A Janus-faced Hungarian consonant

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With respect to most members of the Hungarian consonant inventory, their assignment to manner of articulation classes is unambiguous. A /p/ is always a stop, and an /s/ is always a fricative. However, there are some consonants whose range of surface realisations straddles one (or even more than one) of the major manner divisions and whose status is therefore less obvious. In the literature, we often find debates about whether /t^{y}/[1] is a stop or an affricate, whether /j/ is a fricative (hence, an obstruent) or a glide or a liquid (hence, a sonorant), and whether [x] derives from [h] or vice versa. In this paper, we are going to consider the status of /v/, a consonant which intuitively appears to occupy the no man's land between the two large classes of obstruents and sonorants. Its phonetic realisations form a continuous range of smooth transitions from a thoroughbred fricative with a lot of noise of friction to a weak and noiseless approximant; and its phonological behaviour resembles that of a proper obstruent in some contexts and conforms to that of a sonorant in others (with a wide band of underdetermined occurrences in between). We are going to review some ways that have been proposed in the literature to come to grips with this peculiar state of affairs and we will sketch a new account that, we submit, comes closest (so far) to a satisfactory solution. But first, let us summarise the relevant data.

It is common knowledge that, in Hungarian, adjacent obstruents must agree in terms of voicing. Of word initial consonant clusters, those that do not contain a sonorant are always voiceless throughout as in (1a); even irregular initial clusters tend to conform to this pattern, see (1b):

(1) a. *sport* [šp] 'sports', *stég* [št] 'landing-stage', *skála* [šk] 'scale', *szpáhi* [sp] 'Turkish cavalryman', *sztár* [st] 'leading man/lady', *sztyeppe* [st^{y}] 'prairie in Russia', *szkíta* [sk] 'Scythian'
b. *pszichés* [ps] 'psyche', *xilofon* [ks] 'xylophone', *szfinx* [sf] 'sphinx'

There is a single set of (apparent) counterexamples to this generalisation: in words like *tviszt* [tv] 'twist (the dance)', *kvarc* [kv] 'quartz', *szvit* [sv] 'suite', *svung* [šv] 'momentum', we find a voiceless obstruent followed by (what is traditionally classified as) a voiced fricative.

Other morpheme-internal (intervocalic or morpheme-final) obstruent clusters are either all-voiceless as in (2a–b) or else all-voiced as in (2c–d):

(2) a. *pitypang* [t^{y}p] 'dandelion', *puszpáng* [sp] 'boxwood', *ráspoly* [šp] 'file'; *szeptember* [pt] 'September', *bukta* [kt] 'sweet roll', *kaftán* [ft] 'Turkish coat', *asztal* [st] 'table', *este* [št] 'evening'; *kesztyű* [st^{y}] 'glove', *bástya* [št^{y}] 'bastion'; *sapka* [pk] 'cap', *patkó* [tk] 'horseshoe', *butykos* [t^{y}k] 'pitcher', *dafke* [fk] 'obstinacy', *deszka* [sk] 'plank', *táska* [šk] 'bag', *kocka* [t^{s}k] 'cube', *bocskor* [čk] 'moccasin'; *klopfol* [pf] 'beat (steak)', *bukfenc* [kf] 'somersault', *aszfalt* [sf] 'asphalt', *násfa* [šf] 'lavaliere'; *kapszula* [ps] 'capsule', *buksza* [ks] 'purse'; *tepsi* [pš] 'frying-pan', *taksál* [kš] 'estimate'; *nátha* [th] 'cold *n*'; *kapca* [pt^{s}] 'foot clout', *vakcina* [kt^{s}] 'vaccine'; *kapcsol* [pč] 'link *v*'

b. *kopt* [pt] 'Coptic', *akt* [kt] 'nude', *szaft* [ft] 'gravy', *liszt* [st] 'flour', *test* [št] 'body', *jacht* [xt] 'yacht'; *maszk* [sk] 'mask', *barack* [t^{s}k] 'apricot'; *copf* [pf] 'plaited hair'; *gipsz* [ps] 'gypsum', *koksz* [ks] 'coke'; *taps* [pš] 'applause', *voks* [kš] 'vote *n*'; also in place names like *Apc, Detk, Batyk, Recsk, Szakcs, Paks, etc.*

