

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*, *trwać*, *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 the absolute antagonicity in regard of the other.

¹ Comments by Luka Szucsich have greatly improved content and style of this article.

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).

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.

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 neighbouring languages and yet are syllabic only in Czech.

(1) trapped consonants in Polish

a. word-internally

	Common Sl.	Polish	Czech	gloss (Polish)	gloss (Czech)
CrC	tr̥vati	trwać	trvat	to last	to last
CrzC	gr̥mę̃ti	grzmieć	hřmět	to thunder	to thunder
	br̥nę̃ti	brzmieć	brnět	to sound	to tickle
	ch̥r̥b̥b̥b̥t̥	grzbiet	hřbet	back (body)	back (body)
	tr̥stina	trzcina	trstina	reed (plant)	reed (plant)
ClC	kl̥n-	klnę	klnout	I curse	to curse
	pl̥v-	plwocina	arch plvat > plivat	sputum	to spit

b. word-finally

	Common Sl.	Polish	Czech	gloss (Polish)	gloss (Czech)
Cr	beb̥r̥	bóbr	bobr	beaver	beaver
	vět̥r̥	wiatr	vítř	wind	wind
Crz	pr̥r̥b̥	pieprz	pepř	pepper	pepper
	v̥n̥j̥æt̥r̥	wewnątrz	vnitř	inside	inner, inside
Cl	mysl̥	myśl	mysl	thought	sense

Let us now compare the behaviour of trapped and syllabic consonants. Following the 19th century characterisation according to which consonants are syllabic when they assume vocalic function, we may put at use two criteria: stress and poetry. Like vowels, 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 bear stress in Czech: stress is word-initial in this language, and thus regularly falls on the [r] of *krk*, *trvat*, and on the [ɮ] of *vlk*, *slza*.

Further evidence to the effect 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. *po-znat* [pɔznat] "to recognise"), two short vowels, e.g. *topit* [tɔpit] "to heat", or one short vowel and one syllabic consonant, e.g. *trvat* [trvat] "to last" (see Kastler 1995:26, Scheer 2003).

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

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" (the near-exhaustive list of these cases appears in Scheer 2004:§244). Finally, note that there are no syllabic consonants in Polish.

A more general remark is in order here. This article tries to condensate a chapter of Scheer (2004) (i.e. §240). On various occasions, space restrictions do not allow to report on all facets of the data, nor to quote all of the relevant literature. Greater detail is available in the book.

(e.g. *málin* vs. *malína* vs. *malinými* "raspberry GENpl, NOMsg, INSTpl"). However, words such as *trwác* "to last" and *krwí* "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. Stress also ignores word-final trapped consonants: the word *jésiotr* "sturgeon" for example is stressed on the first vowel. Were the final trapped consonant counted, the <o> would be 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 *rdít se*, *rzi*, *rty*, *lhát*, *lžíce* "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 be stressed. It was mentioned earlier that stress falls on the initial syllable in Czech. Hence, were the sonorant in the above words a stress-bearing unit, it would be tonic. As a matter of fact, it is not: in all cases 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*, *třpytit*, *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: syllabic consonants are visible for stress and in poetry, whereas trapped consonants are not. We will see on the following pages that this antipodal behaviour is also observed in regard of another test, the vocalisation of prefixes.

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. This effect is also produced by vowels.

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 *podø-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-bør-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:		
	zero grade: /√C ₁ ∅C ₂ /		full grade: /√C ₁ VC ₂ /			no occurrence of √C ₁ VC ₂
√BR-	pode-brat	pf	pod-bírat	ipf		pod-bradek
√DR-	roze-drat	inf	roz-deru	1sg		roz-drobit
√HR-	přede-hra	noun NOMsg	her	noun GENpl		od-hrabat
√HN-	ode-hnat	pf	od-hánět	ipf		roz-hněvat
√SN-	beze-sný	adj	sen	noun NOMsg		pod-sněžník
√ŠL-	vze-šlý	adj	šel	past act part.		roz-šlapat
√ZD-	pode-zdít	inf	zed'	noun NOMsg		od-zdola

⁴ The exhaustive list of this class of words is available at www.unice.fr/dsl/tobias.htm, section "other stuff to download/ Slavic data".

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."

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, these indeed have the same effect as a full vowel: the prefix remains unvocalised: roz-drtit "to crush", od-mrštit "to reject", před-krm "starter (dish)" and so forth.

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

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 in this language as well, but in addition to the phonological rule that governs the Czech picture alone, the vocalisation of Polish prefixes is subject to important morphological restrictions.

