitutes a sonority peak sits in a Nucleus". This is taking into account just one side of the medal: the function of syllabic consonants. Their physiological identity, that is their consonanthood, is left unreflected.

7.2. Why syllabic consonants do not sit in Nuclei

There is good reason to doubt this surface-based analysis. Not only does it neglect one of the two critical properties of hermaphrodite syllabic consonants. It also falls foul of one of the most fundamental autosegmental principles. Multilinear structure allows for interpreting high vowels and glides as one single phonological object, rather than as separate sets of underlyingly contrasting items. That is, the two phonetic objects [j] and [i] are phonologically identical. Their underlying specification defines the high front tongue body position. Whether this object then surfaces as a vowel or as a glide depends on its association with syllabic constituents: a vowel surfaces when it comes to stand in a Nucleus, while a consonant is produced in case it ends up in an Onset or in a Coda. This analysis eliminates [\pm syll], whose information is encoded structurally. Also, it is generally considered an important achievement of autosegmentalism and by now has become orthodox textbook evidence (Kenstowicz 1994:23, Carr 1993:59,194ss, Hall 2000:106, Hayes 1989, Spencer 1996:96s).

Why should a given melody, then, enjoy contrasting phonetic interpretation according to the syllabic constituent that it belongs to in one case (high vowels vs. glides), but not in the other (syllabic consonants)? No phonetic effect is observed on liquids and nasals when they leave their consonantal home in order to be syllabified into a Nucleus. This is incompatible

⁸ All approaches to syllabic consonants along these lines mention the unequal probability for different major classes to occur in Nuclei: in the overwhelming majority of languages, only sonorants (and within this group, preferably nasals) qualify for a nuclear existence; languages that allow for nuclear fricatives or even stops are extremely rare, if not absent from the record altogether (this issue is under debate, see for instance Dell & Elmedlaoui 1985,1988, Bagemihl 1991). In any event, there is an implicational relationship: a language where less sonorous segments occur in Nuclei also admits more sonorous consonants in vocalic function.

(10) German infinitive *-en*

schwa present	schwa absent	spelling	gloss
geeb-ən	geeb-ŋ	geben	to give
helf-ən	helf-ŋ	helfen	to help
wet-ən	wet-ŋ	wetten	to bet
zaag-ən	zaag-ŋ	sagen	to say
lax-ən	lax-ŋ	lachen	to laugh

Each word may be pronounced either with or without schwa. In case schwa is present, the nasal is always dental and non-syllabic. By contrast, it is syllabic and agrees in place with the preceding consonant if schwa is left out. Unlike its English cognate, the German pattern has the advantage of eluding the (phonetic) debate on the eventual presence of a vocalic trace in syncopated forms since the syllabicity of the nasal is independently controlled by its homorganicity. It thus appears that syllabic consonants arise through the syncope of a preceding vowel.

8.2. Diachronic situation: syllabic consonants come into being when a preceding vowel is lost

Diachronically speaking, the German schwa that alternates with zero today once was a full vowel in unstressed position which engaged on a typical lenition trajectory. The German(ic) situation indeed describes the evolution of a great many languages: syllabic consonants are never diachronically primitive. They come into being because the melodic content of a neighbouring Nucleus fades away.⁹ In case the emptied Nucleus occurs before a word-final consonant C__C# or in a closed syllable C__RTV, the consonantal cluster created may be too heavy. One way of resolving this situation is for the emptied Nucleus to acquire new melodic content through spreading from a neighbouring consonant.

If syllabic consonants exist in order to deliver melodic content to an adjacent orphan Nucleus, in principle this could be done by preceding as well as by following consonants. Now the hard observational fact is that syllabic consonants always appear to be born through the syncope of a preceding vowel. The diachronic situation thus replicates the synchronic scenario that was discussed in the preceding section.

Synchronic evidence, however, is not always available. In Slavic for example, the original preceding vowel has been lost definitively and may not even optionally appear on the surface. Only diachronic evidence can establish the correlation between syllabic consonants and the syncope of a preceding vowel. Modern syllabic consonants, which occur only in Czech, Slovak and Serbo-Croatian, continue former vowel-liquid sequences. The vowels at hand are yers, which faded away in late Common Slavic. Yers come in two flavours, one front "ь", the other back "ы". They continue Indo-European short [i] and [u], respectively. Table (11) provides illustration for the regular correspondences and the origin mentioned: a Common Slavic CyerRC sequence is continued by a syllabic consonant in Czech, Slovak and Serbo-Croatian, while Russian and Polish vocalise the yer (see note 11 on the quality of the vocalic continuator).