c. *rögbi* [gb] 'rugby football', *azbeszt* [zb] 'asbestos'; *labda* [bd] 'ball', *Magda* [gd] ⟨a name⟩, *bovden* [vd] 'Bowden cable', *gazdag* [zd] 'rich', *rozsda* [žd] 'rust'; *mezsgye* [žd^{y}] 'ridge'; *izgul* [zg] 'be excited', *pezsgő* [žg] 'champagne'; *kobzos* [bz] 'minstrel', *madzag* [dz] 'string', *lagzi* [gz] 'wedding'; *habzsol* [bž] 'devour'

d. *smaragd* [gd] 'emerald', *kezd* [zd] 'begin', *pünkösd* [žd] 'Whitsun', *kedv* [dv] 'temper', *edz* [dz] 'train *v*'

Again, it is /v/-final combinations that defy this regularity: in intervocalic clusters, /v/ occurs indiscriminately after both voiced and voiceless obstruents:

(3) a. *udvar* [dv] 'yard', *fegyver* [d^{y}v] 'weapon', *özvegy* [zv] 'widow'

b. *pitvar* [tv] 'porch', *akvárium* [kv] 'fishbowl', *köszvény* [sv] 'gout', *ösvény* [šv] 'path'

Loanwords that originally contained an obstruent cluster of heterogeneous voicing (or happen to have a spelling suggesting one) automatically get adjusted to this pattern:

(4) a. *abszolút* [ps] 'absolute', *obstruens* [pš] 'obstruent', *abcúg* [pt^{s}] 'down with him!', *abház* [ph] 'Abkhaz', *Buddha* [th], *joghurt* [kh] 'yoghurt'

b. *futball* [db] 'football', *Macbeth* [gb], *matchbox* [ǰb] 'toy car', *Updike* [bd], *anekdota* [gd] 'anecdote', *afgán* [vg] 'Afghan'
c. *rottweiler* [tv] 'a breed of dogs', *Pickwick* [kv], *Ruszwurm* [sv]

In suffixed forms, stem-final voiceless obstruents get voiced if the suffix begins with a voiced obstruent (5a) and vice versa: stem-final voiced obstruents get voiceless if the suffix begins with a voiceless obstruent (5b):

(5) a. *kalap-ban* [bː] 'in (a) hat', *kút-ban* [db] 'in (a) well', *fütty-ben* [dʸb] 'in (a) whistle', *zsák-ban* [gb] 'in (a) sack', *széf-ben* [vb] 'in (a) safe', *rész-ben* [zb] 'in part', *lakás-ban* [žb] 'in (a) flat', *ketrec-ben* [dᶻb] 'in (a) cage', *Bécs-ben* [ǰb] 'in Vienna'
b. *rab-tól* [pt] 'from (a) prisoner', *kád-tól* [tː] 'from (a) bath-tub', *ágy-tól* [tʸt] 'from (a) bed', *meleg-től* [kt] 'from the heat', *szív-től* [ft] 'from (a) heart', *víz-től* [st] 'from water', *garázstól* [št] 'from (a) garage', *bridzstől* [čt] 'from bridge (the card game)'

This assimilation process is regressive and (right-to-left) iterative:

(6) *liszt-ből* [stb] → [sdb] → [zdb] 'from flour'
pünkösd-től [ždt] → [ždt] → [štt] (→ [št]) 'from Whitsun'

It also applies across a compound boundary (*rabszolga* [ps] 'slave', lit. 'captive-servant'), across a word boundary (*nagy kalap* [tʸk] 'large hat') and indeed across any higher boundary as long as no pause intervenes; furthermore, as the examples in (4a–b) show, the rule applies—at least in the nativisation of loanwords—in non-derived environments as well, hence it is postlexical (but obligatory and non-rate-dependent).