The vocalisation of Polish prefixes has been addressed in work by, among many others, Gussmann (1980a:42s,81s,1980b:148ss), Rubach (1984:186ss), Szpyra (1989,1992:202s), Pawelec (1989), Rowicka (1999a:267ss,1999b). In fact, 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-mknać	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-żreć	pod-żerać	to eat up
roz(e)-	roze-rwać	roz-rywać	to tear apart		pode-słać	pod-syłać	to send

Outside of this specific morphological category, vocalised prefixes hardly ever occur. Some cases in point that I could come by are shown under (4) (Szpyra 1995:132s also offers 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, mgieł	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 item. This is the ground rule that governs Slavic vowel-zero alternations, which is 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-øk-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-vocalisation of prefixes in Polish

a. before expressed alternating vowels			b. before unexpressed alternating vowels		
unvocalised prefix	related forms	gloss	unvocalised prefix	related forms	gloss
pod-pieniek	pień, pnia	honey fungus, trunk	od-wszyć	wesz, wszy	to de-louse, louse
pod-szewka	szew, szwu	lining, stitch	od-pchlić	pchła, pcheł	to de-flea, flea
bez-senny	sen, snu	sleepless, dream	bez-cłowy	ćło, ceł	duty-free, duty
bez-denny	dno, den	bottom, bottom	nad-dniówka	dzień, dnia	extra day's work, day
od-setek	sto, setka	percentage, hundred	w-śnić się	sen, snu	to start dreaming, dream
przed-dzień	dzień, dnia	the day before, day	roz-lzawić	łza, łez	to draw tears, tears

The traditional description expresses the observation at hand by the fact that there is a "strong" prefix boundary under (5): the prefix escapes the influence of the root because the boundary inhibits communication. Various implementations of this insight can be found in the literature. For instance, Rubach (1984:186ss) develops a solution in the spirit of Lexical Phonology: he captures the phonological autonomy of prefixes by feeding them into the derivation on the last cycle, something that makes them immune against the earlier action of Lower. Polish prefixes have also been analysed along the lines of so-called phonological domains (Kaye 1995, Gussmann 1998,2002:45ss). Domains are used for example by Gussmann & Kaye (1993), Cyran & Gussmann (1998,1999), Rowicka (1999a:267ss) and Szypra (1989:215ss,1992,1995:132s).

Whatever approach is favoured, however, it should be clear that the recurrently deviating non-vocalisation of prefixes is the result of morphological, rather than of phonological action. Put in theory-neutral terms, the prefix and the root "do not see each other" in these cases. But this also means, in turn, that the presence of a prefixal vowel under (3) and (4) is an unerring witness of the fact that the prefix and the root do "see each other" (i.e. form a single domain). In other words, the prefixal behaviour under (3) and (4) is the result of phonological forces alone, while (5) has been produced by joint phonological and morphological rule. Therefore, those cases where the prefix is vocalised are the phonologically regular ones on which we are entitled to ground a phonological reasoning.

4.2. How Polish prefixes behave before trapped consonants

We are now in a position to look at the behaviour of prefixes when they are attached to roots that bear a trapped consonant. The total record that I could establish appears under (6) below.

(6) influence of trapped consonants on Polish prefixes

a. vocalised prefix

root	prefix + trapped root	gloss
drg-	roze-drgać (się), roze-drgany	to become vibrating, id. adj
brn-	roze-brnać	to flounder (pf)
brzm-	ode-brzmieć	to echo back
grzm-	ode-grzmieć	to echo (thunder)

b. unvocalised prefix

root	prefix + trapped root	gloss
trw-	roz-trwonić	to squander (pf)
trw-	roz-trwaniać	to squander (ipf)
trw-	z-trwożyć się, s-trwożyć	to become fearful (pf), id.
brzm-	roz-brzmieć, roz-brzmiewać	start to sound (pf), id. (ipf)
krzt-	od-krztusić, od-krztuszać	to cough up (pf), id. (ipf)
plć-	bez-plćiowy	sexless, boring
krew	roz-krwawić, roz-krwawiać, bez-krwawy, bez-krwisty, s-krwawić	to cause to bleed (pf), id. (ipf), bloodless (without casualty), bloodless (e.g. meet), to stain with blood (pf)

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

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

The result, as before, is opposite to what we have seen in Czech: $\sqrt{\text{CRC}}$ roots produce vocalised prefixes in Polish, against unvocalised 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 the 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. Some evidence appears 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. <i>katr</i>	<i>kadr-a</i>	<i>kadr</i> GENpl, NOMsg	staff
<i>bupr</i>	<i>bobr-a</i>	<i>bóbr</i> NOMsg, GENsg	beaver
<i>zupr</i>	<i>zubr-a</i>	<i>żubr</i> NOMsg, GENsg	bison
<i>mukw</i>	<i>mogw-a</i>	<i>mógł</i> masc., fem.	could
b. <i>mexanizm</i>	<i>mexanizmi</i>	<i>mechanizm</i> NOMsg, NOMpl	mechanism
<i>mjelisn</i>	<i>mjelizn-a</i>	<i>mielizn</i> 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* "shallow water NOMsg" under (7)b demonstrate the same behaviour for fricatives.