Syllabic and

(11) Common Slavic √CьRC-
= Czech, Slovak, Serbo-Croatian
= Polish, Russian √CVR
CьRC- > syl
Common Czech Slo
Slavic

gъrdlo	hrdlo	hrd
mrъk-ъvъ	mrkev	
sъmъrtъ	smrt	smu
prъvъ	prvû	prv
vъlna	vlna	vln
vъlkъ	vlk	vlk

The genesis of syllab (1979:33ss,54ss), Rospo Nahtigal (1961:111ss), Pa Vaillant (1950:173ss), Mei authors take up the traditi the syllabic function from

In sum, thus, the arg synchronic and diachronic preceding vowel has been

9. A theory-internal a

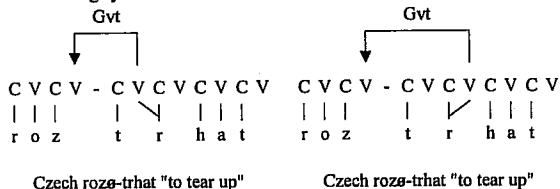
This section is the only o theory that I am committe (1994) in general and so- Scheer 1999, 2004) in pa better represented as a n traditional arborescence. I arboreal definition: "Coda "Coda consonants belong then, is to achieve the late is that a number of addi (foremost empty Nuclei). consists of a strict sequenc function is taken over b segmental expression of it target).

Given the limitations o detail. The only thing tha vowel-zero alternations ar appears is always present phonetically absent in cas expressed if it escapes Gc depends on its content: co

On these assumptions, vocalisation of prefixes (c

⁹ Bell (1978:165ss) confirms this statement on the grounds of a cross-linguistic record of 85 languages that bear what he takes to be syllabic consonants, but which actually may well include trapped items (as most authors, Bell does not distinguish syllabic and trapped consonants).

- (12) syllabic consonants in Czech: who governs the prefixal Nucleus?
 a. option 1: the Nucleus of a left-branching syllabic consonant
 b. option 2: the Nucleus of a right-branching syllabic consonant

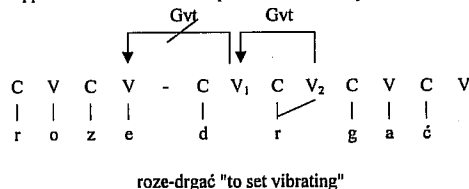


(12)a is well-formed provided that the empty Nucleus to the right of the syllabic consonant is governed by the following [a] (all internal empty Nuclei must be governed). Nothing prevents [a] from doing so. By contrast, the structure under (12)b, where syllabic consonants are right-branching, is ill-formed because the empty Nucleus enclosed by the [t] and the [r] remains orphan (see Blaho 2001,2004 and Scheer 2004:§263 for further discussion).

Syllabic consonants thus ought to be left-branching. This result, achieved on the grounds of prefixal vowel-zero alternations in Czech, matches the synchronic and diachronic distributional evidence that has been discussed earlier: syllabic consonants come into being when the preceding Nucleus is vacated.

What could then be the identity of (Polish) trapped consonants? Recall from section 4.2 that they provoke the vocalisation of prefixes. Since we now have an idea of how these prefixal alternations work in presence of a following syllabic consonant, the status and identity of their trapped Polish cognates falls out automatically. That is, the presence of the prefixal vowel tells us that its Nucleus is not subject to Government. Consider the relevant representation under (13) below.

- (13) trapped consonants in Polish provoke vocalised prefixes



The only reason for the presence of the prefixal vowel can be the fact that the following Nucleus, V₁, does not qualify for lateral actorship: it is unable to govern. This means that it must be struck by Government itself. Continuing this "every other" chain reaction, the Nucleus to its right, V₂, must be the origin of this Government. Therefore, V₂ has to be a sound governor. How could that be? Given what we know about syllabic consonants, the obvious answer is that trapped consonants spread onto the following Nucleus, which acquires full lateral actorship for that reason.

Looking at the prefixal consequences of syllabic and trapped consonants through the prism of CVCV thus puts a name on both candidate structures of (9): left-branching consonants are syllabic, while those that colonise the following Nucleus are trapped.

10. Diachronic confirmation: syllabic consonants are born through the loss of a preceding, trapped consonant through the loss of a following vowel

This representation of syllabic and trapped consonants receives support from their diachronic identity: as a matter of fact, Czech syllabic consonants have been born through the loss of a preceding vowel, while Polish trapped consonants have come into being because a following vowel has faded away. Here again, full demonstration of the philological cannot be offered. Stieber (1979:54ss), Nahtigal (1961:111s), Carlton (1991:151ss; Vaillant (1950:173ss), Panzer (1991:296ss) and Vondrák (1924:181) provide relevant information, of which a digest is available in Scheer (2004:§277).

