HUNGARIAN YOD

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Abstract

This paper argues that the segment /j/ in Hungarian is neither a fricative (as traditionally claimed) nor a glide (as it is usually classified in the international literature). The arguments adduced involve syllabification patterns, processes of *j*-obstruentisation, phonetic details of hiatus resolution, as well as phonotactic phenomena. Additional problems that are touched upon include the question whether Hungarian has diphthongs, the behaviour of /j/ with respect to vowel ∼ zero alternation, voicing assimilation and final devoicing, the analysis of imperative forms of *t*-final verbs, as well as the relationship between the Duke of York gambit and the principle of Proper Inclusion Precedence.

1. Introduction

In this squib, we will discuss the phonological status, representation, and behaviour of the Hungarian phonological segment /j/ (henceforward, 'yod'). The traditional definition, still widely assumed in Hungary, says that yod is a "palatal voiced fricative" in this language (see, for instance, Kassai 1998, 130). In that definition, the term 'palatal' is to be understood as usual; however, 'voiced' and 'fricative' both deserve a short digression in this context.

If by 'voiced' we simply mean segments during the articulation of which the vocal cords are vibrating, then the usual phonetic realisation of yod, as occurs e.g., in *jó* 'good', is undoubtedly voiced, just like those of /aː/, /m/, or /b/. But this simple interpretation of what 'voiced' means is not quite adequate either in (articulatory) phonetic, or (especially) in phonological terms. As it is now widely known, a given laryngeal configuration can produce either vibration or no vibration of vocal cords, depending on a number of factors (see Hayes 1984 and the literature cited there). In particular, it is possible for the same laryngeal configuration to produce 'voicelessness' (lack of vocal cord vibration) in obstruents, but 'voicing' (vocal cord vibration) in sonorants, owing to the difference in pressure drop across the glottis in the two cases. Therefore, a simple

articulation-based phonological definition of voicing will give us different results than a simple acoustics-based phonological definition will (with sonorants taking sides with voiceless obsturents in the first, but with voiced obstruents in the second, case).[1] In other words, whether sonorants count as 'voiced' or 'voiceless' depends on whether an acoustic or an articulatory definition is chosen; and that choice, in turn, depends on phonological considerations in any particular language.

Phonologically speaking, then, in Hungarian at least (but also in a number of other languages), vocal cord vibration in sonorants and that in voiced obstruents are two entirely different things. In Hungarian, (nearly) all obstruents come in voiced/voiceless pairs; and since the members of those pairs are in phonological opposition with each other, this property of theirs (i.e., whether they are voiced or voiceless) is a phonologically relevant one. On the other hand, **all** sonorants are produced with vocal cord vibration, but in their case this phonetic property (just because of that fact) is phonologically irrelevant. We could say that the category of voicing is simply not interpretable for sonorants (including vowels): they are neither voiced nor voiceless in this sense.[2] The only remaining issue to decide is whether yod, in Hungarian, is a sonorant or an obstruent—since, strictly speaking, it can only be defined as 'voiced' in the latter case.

Turning to "fricative", if this term is interpreted as an equivalent of the traditional Hungarian term *réshang*, it cross-classifies the obstruent/sonorant dichotomy (see e.g., Kassai 1998, 112–9; Szilágyi 2000, 26–46). Along with segments that would be fricatives on any interpretation, it further includes yod ("central palatal fricative") and even /l/ ("lateral dental fricative"). However, if we wish to restrict the term "fricative" to a subclass of obstruents (as is usual in the literature, cf. Siptár 1994, 199–201 for discussion), the question we are faced with reduces to "Is Hungarian yod a fricative in this narrower sense, too?". In other words, we are back where we were at the end of the previous paragraph: is yod a sonorant, or is it an obstruent?

Phonetically, yod (in most positions, e.g., in *jó* [joː] 'good', *hajó* [hɔjoː] 'ship', *haj* [hɔj] 'hair'; *rajta* [rɔjtɔ] 'on it', *rakja* [rɔkjɔ] 'puts it')

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[1] For details and discussion, see Halle–Stevens (1971); Hayes (1984); Durand (1990, 54–7); Durand–Siptár (1997, 54–6), and further references cited there.