Sonorants do not participate in the process: they do not voice a preceding obstruent (7a) and they do not get devoiced by a following voiceless obstruent (7b):

(7) a. *kalapnak* 'to (a) hat', *kútnak* 'to (a) well', *füttynek* 'to (a) whistle', *zsáknak* 'to (a) sack', *széfnek* 'to (a) safe', *résznek* 'to (a) part', *másnak* 'to sg else', *lécnek* 'to (a) lath', *csúcsnak* 'to (a) peak'
b. *szemtől* 'from (an) eye', *bűntől* 'from (a) sin', *toronytól* 'from (a) tower', *faltól* 'from (a) wall', *őrtől* 'from a guard', *szájtól* 'from (a) mouth'

There are two segments that behave asymmetrically with respect to this process. One is /v/ that undergoes devoicing (*szívtől* [ft] 'from (a) heart') but does not trigger voicing (*hatvan* *[dv] 'sixty'). The other one is /h/ that

triggers devoicing (*adhat* [th] 'he may give') but does not undergo voicing before an obstruent. Before turning to the topic of the present paper, the problem of /v/, let us briefly consider the case of /h/.

The usual solution for the asymmetrical behaviour of /h/ with respect to voice assimilation is to characterise /h/ as [−cons] (this is quite appropriate phonetically as long as [+cons] is defined as 'constriction in the oral cavity at least equal to that found in fricatives') and restrict the input of voice assimilation to [+cons, −son] segments. However, the glottal allophone of /h/ does not occur preconsonantally; what does occur is its velar allophone [x] (*cf.* Siptár 1995 : 96–99). It is this [x] that resists voice assimilation (*e.g., pechből* [xb], *[ɣb] 'out of bad luck') but then it cannot be claimed to be [−cons]. Several possibilities suggest themselves at this point, none of them very satisfactory. One would be to order the rule /h/ → [x] after voice assimilation, such that *h*-strengthening counterfeeds voicing. (Both rules being postlexical, this ordering would have to be based on stipulation.) Apart from the general current dislike for rule-ordering solutions, this is rather counterintuitive. Another solution would be not to restrict voice assimilation to [+cons] segments and let /h/ undergo it (in principle, at least). Zsigri (1994) suggests to (do that and yet) exempt [x] from undergoing the rule by introducing the notion of "phonetic quotations". He points out that voiceless obstruents that are clearly non-Hungarian do not get voiced: *Bath-ba* [θb], *[ðb] 'to Bath', as if they were "encapsulated" or surrounded by "quotation marks". He then claims that all Hungarian [x]-final lexical items are exactly like this example in that they refuse to be affected by Hungarian phonological rules (in particular, voice assimilation). This suggestion would be perfectly all right if [x]-final items were few and all of them were clearly non-native. However, this is obviously far from being the case (*cf.* Siptár 1995 : 67–69). We are therefore left with the brute force solution of stipulating an ad hoc filter to the effect that *[ɣ] is disallowed in Hungarian surface representations (or representations at any level, for that matter). This allows us to have our cake and eat it: simplify the rule of voice assimilation (by omitting [+cons] which, without rule ordering, would be useless anyway) but keep our grammar from generating *[ɣ].

Returning to the issue of /v/ now, Vago (1980)'s classical solution (couched in SPE terms) is to specify /v/ as a sonorant consonant (on a par with liquids, as far as major class features are concerned). This move successfully eliminates /v/ from the environment of the rule of voice assimilation; but makes it disappear from the input as well. Therefore, Vago has to state the devoicing of /v/ in a separate rule. He further assumes that, once it is devoiced, this segment automatically switches from sonorant to

obstruent status via the redundancy rule that specifies all [−voice] segments as [−son]. Using SPE conventions for collapsing rules, Vago (1980 : 35) formulates voice assimilation (including the devoicing of /v/) as follows:

$$(8)\quad \left\{ \begin{bmatrix} -\text{son} \end{bmatrix} \atop \begin{bmatrix} +\text{cons} \\ -\text{cor} \\ +\text{cont} \end{bmatrix} \right\} \rightarrow [\alpha\text{voice}] \,/\, \_\_ \,(\#) \begin{bmatrix} -\text{son} \\ \alpha\text{voice} \end{bmatrix}$$

A further argument in favour of this solution is that it explains the phonotactic oddity of /v/ noted above (immediately below (1)): if /v/ is [+son], it is not at all surprising that it occurs in initial clusters as in *tviszt* 'twist', *kvart* 'fourth (in music)', *szvetter* 'sweater', *svéd* 'Swedish', *cf. tréfa* 'joke', *klassz* 'superb', *szleng* 'slang', *srác* 'kid' (for a detailed treatment of Hungarian phonotactics, *cf.* Törkenczy 1994 and references cited there).