Trapped consonants show the same transparency word-internally. This is shown by the fact that flanking obstruents always agree in voicing. That is, voice contrast in Polish is

⁶ This is actually the very phenomenon on which Rubach's Derivational Optimality Theory (DOT) was originally built (e.g. Rubach 1997a,b, 2000, 2003). His classical extrasyllabic analysis of trapped consonant transparency is discussed below in section 11.

neutralised altogether in TrT clusters: $T_{[-voice]}-r-T_{[+voice]}$ and $T_{[+voice]}-r-T_{[-voice]}$ 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.	kɾɛf	kɾf-i	kɾɛv-ni	krew NOMsg, krwi GENsg, krewny	blood, relative
d.	bɾɛf	brv-i		brew NOMsg, brwi GENsg	eyebrow
e.	jɛndrɛk	jɛntrka		Jędrka NOMsg, Jędrək GENsg	Andy dim.

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/. The alleged /v/ can be safely demonstrated for (8)c, though: the noun *krew-ny* [kɾɛvni] "relative" allows to observe /v/ on the surface. In NOMsg of the word "blood" *krew* [kɾɛf], 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 thus 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 *Jędrək* [jɛndrɛk] "Andy diminutive NOMsg" appears as [dr] and therefore must be recorded as underlyingly voiced. In the GENsg *Jędrka* [jɛntrka] of the same word, however, [tr] is observed. Devoicing must thus be ascribed to the absence of the alternating [ɛ], which puts the TR cluster in direct contact with the voiceless [k]. The voice value of [k] then rules over the entire TrT cluster.

We already know that (Czech) syllabic consonants always display opposite behaviour in regard of their (Polish) trapped cognates. Therefore, it does not come as a surprise that 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*, *žubr*, *mohl* [bɔbr̩, žubr̩, 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 at all to produce TrT clusters that agree in voicing: *trvat*, *krve* [trvat, kɾvɛ] "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 - it does not characterise their syllabic relatives.

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

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 unvocalised 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. Any analysis of either trapped or syllabic consonants must take this absolute antagonicity into account. Let us now look at how this situation could be interpreted.

7. What kind of animal is a syllabic consonant ?

7.1. The classical view: syllabic consonants sit in Nuclei

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

This approach was carried over to subsequent autosegmental approaches where the feature [±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* [bɒtl̩] vs. *bottling* [bɒtlɪŋ]), the value for its feature [±syll] is manipulated during the derivation. 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 [±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). The only principle applied reproduces the observational fact: "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 on the other hand, i.e. 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 of syllabic consonants. 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

⁸ All approaches to the syllabicity of 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 inexistent (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 can occur in Nuclei also admits more sonorous consonants in nuclear function.

as separate sets of underlyingly contrasting items. That is, the two phonetic objects [j] and [i] are phonologically identical. The only underlying specification defines the high front tongue body position. Whether this unique underlying object surfaces as a vowel [i] or a glide [j] depends on its association with syllabic constituents: it appears as the vowel [i] if it is attached to a Nucleus, while a consonant [j] is heard in case it is dominated by an Onset or a Coda. This position is perfectly consensual and generally considered as an important achievement of autosegmentalism. Since Kaye & Lowenstamm (1984), it has become orthodox textbook material, and most of the literature that interprets syllabic consonants as Nuclei also adheres: 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 for liquids and nasals when they leave their consonantal home in order to be syllabified into a Nucleus: [l,r,n,m] enjoy identical pronunciation whether attached to an Onset, a Coda or a Nucleus. This is in overt violation of the fundamental autosegmental principle according to which vowelhood and consonanthood are a matter of association to syllabic constituents, rather than of melody.

Fortunately enough, the literature also offers a different take. On this analysis, syllabic consonants sit in a consonantal constituent. The syllabicity effect, then, arises through their spreading onto a neighbouring Nucleus. This is also the reason why syllabic consonants show vocalic behaviour: they participate in the vocalic world because one of their legs belongs to a Nucleus. On this count, the alternation between syllabic and non-syllabic versions of the same consonant is a simple matter of the presence (syllabic interpretation) vs. the absence (non-syllabic interpretation) of spreading onto an available neighbouring Nucleus. In sum, thus, consonants are consonants because they belong to a consonantal constituent. Their eventual syllabicity is a consequence of spreading. No resyllabification at any level is involved.