Given space limitations, the only thing that can be done here is to look at the diachronic source of syllabic and trapped consonants. Table (1) actually contains the Common Slavic source of the latter category: it may be seen that Polish trapped consonants always followed by a yer ("ь" and "ъ"). The traditional Slavic literature refers to this pattern (and tr̥t, which I leave out for expository reasons). It was already mentioned earlier that yers were lost in late Common Slavic. The analysis, then, is very simple, actually even the 19th century common sense statement: the consonant takes over the syllabic function of the vowels that die of senility. Modern autosegmental structure explains in greater detail "taking over" actually means: the adjacent sonorant spreads onto the orphan empty (empty) Nucleus.

The question now is what happens in tr̥rt clusters, i.e. when a Common Slavic yer precedes a liquid. Relevant data appear under (14) below.¹⁰

- (14) Western Slavic reflexes of CS tr̥rt

Polish reaction	Common Slavic	Czech	Polish	Czech gloss	Polish gloss
CaRC: 34	g̥r-dlo g̥rt-ь d̥r-ь s̥r-na	hrdlo hrst drn srna	gardlo garść darń sarna	throat (cupped) hand lawn roe	throat (cupped) hand lawn roe
CieRC: 16	p̥rsi s̥rp̥	prsa srp	piers sierp	breast sickle	breast sickle
CiRC: 4	v̥lk̥	vlk	wilk	wolf	wolf
CeRC: 6	s̥rd̥-ь-ce p̥ln̥	sr̥dce pl̥ny	welna serce pelny	wool heart full	wool heart full
Total: 60					

As may be seen, Polish produces pre-vocalised reflexes of CS tr̥rt items, i.e. "vocalises" the yer.¹¹ On the Czech side, however, syllabic consonants appear. Polish has separate continuators for CS tr̥rt and CS tr̥t (pre-vocalised vs. trapped consonants). Czech seems to have merged the two patterns: CS tr̥t under (1) as well as CS tr̥rt and produce modern syllabic consonants. Hence there is certainly evidence for a right-branching structure.

¹⁰ (14) is a sample of a 60-item list that I have established on the grounds of various etymological dictionaries and historical grammars. The sources include Havlová & Erhart (1989-2002), Bańkowski (2000), (1927), Machek (1957), Holub & Kopečný (1952), Rejzek (2001), Rospond (1979:95ss) (1979:33ss,54ss), Nahtigal (1961:111ss). The philological situation is rather complex and cannot be covered here. The total number of roots that can be covered probably exceeds 60 a bit (yet not much).

¹¹ The quality of the vowel depends on the consonantal environment. Its prediction is a classical problem of Polish historical grammar, see for example Stieber (1973:23s,42ss,1979:54ss), Długosz-Kurczabowa (1993:84ss), Rospond (1979:94ss), Nahtigal (1961:111ss), Carlton (1991:249s), Vondrák (1924:183ss) (1913-50 II:201s), Wijk (1949-50:44s).

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discover who they are. In short, any theory that proposes an identity for syllabic consonants without knowing about, and having integrated, the evidence for trapped consonants (and vice-versa), must fail.

These two goals are theory-neutral. The check-list that I have introduced may be incomplete, but it makes a strong case, empirically speaking, for the absolute antagonicity of syllabic and trapped consonants. It should therefore contribute to a better understanding of these strange phonological hermaphrodites, no matter what the theory.

The study of syllabic consonants has gained some interest recently, especially in Government Phonology (less so, unfortunately, the study of trapped consonants). The perspective that I am arguing for here and at greater length in Scheer (2004:§240) contributes to this movement. The theory-specific part of the article is therefore nothing that should be considered a definite result. Rather, it is a first exploration of the consequences that could be drawn, in the specific environment of CVCV, from the insights of the theory-neutral sections. The conclusion that syllabic consonants branch on the preceding empty (emptied) Nucleus, while trapped consonants have the reverse structure, is certainly perfectible, perhaps simply wrong (foremost on the trapped side).

There is indeed some evidence on which I could not report in the frame of an article, and which does not appear to support the analysis presented. Relevant facts are reviewed in Scheer (2004:§296). We know that trapped consonants, unlike their syllabic peers, are invisible for stress (section 2). This suggests that they do not participate in the vocalic world at all. Their natural representation, then, would be one where they remain unassociated to any Nucleus (see Blaho 2001, 2004 on this issue). Also, the right periphery of syllabic consonants begs the question: heavy clusters can appear to the right of syllabic consonants (e.g. in Czech words such as *čtvrtek* - *čtvrk-u* "Thursday NOMsg, GENsg", *trpknout* "to become bitter"). These enclose additional empty Nuclei that remain orphan in my current understanding.

Be that as it may, it is wise, thus, to consider the present article primarily as a methodological contribution, with a supplement that explores how the insight gained, at an embryotic understanding of what is going on, could be implemented into a particular theory. Further study must uncover the real identity of syllabic and trapped consonants.

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