However, the phonotactic evidence is not as unambiguous as it might seem. In word-final clusters /v/ patterns with obstruents: it occurs after sonorants in such clusters (*ellenszenv* 'dislike', *könyv* 'book', *érv* 'argument', *elv* 'principle', *ölyv* [jv] 'hawk'), *cf. nemz* 'beget', *vonz* 'attract', *torz* 'distorted', *rajz* 'drawing', whereas liquids never occur after nasals or other liquids (except *l* which occurs very marginally after the other two liquids: *fájl* 'file', *görl* 'chorus-girl'; post-consonantal final *j* is invariably represented by one of its fricative allophones, *cf.* Siptár 1995 : 36–38). It also occurs in final *-dv* clusters, *e.g., kedv* 'disposition', *üdv* 'salvation'; this constitutes a violation of Sonority Sequencing in any case but the violation is less severe if /v/ is a fricative (an obstruent) than if it is a sonorant. (Note that final obstruent+sonorant consonant clusters are absolutely impossible in Hungarian whereas stop+fricative clusters are not unprecedented, although quite infrequent, *cf. copf* [pf] 'plaited hair', *gipsz* [ps] 'gypsum', *taps* [pš] 'applause', *koksz* [ks] 'coke', *voks* [kš] 'vote *n*'; *edz* [dz] 'train *v*'. This is the sense in which *-dv* clusters may be said to violate Sonority Sequencing less drastically on the assumption that their /v/ is an obstruent.)

In nonbranching onsets/codas both voiced fricatives and liquids occur practically unrestricted; hence such positions do not offer any evidence as to the status of /v/'s occurring in them (except, crucially, codas followed by a voiceless obstruent where voiced fricatives undergo voice assimilation whereas liquids do not: as we saw above, /v/ patterns with obstruents in this case, too).

In sum, a /v/ occurring in an onset (be it branching or nonbranching) behaves as a sonorant (this is manifest in branching onsets and in onsets preceded by a voiceless obstruent but remains latent in nonbranching onsets preceded by a voiced obstruent, a sonorant consonant, a vowel, or nothing, *cf.* the examples in (9a), listed in this order), whereas a /v/ occurring in a coda (be it branching or nonbranching) behaves as an obstruent (again, this is manifest in branching codas and in codas followed by a voiceless obstruent but remains latent in nonbranching codas followed by a voiced obstruent, a sonorant, or nothing, *cf.* the examples in (9b)).

(9) a. *kvarc* 'quartz', *pitvar* 'porch';
medve 'bear', *olvas* 'read', *kova* 'flint', *vér* 'blood'
b. *terv* 'plan', *hívsz* [fs] 'you call', *óvtam* [ft] 'I protected';
révbe 'to port', *bóvli* 'junk', *sav* 'acid'

Phonetically, the degree of friction seems to correspond nicely to the pattern presented here: forms in (9b) tend to exhibit more noisiness than forms in (9a); in fact, the first line of (9a) may be the least fricatival, the first line of (9b) the most fricatival—obviously so for the voice-assimilated cases—, while the second lines in each group are in between these two extremes. There are two minor hitches, however.

One of these concerns postconsonantal nonbranching onsets (as in *medve)* where /v/ is realised as a rather strong (noisy) fricative if the preceding coda consonant is a labial stop: *lopva* 'stealthily', *dobva* 'throwing', yet it behaves phonologically as a sonorant (note the lack of voice assimilation in *lopva).* The other problem concerns (exceptional) branching onsets whose first member is /v/, as in *Wrangler* [vr-]. Again, the /v/ is realised as a fricative in this position. Although this example can be dismissed as exceptional, it appears that there is a pattern here. Consider the parallel case of the (equally exceptional) initial cluster in *Hradzsin* [xr-] 'the castle in Prague'. Although /h/ is clearly represented by a glottal glide [h] in onsets and by a velar fricative [x] in codas, in the first position of a word-initial cluster it is the latter allophone that crops up. We are going to return to both these discrepancies (*lopva* and *Wrangler)* after the following discussion of the overall pattern as exemplified in (9).