8. Do syllabic consonants spread to their right or to their left ?

8.1. A fundamental argument for left-branchers: the complementary distribution of $\underset{\cdot}{C}$ and $\text{ə}C$

Let us now have a closer look at this alternative. It raises an obvious question that was carefully eluded in the preceding section: do syllabic consonants expand on the preceding or on the following Nucleus? Table (9) below shows both options.

- (9) possible representations for syllabic consonants
 a. left-branching b. right-branching



Right-branching structures are argued for by, among others, Rowicka (1999a:261ss,2003), Blaho (2001,2004) and Rennison (1999:333ss). The left-branching alternative is promoted for example by Harris (1994:224s), Hall (1992:35s), Wiese (1986,1996), Szigetvári (1999:117ss) and Toft (2002). The frame of an article does not allow for further discussion of the individual proposals and their correlation with the particular theories in which they are couched. The reader must be referred to Scheer (2004:§256), where more detail is offered. Let us look, however, at the essence that can be filtered out from the literature.

The number one argument is the complementary distribution of syllabic and non-syllabic versions of the same consonant in the same word. This pattern is recurrent in many languages: either the consonant is non-syllabic, in which case it is preceded by a schwa. Or it is syllabic,

but then occurs without preceding schwa. This distribution establishes the equivalence "absence of schwa = syllabicity of consonants". The argument thus is obvious: the *preceding*, rather than the following Nucleus, is involved in consonantal syllabicity. The relevant pattern is found for example in English (Toft 2002) and German.

In the latter language, syllabic consonants enjoy about the same frequency and distribution as in English: [l] and all nasals, plus [r] in rhotic varieties, may be syllabic. Syllabic consonants typically occur in word-final position after consonants or arise when the vowel of a vowel-initial suffix is dropped. However, this familiar pattern is completed by a peculiar feature of German: syllabic nasals agree in place with the preceding consonant. That is, an underlying /n/ will appear as [m, n̥, ŋ, ŋ̥, N̥] according to the place of articulation of the preceding consonant. Relevant configurations are created by suffixes that are made of schwa plus an underlying dental nasal. One case in point is the infinitive <-en> /-ən/ (see for example Hall 1992:193ss, Wiese 1996:222s). Consider the behaviour of the nasal under (10).

(10) German infinitive *-en*

schwa present	schwa absent	spelling	gloss
geeb-ən	geeb-m̥	geben	to give
helf-ən	helf-ŋ̥	helfen	to help
vet-ən	vet-ŋ	wetten	to bet
zaag-ən	zaag-ŋ̥	sagen	to say
laχ-ən	laχ-N̥	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, the nasal is syllabic and agrees in place with the preceding consonant if schwa is left out. In other words, consonantal syllabicity and the presence of a preceding vowel are in complementary distribution. The German pattern (unlike its English cognate, see Toft 2002) 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. This result seems quite trivial since it is overtly encoded in English and German spelling systems.

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

Let us now look at the vowel that used to precede syllabic consonants, and at present may surface in free variation: schwa. Now we know independently that schwa is the second but last stage of the typical lenition trajectory on which unstressed vowels engage: full peripheral vowel > central vowel > zero.

The Germanic situation actually describes the scenario of a great many, if not of all languages: syllabic consonants are never diachronically primitive. They come into being because of an evolution that makes the melodic content of a neighbouring Nucleus fade away.⁹ In case this emptied Nucleus occurs before a word-final consonant C__C# or in a closed syllable C__RTV, the consonantal cluster created is too heavy. One way of resolving this awkward situation is to provide new melodic content to the orphan empty Nucleus via spreading from a neighbouring consonant.

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, which actually may well include trapped items (as most authors, regrettably enough, he does not make the difference).

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 consonantal melody-providers. Now the hard observational fact is that syllabic consonants always seem to be born through the syncope of a preceding, not of a following vowel. This, of course, is but the diachronic version of the argument that was made in the preceding section. In languages like Slavic where the original preceding vowel has been lost definitively and may not optionally appear on the surface (anymore?), only diachronic evidence can establish the correlation between syllabic consonants and the syncope of a preceding vowel. But anyway, whether looking at synchronic alternations or at diachronic evolution, the argument remains the same. It is the fundamental evidence for representing syllabic consonants as left-branching, rather than as right-branching structures.¹⁰

Let us thus look at the genesis of syllabic consonants in Slavic. In modern times, they occur in Czech, Slovak and Serbo-Croatian. Only the liquids [r] and [l] can assume this function in these languages.¹¹ It is a well-known fact that Slavic syllabic consonants continue former vowel-liquid sequences (see the literature below). The vowels at hand are so-called yers, which faded away since late Common Slavic. Yers come along in two flavours, one front "ь", the other back "ъ". They continue Indo-European short [i] and [u], respectively. Table (11) provides some illustration of the regular correspondences and the diachronic 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 (in a predictable way in the former, but in a rather complicated fashion in the latter language, see note 13).

(11) Common Slavic $\sqrt{C\grave{y}RC-}$ / $\sqrt{C\grave{y}RC-}$
 = Czech, Slovak, Serbo-Croatian $\sqrt{CRC-}$
 = Polish, Russian $\sqrt{CVRC-}$
 C \grave{y} RC- > syllabic > vocalised
 Common Czech Slovak Serbo- Polish Russian gloss
 Slavic

гъrdlo	hrdlo	hrdlo	grlo	gardło	gorło	throat
мъrk-ъvь	mrkev		mrkva	marchew	morkov'	carrot
съmьrtь	smrt	smrt'	smrt	śmierć	smert'	death
ръrvь	prvú	prvú	prvi	pierwszy	pervyi	first
въlna	vlna	vlna	vuna	welna	volna	wool
въlkъ	vlk	vlk	vuk	wilk	volk	wolf

The genesis of syllabic consonants in Slavic is described in greater detail for example in Stieber (1979:33ss,54ss), Rospond (1979:94ss), Długosz-Kurczabowa & Dubisz (1993:84ss), Nahtigal (1961:111ss), Panzer (1991:296ss), Carlton (1991:151ss), Vondrák (1924:180ss), Vaillant (1950:173ss), Meillet (1934:73ss), Mikkola (1913-50 II:200ss), Mann (1957:54). All authors take up the traditional 19th century description according to which liquids took over the syllabic function from preceding vowels (yers) as they faded away.

It thus appears that the Slavic evidence is strictly parallel to the Germanic case which was discussed in the foregoing section: in all instances, synchronic and diachronic alike, syllabic consonants come into being because a *preceding* vowel has been lost.

¹⁰ Left-branching structures have been proposed by Harris (1994:224s), Wiese (1986,1996) and others on these grounds (even if this fact fails to be made explicit on many occasions).

¹¹ With the exception of two words in Czech, *sedm* "seven" and *osm* "eight", which may be pronounced [sɛdm̩], [ɔsm̩] in high-style speech, but most commonly appear as [sɛdum], [ɔsum]. In Serbo-Croatian, only [r] can be syllabic since the lateral has vocalised in Codas, where it appears as [ɔ]. In syllabic position, however, the vocalisation produces [u] (see table (11)).

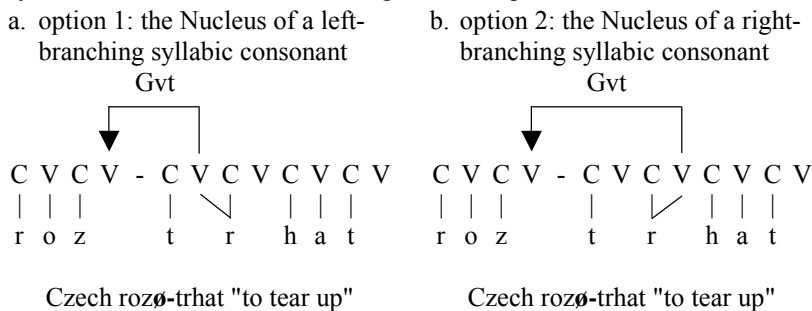
9. A theory-internal argument: prefixal vowel-zero alternations again

This section is the only one in the present article where reference is made to the particular theory that I am committed to: Government Phonology (Kaye et al. 1990, Kaye 1990, Harris 1994) in general and so-called CVCV (Lowenstamm 1996, Szigetvári 1999, Scheer 1999, 2004) in particular. The core proposal of CVCV is that syllable structure is better represented as a network of lateral relations among segments than in terms of the traditional arborescence. For example, a Coda consonant will enjoy a lateral, rather than an arboreal definition: "Coda consonants occur before a governed empty Nucleus", rather than "Coda consonants belong to a constituent that is the sister of the Nucleus". The overall goal, then, is to achieve the lateralisation of structure and causality. A consequence of this approach is that a number of additional empty constituents are assumed that remain unpronounced (foremost empty Nuclei). Also, no syllabic arborescence is left at all: constituent structure consists of a strict sequence of non-branching Onsets and non-branching Nuclei. The arboreal function is taken over by lateral relations, which identify as Government (spoiling the segmental expression of its target) and Licensing (backing up the segmental expression of its target).

Given the limitations of an article, there is no hope to introduce the properties of the theory in any further detail. The only thing that needs to be understood in order to follow the argument is that vowel-zero alternations are supposed to be structure-preserving: the Nucleus where the vowel appears is always present, irrespectively of whether it is actually pronounced or not. Its phonetic expression is controlled by the status of the following Nucleus: in case it is contentful, it governs its preceding peer, which provokes the absence of the alternating vowel (Government spoils). If the following Nucleus is empty itself, it cannot act as a governor and hence its preceding peer escapes Government and receives phonetic expression.