There are various ways to account for this distribution.

First, we could claim that there are two distinct underlying segments involved here: an obstruent whose occurrence is restricted to codas and a sonorant whose occurrence is restricted to onsets. However, given that this is a classic case of complementary distribution (with sufficient

"phonetic similarity") and that completely automatic alternation is observable wherever a given /v/ switches from coda to onset status (compare the data in (9b) with *tervez* 'plan *v*', *hívok* 'I call', *óvott* 'he protected', *révén* 'by means of', and *savas* 'acidic', respectively), this is not a particularly insightful solution.

Second, we could take all instances of /v/ to be sonorants underlyingly and derive the obstruent where we have to. Vago's solution alluded to above is an implicit version of this idea. Olsson (1992) offers a more direct implementation: he also takes /v/ to be a sonorant underlyingly (actually, he classifies it as a glide rather than a liquid, but this is irrelevant here) but posits a rule of 'Structural *v*-strengthening' where the term 'structural' refers to the fact that /v/ is not supposed to actually change into something else (*viz.,* an obstruent) but just behave 'as if' it were [−son] before a consonant or pause. The technical solution is unorthodox but the idea is worth pursuing: we could introduce a rule of *v*-obstruentisation that changes [+son] into [−son] either where this is strictly necessary (*i.e.,* in C__# and before a voiceless consonant) or in all positions where sonorant status is not essential (*i.e.,* everywhere except in C__V) or else, the golden mean, simply in coda position.

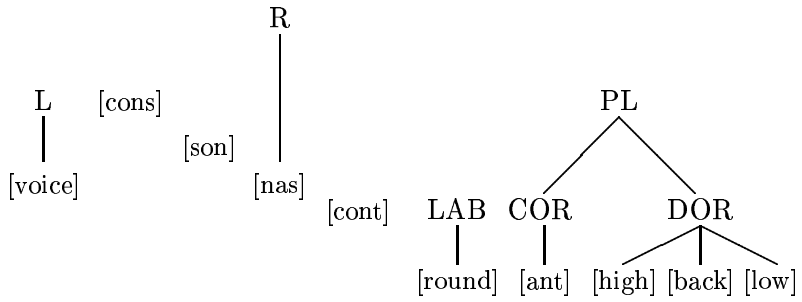
Conversely, we could take all /v/'s to be obstruents underlyingly and derive the sonorant where we have to. The traditional account (claiming that /v/ is a voiced fricative that exceptionally fails to trigger voice assimilation) is an implicit version of this idea, the converse of Vago's solution in a way. Olsson's suggestion could also be tried in reverse: by positing a rule of 'Structural *v*-weakening' that specifies /v/ as 'behaving like' a sonorant before a vowel. Or else a straightforward rule of *v*-sonorisation might actually turn a /v/ into a sonorant either in C__V position or, more generally, in an onset.

All of the above solutions involve feature-changing operations and, with their abundance, exemplify the excessive power of SPE-like frameworks.[2] The solution we are going to propose here utilises a bit of all but is crucially based on underspecification. We will assume that /v/ is underlyingly neither a fricative ([−son, +voice]) nor a liquid ([+son, −nas]) but neutral—in that it is unspecified for [son] but lacks a laryngeal node (like, *ex hypothesi,* all sonorants do). If voice assimilation is not featurally but configurationally defined (meaning that it is restricted not to [−son] segments but to segments having a laryngeal node; the rule will then delink the laryngeal node of the target and spread that of the trigger onto it, see below), this solves the trigger problem (or rather, non-trigger problem) automatically. To solve the target problem, /v/ will be assumed to undergo a

context-dependent redundancy rule that inserts a laryngeal node without any specification for [voice] in coda position. In the phonetic implementation module, then, all onset /v/'s (that still lack a laryngeal node) plus all non-voice-assimilated coda /v/'s (that have a laryngeal node but no specification for [voice]) will be specified as [+voice] by the same default rule that spells out all sonorants (none of which have laryngeal specifications up to that point) as [+voice].