On these assumptions, reconsider the fact that Czech syllabic consonants provoke the non-vocalisation of prefixes (cf. section 3).

(12) syllabic consonants in Czech: who governs the prefixal Nucleus?



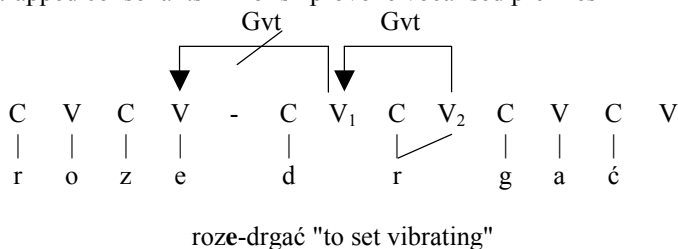
(12)a is well-formed provided that the empty Nucleus to the right of the syllabic consonant is governed by the following [a] (all internal empty Nuclei must be governed). Nothing prevents [a] from doing so. By contrast, the structure under (12)b where syllabic consonants are right-branching is ill-formed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

If (12)b is ill-formed, (12)a must be the correct representation for syllabic consonants, which are thus 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* vowel is lost.

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. In turn, 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 and hence cannot be subject to Government itself. How could that be? Given what we know about syllabic consonants, the answer is straightforward: 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 the *preceding* vowel, while Polish trapped consonants have come into being because the *following* vowel has faded away. Here again, full demonstration of the philological detail cannot be offered in the frame of an article. Stieber (1979:54ss), Nahtigal (1961:111s), Carlton (1991:151ss,249s), Vaillant (1950:173ss), Panzer (1991:296ss) and Vondrák (1924:181) provide relevant information, of which a digest is available in Scheer (2004:§277).

The only thing that can be done here is to look at the bare diachronic source of syllabic and trapped consonants. Table (1) actually contains relevant Common Slavic evidence for the latter category: it may be seen there that Polish trapped consonants were always *followed* by a yer ("ь" and "ъ"). The traditional Slavic literature refers to this pattern as тѣрт (and тѣртъ, 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 embracing the 19th century common sense statement: the consonant takes over the syllabic function of vowels that die of senility. Modern autosegmental structure explains in greater detail what "taking over" actually means: the adjacent sonorant spreads onto the orphan empty (emptied) Nucleus.

The question now is what happens in тѣрт clusters, i.e. when a Common Slavic yer *precedes* a liquid. Relevant data appear under (14) below.¹²

¹² The 60-item list under (14) is a compilation of various etymological dictionaries and historical grammars that I have established. The sources include Havlová & Erhart (1989-2002), Bańkowski (2000), Brückner (1927), Machek (1957), Holub & Kopečný (1952), Rejzek (2001), Rospond (1979:95ss), Stieber (1979:33ss,54ss), Nahtigal (1961:111ss). The philological situation is rather complex and cannot be discussed at length here. The total number of roots that can be come by probably exceeds 60 a bit (yet not much).

- (14) Western Slavic reflexes of CS ɚrt
 Czech √CRC- = Polish √CVRC-

Polish reaction	Common Slavic	Czech	Polish	Czech gloss	Polish gloss
CaRC: 34	гър-dlo	hrdlo	gardło	throat	throat
	гърт-ть	hrst	garść	(cupped) hand	(cupped) hand
	дър-нь	drn	darń	lawn	lawn
	сър-на	srna	sarna	roe	roe
CieRC: 16	рърси	prsa	pierś	breast	breast
	сърръ	srp	sierp	sickle	sickle
CiRC: 4	вълкъ	vlk	wilk	wolf	wolf
CeRC: 6	вълна	vlna	welna	wool	wool
	сърдъ-се	srđce	serce	heart	heart
	рълнь	plný	pełny	full	full
Total: 60					

As may be seen, Polish produces pre-vocalised reflexes of CS ɚrt items, i.e. simply "vocalises" the yer.¹³ On the Czech side, however, syllabic consonants appear. When looking at the overall comparatistic situation of Western Slavic, then, it appears that only Polish has separate continuators for CS ɚrt and CS ɚrt̚: pre-vocalised in the former case (14) vs. trapped in the latter (1). Czech on the other hand seems to have merged both CS patterns: CS ɚrt̚ under (1) as well as CS ɚrt under (14) produce modern syllabic consonants. Hence, there is certainly evidence for a right-branching status of trapped consonants, but it seems that nothing allows to decide between a right- and a left-branching identity for Czech syllabic consonants.

This, however, is but the impression when looking at the modern waters, which have been muddied by a secondary evolution. It is notorious in all diachronic grammars of Czech that the modern situation is the result of a movement which has taken place in historical times and can be followed step by step in written testimony. That is, Modern Czech syllabic consonants, when identified according to their origin, fall into so-called "primary" and "secondary", or "old" and "new" items. Old syllabic consonants go back to CS ɚrt̚, while their younger peers that have emerged in historical times continue CS ɚrt̚. In other words, the historical change that is transparent in Old Czech script transforms trapped into syllabic consonants.¹⁴ The CS contrast between ɚrt̚ and ɚrt̚ is thus abandoned, both pattern merge: CS ɚrt̚ > ocz trapped trt

¹³ The quality of the vowel depends on the consonantal environment. Its prediction is a classical concern of Polish historical grammar, see for example Stieber (1973:23s,42ss,1979:54ss), Długosz-Kurczabowa & Dubisz (1993:84ss), Rospond (1979:94ss), Nahtigal (1961:111ss), Carlton (1991:249s), Vondrák (1924:183ss), Mikkola (1913-50 II:201s), Wijk (1949-50:44s).

¹⁴ Without context, or almost: the Polish CrzC pattern of table (1) produces CřC on the Czech side, and ř in these clusters is trapped to date (see section 2). Alongside with palatalised ř, word-initial trapped consonants such as in *rdít se, lhát* "to go red, to lie" etc. (see section 2) refuse to become syllabic: they are still trapped in the modern language. While I do not know why ř rebels against syllabicity, the ban of syllabic consonants in word-initial position ties in with the fact that Czech is a language with no word-initial restrictions (in contrast to, say, English, #RT, #TT and #RR do occur). Assuming CVCV, the latter fact leads to conclude that Czech does not possess the "initial CV" (see Scheer 2004:§§83,402), i.e. an empty CV unit that is the real phonological identity of the diacritic "#" "the beginning of the word". In absence of this CV unit and if syllabic consonants are indeed left-branching, it is obvious why word-initial sonorants cannot become syllabic in Czech: nobody is there they could branch on. An interesting prediction, then, is that languages with word-initial syllabic consonants (such as Serbo-Croatian for example) do possess the initial CV and hence show the same word-initial restrictions on consonant clusters as the regular #TR-only languages (English, German, French etc.). On the face of it, this does not seem to be true for Serbo-Croatian, where words such as *ptica* "bird" are found. However, words of that kind are extremely rare (6 roots altogether on my count when leaving out clusters that involve the notoriously misbehaving [v] and [s]), and some varieties of Serbo-Croatian actually show prothetic vowels (or even prothetic consonants) before word-initial syllabic consonants - while no such prothetic activity is reported for Polish and Czech word-initial trapped consonants. This issue is discussed at greater length in Scheer (forth).

> mcz syllabic ʦrt (e.g. Trávníček 1935:57s,111ss,226ss, Lehr-Splawiński & Stieber 1957:97ss, Komárek 1962:60s,82,97ss,127ss, Liewehr 1933:93s,162s).

Therefore, Old Czech is the language which provides the direct opposition that we are looking for: here, syllabic consonants continue CS ʦrt, while trapped consonants appear in place of CS ʦrt. Hence trapped and syllabic consonants must have cohabitated in Old Czech. This is indeed notorious: Trubetzkoy (1939:199) for example talks about a "correlation of syllabicity" because both types of consonants actually are contrastive in Old Czech. This is guaranteed by the existence of a minimal pair: ocz syllabic držěti "to hold" (< CS ɔržati, cf. pol dzierzyć, mcz drzet) vs. ocz trapped držěti "to tremble" (< CS ɔržati, cf. pol drzeć, mcz extinct).¹⁵

Stepping back from the philological debate, thus, it appears that Western Slavic syllabic and trapped consonants owe their existence to the loss of a preceding vs. a following vowel, respectively. I take this to be quite striking a confirmation of the synchronic and diachronic evidence that comes from other languages (section 8). It also matches the conclusion of the theory-internal argument of section 9: syllabic consonants branch on the preceding, trapped consonants on the following empty (emptied) Nucleus.

11. An alternative explanation for the transparency of trapped consonants: they are obstruents

Recall from section 5 that Polish trapped consonants are transparent to voice assimilation. The standard explanation that is proposed in the work of Jerzy Rubach is to identify trapped consonants as extrasyllabic. That is, voice assimilation takes place at a derivational stage where trapped consonants are still unsyllabified: the flanking consonants are in contact at that point of the derivation and therefore regularly agree in voicing, hence showing the same behaviour as all other obstruent clusters in Polish.

Word-internal extrasyllabicity, however, is problematic in itself because of the largely consensual Peripherality Condition (e.g. Clements 1990:290,1997 Hayes 1995:57s): only objects at margins can be ignored by phonological structure-building devices, and hence be extrametrical, extraprosodic or extrasyllabic.