Let us spell out the solution sketched in the preceding paragraph in more detail. The feature geometry we assume here is based on that proposed by Sagey (1986) and is given in (10):

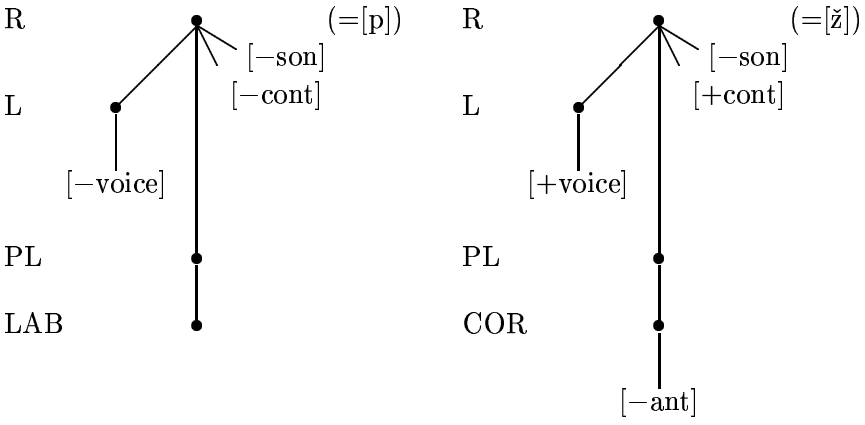
(10)



(where R=root node, L=laryngeal node, PL=place node; and the articulator nodes are LAB(ial), COR(onal) and DOR(sal); the features [round], [high], [back] and [low] are inactive (redundant) for consonants).

For instance, /p/ and /ž/ are geometrically represented as follows:

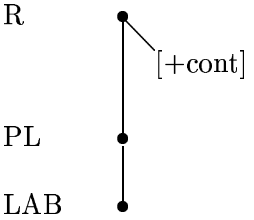
(11)



(For simplicity, [+cons] will be suppressed in this paper; it is to be understood as being attached to the root node in all representations to follow.)

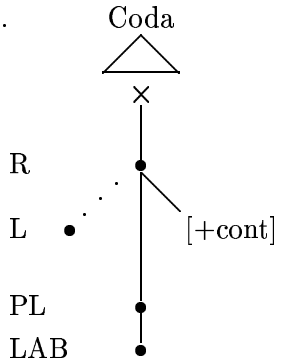
In terms of this system, then, the solution sketched above will run as follows. The segment /v/ has the following underspecified underlying representation:

(12)

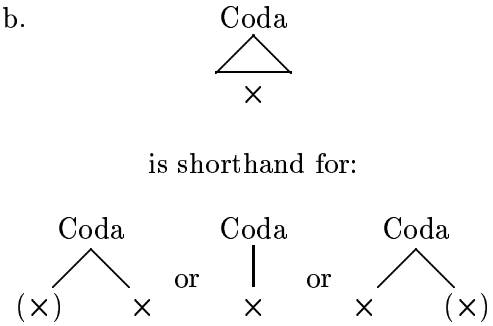


In coda contexts, this underlying segment is assigned a laryngeal node by a rule of *v*-obstruentisation as in (13a), where the notational convention explained in (13b) is used:

(13) a.

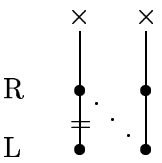


b.

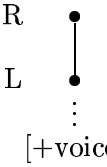


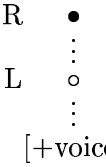
The rule of voice assimilation is formulated as in (14); this applies to all obstruents which satisfy its structural description underlyingly, as well as to coda /v/'s that satisfy it via (13a).

(14)



In the phonetic implementation module, then, a rule of default voice assignment of the form [ ] → [+voice] applies; with respect to non-assimilated coda /v/'s this has the effect shown in (15a); with respect to onset /v/'s, as well as vowels and sonorant consonants (nasal and liquids), it entails the general well-formedness convention that creates an L node that these types of segments still lack at this point, as in (15b):

(15) a. 

b. 

Consider some sample derivations that exemplify the machinery developed so far:

(16)	*pitvar*	*kova*	*terv*	*óvtam*	*révbe*
(12)	✓	✓	✓	✓	✓
(13a)	—	—	✓	✓	✓
(14)	—	—	—	✓	✓
(15)	✓	✓	✓	—	—

The ticks mean that the given representation is valid or the given process applies. In other words, the /v/'s of all representative examples in (16) as indeed all /v/'s are underlyingly represented as in (12). Coda /v/'s as in *terv, óvtam,* and *révbe* undergo *v*-obstruentisation (13a). Next, *óvtam* and *révbe* both undergo voice assimilation (14) that spreads the L of /t/ onto the /v/ in *óvtam,* making it [−voice], *i.e.,* an [f], and the L of /b/ onto the /v/ in *révbe,* making it [+voice], *i.e.,* an obstruent [v]. Crucially, however, (14) fails to apply in *pitvar* since the /v/ of this form has no L node to spread; the forms *kova* and *terv* also fail to exhibit the input configuration that (14) requires. Finally, (15a) supplies the missing voice specification of *terv* (resulting in a voiced obstruent [v]) and (15b) supplies those of *pitvar* and *kova* (these two will surface with approximant [ʊ]'s). As any word final voiced obstruent, the [v] of *terv* may subsequently get partly or wholly devoiced in a phrase final (prepausal) position, but this is beside the point here.

Let us briefly return to the two minor problems mentioned above (*lopva* and *Wrangler).* Our rules as developed so far would predict both to come out with approximant [ʊ]'s but what we find phonetically is that they contain proper voiced fricatives with quite strong noise. Notice that it would not do to turn these into obstruents in a way parallel to (13a) since both behave as sonorants with respect to voice assimilation (*i.e.,* the [p] of *lopva* and the [t] of *két Wrangler* 'two pairs of Wrangler jeans' do not get voiced). But note also that we assumed underlying /v/'s to be unspecified for [son]. This specification might be held responsible for the presence *vs.* absence of fricative noise in [z] or [ž] *vs.* [n] or [l] (as well as in [j] as in *kérj* 'ask-IMP' *vs.* [j] as in *kéj* 'pleasure'). We will assume that the default

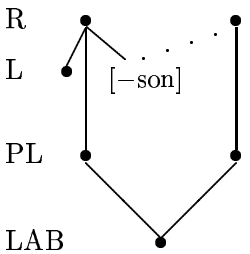
value for [son] is '+' if the segment lacks an L node and '−' if the segment has one. Thus, the [v] in *terv* or *révbe* will be [−son] whereas the [ʊ] in *pitvar* or *kova* will be [+son] by default. However, an optional (style/rate dependent) rule may specify any surface voiced labiodental continuant as [v] rather than [ʊ], *i.e.,* a fricative rather than an approximant. It is perhaps this optional process that is sharpened into an obligatory switch of status in our two cases: after a labial stop and in the left branch of a branching onset. Thus, we propose the following rules:

(17) a. sonorancy spell-out

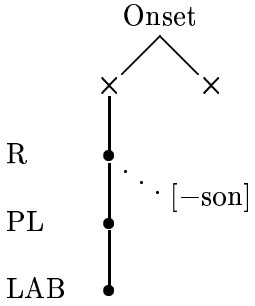
(i) R
L . . . [−son]

(ii) [ ] → [+son]

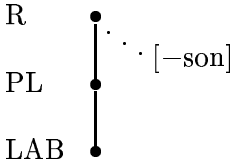
b. postlabial *v*-strengthening:



c. left-branch *v*-strengthening:



d. optional *v*-strengthening:



Given that the three *v*-strengthening rules in (17) do not assign an L node but rather specify the value of [son], they do not have to be crucially ordered after voice assimilation (14) in order to prevent the latter's over-application to these cases. On the other hand, all three will be automatically ordered before (17aii) as they are more specific and the structural changes are incompatible. Consider the sample derivations in (18):

(18)	*lopva*	*Wrangler*	*kova*	*terv*
(12)	✓	✓	✓	✓
(13a)	—	—	—	✓
(17b)	✓	—	—	—
(17c)	—	✓	—	—
(17d)	—	—	✓/—	—
(14)	—	—	—	—
(15)	✓	✓	✓	✓
(17ai)	—	—	—	✓
(17aii)	—	—	—/✓	—