Let us thus examine what the solution developed in this article, i.e. a right-branching identity for trapped consonants, has to say with respect to their transparency. In fact, nothing at all: there is no particular reason why right-branching, rather than left-branching consonants should be transparent to voicing.

The transparency of trapped consonants must thus have an independent reason. The analysis developed in Scheer (2004:§268) builds on the notorious fact that trapped consonants are demoted: for some reason, they lose their status as sonorants. There is no doubt about this fact since trapped consonants, both in Czech and in Polish (<ř> and <rz>, respectively), participate in final devoicing. That is, they have voiced and voiceless allophones, something that is not rendered by spelling. Their underlying identity is voiced since they appear as such in intervocalic and word-initial position: <rz,ř> are voiced for example in pol rzeka, cz řeka "river" and pol mierzyć, cz měřit "to measure". In word-final position, however, Polish <rz> and Czech <ř> are voiceless: pol piekarz [pjekaʃ], cz pekař [pekař] "baker" (e.g. Palková 1997:213, Scheer 1998:53ss for Czech, Swan 2002:16 for Polish). In the same way, all Polish

¹⁵ Note that the trapped vs. syllabic character of sonorants may be safely established by the number of peaks in Old Czech verse (e.g. Komárek 1962:82, Liewehr 1933:94). For example, syllabic držěti "to hold" (< CS ɔržati) counts for 3 syllables in typical 8-peak Old Czech Alexandrine verse (to jmě drzal takým kmenem, Kat. verse 24), while trapped držěti "to tremble" (< CS ɔržati) weighs only 2 syllables (všecko pohanstvo drzezalo, Kat. verse 2803).

sources report that *r* in final *Cr#* clusters is actually devoiced¹⁶: Biedrzycki (1978:83s) for example renders this critical phonetic detail, transcribing *myśl*, *wiatr* "thought NOMsg, wind NOMsg" as [miç̥], [vjatr̥]. Gussmann (1992) also consistently transcribes devoiced sonorants in this position: *wiatr*, *Piotrka*, *mętrka* "wind NOMsg, Peter dim GENsg, wiseacre GENsg" appear as [vjatr̥], [pjotr̥ka], [mętr̥ka]. Finally, Montreuil (1999:541ss) provides concordant evidence from an unrelated Romance language, Romansch, where trapped sonorants are also demoted to obstruents and hence "transparent" to voicing.

As everywhere else in the world, real sonorants do not devoice word-finally in languages with final devoicing. Hence, it is inaccurate to talk about trapped sonorants. The trapped items at hand *were* sonorants before they became trapped. Trappedness seems to inevitably induce the loss of sonorancy. The alternative explanation for the transparency of trapped consonants, then, is obvious: *CrC* and *Cr#* sequences where *r* is trapped are made *only* of obstruents; obstruent clusters, as everywhere else in Polish, agree in voicing, and there is nothing more to say.

12. Conclusion

I have tried to do three things in this article. First, to establish trapped consonants as a basic phonological object in its own right: trapped consonants are not some sub-variety of syllabic consonants. Rather, they stand on a par with them. Confusion of both categories is commonplace in the literature. However, taking trapped consonants for some funny variety of syllabic consonants is fatal for the understanding of what is going on because both categories have opposite properties and opposite effects.

Second, I have provided a check-list regarding the behaviour of trapped and syllabic consonants. This catalogue is designed to help dispensing with much previous and current practice where the phonological identity of trapped and syllabic consonants is not derived from their phonological behaviour, but from their mere function as a vowel ("syllabic consonants sit in Nuclei"), or from impressionistic judgements of the analyst (see Bagemihl 1991 on this). My contention here, as elsewhere, is that only the phonological behaviour of a natural linguistic object can betray its identity (this is actually a core claim of Government Phonology). In the particular case at hand, I argue that the examination of the behaviour of either trapped or syllabic consonants in isolation will get us nowhere. It is only when the behaviour of both closely related cluster-building consonant types is run against each other that we can expect to discover who they are. In short, any theory that proposes an identity for syllabic consonants without knowing about, and having integrated, the evidence from 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 strive. The theory-specific part of this article is therefore nothing that should be considered a definite result. Rather, it is a first exploration of the consequences that could be

¹⁶ Even if realisations are somewhat variable. According to Rubach & Booij (1990a:441, note 14), "there is a distinction between liquids and nasals: while liquids devoice, nasals may but do not have to". Elsewhere, Rubach (1997a:558) points out that the predictions made by his analysis produce the most consistently observed voiceless result. The massive prominence of devoiced realisations also coincides with my own observation.

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 seem 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: as a matter of fact, heavy clusters can appear to the right of syllabic consonants (e.g. in Czech words such as *čtvrtek* - *čtvrtek-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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