Thus, the /v/ of *lopva* is underlyingly as in (12); (13a) does not apply as the /v/ is in onset position; (17b) applies as the /v/ is preceded by /p/; (17c) does not apply as the /v/ is not part of a branching onset; (17d) does not apply as the /v/ is not unspecified for [son] any more; (14) does not apply as the /v/ does not have an L node until (15b) creates one to mediate between the R node and the [+voice] that (15b) inserts; and finally, neither part of (17a) applies since the [v] is now specified as [−son]. The derivation of *Wrangler* is quite similar except that it is (17c) rather than (17b) that is responsible for the fricative character of its [v]. In the case of *kova,* optional *v*-strengthening (17d) may or may not apply; if it does, sonorancy spell-out (17aii) has nothing more to do; whereas if it does not, approximant [ʊ] will surface via (17aii). Finally, the derivation of *terv* goes as in (16), supplemented by (17ai) that specifies its [v] as [−son].

To conclude, we have proposed an account of the peculiar behaviour of /v/ with respect to voice assimilation and phonotactics. The main features of our account are that (i) voice assimilation is configurationally defined in that it refers to consonants with an L node (rather than [−son] segments) both as the source of spreading and as its target; (ii) underlying /v/ is intermediate between sonorants and obstruents in that it is not specified as [−son] but has no L node either; (iii) in the postlexical component, a /v/ that is located in a syllable coda (*e.g., hívtam* 'I called him') is assigned an L node so that it may undergo voice assimilation but a /v/ that is located in a syllable onset (*e.g., hatvan* 'sixty') remains unspecified for laryngeal features until the phonetic implementation module (where sonorants receive their default value for voicing); and (iv) surface noisiness is not completely parallel with the segment's obstruent-like phonological behaviour; we proposed that the former be represented by [−son] and the

latter be represented by the presence of an L node. Thus, a particular instance of [v] can be phonetically a fricative but behave phonologically as a sonorant: the [v] in *lopva* 'stealthily' is an example of this. In general, however, there is a fairly good correlation between the phonetic realisation and phonological behaviour of /v/'s: approximant [ʋ] occurs in onsets and does not trigger voice assimilation, whereas fricative [v] occurs (mostly) in codas and undergoes voice assimilation wherever an appropriate trigger follows.

NOTES

[1] The chart below summarises the non-IPA transcription symbols used in this paper as well as the relevant idiosyncratic consonant graphemes of Hungarian:

our symbol	**IPA**	**standard H orthography**
s	s	*sz*
š	ʃ	*s*
ž	ʒ	*zs*
č	ʧ	*cs*
ǰ	ʤ	*dzs*
t^s	t͡s	*c*
t^y	c	*ty*
d^y	ɟ	*gy*

In geminate digraphs only the first member is doubled, *e.g.*, [sː]=*ssz*.

[2] Two further suggestions should be quoted here from the literature. Both try to capture the intermediate character of /v/ directly, without reference to position-bound variation, phonotactic considerations, or surface implementation. As a technical account of the half-hearted participation of /v/ in voice assimilation, both solutions work; but both entail a rather unconstrained theory of distinctive features.

Barkaï & Horvath (1978 : 83) posit a seven-valued [son] feature, corresponding to their version of the Sonority Hierarchy, as follows:

(i)	stops	fricatives	v	nasals	j	r	l
	1	2	3	4	5	6	7

Their rule of voice assimilation refers to these index values directly:

(ii) $[m\,\text{sonorant}] \rightarrow [\alpha\,\text{voice}] \,/\_\_\, (\#) \begin{bmatrix} n\,\text{sonorant} \\ \alpha\,\text{voice} \end{bmatrix}$

where $m \leq 3$, and $n \leq 2$

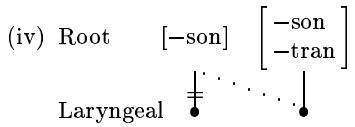
Zsigri (1994), on the other hand, introduces a new (binary) distinctive feature, [±transient], that has positive value for nonnasal sonorants and /v/ (the latter being [−son]); thus:

(iii)

	obstruents	v	nasals	liquids/glides
[son]	−	−	+	+
[tran]	−	+	−	+

His rule then runs as follows (note that sonorants — and /v/ — do *not* lack a laryngeal node in this account):

(iv)



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