[2] On some phonological consequences of this, cf. Hayes (1984); Lombardi (1995a;b). A description of the Hungarian consonant system in these terms can be found e.g., in Siptár (2003, 320–48).

is a palatal approximant since no friction is produced when it is articulated. It is only in a single type of cases where a proper fricative is found: postconsonantally, in word final position (before a pause or another consonant). Here, if the preceding consonant is voiceless,[3] a voiceless (fortis) palatal fricative ([ç]) is pronounced: *kapj* [kɔpç] 'get (imp)', *rakj* [rɔkç] 'put (imp)', *döfj* [døfç] 'stab (imp)'; if the preceding consonant is voiced, a lenis palatal fricative ([ʝ]) occurs. This fricative is fully voiced if a consonant-initial word follows (except where the following consonant is a voiceless obstruent: voice assimilation applies to the whole word-final cluster in this case: *vágj ki* [kçk] 'cut out (imp)'); before pause, [ʝ] loses much of its voicing due to a very general and very late (possibly non-language-specific) process but does not become fortis: *férj* [feːrʝ] 'husband', *szomj* [somʝ] 'thirst', *dobj* [dobʝ] 'throw (imp)'.[4]

Thus, it is phonetically quite unjustified to call the usual variety of yod (*jó* 'good', *hajó* 'ship', *haj* 'hair'; *rajta* 'on it', *rakja* 'puts it') a fricative. But perhaps, phonologically, this segment nevertheless behaves as an obstruent? If that were the case, its phonetic nature that usually (i.e., in almost all cases) contradicts that behaviour would not be a decisive factor since, as we have just seen, fricative variants can also be found (even if in a rather restricted range of cases). But yod cannot be an obstruent in phonological terms either; if it were, it should participate in voice assimilation. In fact, however—except for the case just mentioned where it is obstruentised first and then becomes [ç] either through progressive voice assimilation as in *kapj* etc. or through the general rule of (regressive) voice assimilation as in *vágj ki* etc.—this segment neither undergoes nor triggers voice assimilation (cf. *ajtó* [ɔjtoː], *[ɔçtoː] 'door'; *fáklya* [faːkjɔ], *[faːgjɔ] 'torch').

But if yod is not a fricative, what is it? The major subclasses of sonorants are nasals, liquids, and glides (semivowels). Given that yod is obviously not a nasal, there are three possibilities: either open a new class for them within sonorants (call it "approximants", say), or take it to be a liquid, or take it to be a glide. All three solutions have been proposed in the literature.

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[3] Except where its effect is overridden by that of a subsequent voiced obstruent as in *lépj be* [leːbjbɛ] 'step in (imp)', cf. section **4**.

[4] For more details, see Siptár (2003, 335–8); Siptár–Törkenczy (2000, 205–6); and further below (section **4**). Cf. also Kassai (1996) for some phonetic background and an attempted historical explanation.

The option involving a new category has been taken in Dressler–
Siptár (1989, 44), on the grounds that there is no general phonetic or
phonological reason to classify yod as belonging to the natural class con-
taining /l/ and /r/ (we will see that this claim is not supported by the
facts; cf. also Dressler–Siptár 1998, 51). Another account where yod is
claimed to be an approximant (as a separate phonological category) is
given by Szende (1992); cf. also Cser–Szende (2002).[5] It is classified as
a liquid e.g., in Nádasdy–Siptár (1989, 15–6); Siptár (1993; 1994; 1995;
2001); and that will be argued here, too, to be the best option. However,
in an overwhelming majority of the relevant literature (e.g., Vago 1980;
Olsson 1992; and all current element-based accounts, cf. Ritter 2000;
Szigetvári 1998; 2001, as well as the copious literature referred to there)
yod is claimed to be a glide (semivowel).

2. Diphthongs?

Now if yod is a glide, the first issue that presents itself is this: Are
there diphthongs in (Standard) Hungarian? The offhand answer to that
question is "No, of course not." Yet, it has been suggested (see Kylstra–
de Graaf 1980; Kylstra 1984) that the initial portions of e.g., **ajtó** 'door'
and **autó** 'car' should both be analysed as diphthongs (the case of *au* will
be ignored here). That claim was argued against by Kassai (1982; 1984),
the really important counter-arguments, in my view, are as follows (some
of them are based on Kassai's arguments; for more details, see Siptár
1994, 172–4, 200; Siptár–Törkenczy 2000, 16–8).

First of all, we have to make a distinction between phonetic and
phonological diphthongs. The former undoubtedly do occur in Hungar-
ian speech: the issue is whether they are to be interpreted as diphthongs
(branching nuclei) in phonological terms as well. Briefly, the following
arguments can be adduced against this conclusion: (i) yod occurs before
and after practically all Hungarian vowels, be they short or long, hence
there would be roughly twice as many diphthongs involving yod in this
language as there are vowels; (ii) Hungarian "diphthongs" never alter-
nate with short monophthongs (and even variation of the type *ilymódon*
[ijmoːdon] ∼ [iːmoːdon] 'in this way' is not monophthongisation proper
but yod-drop with compensatory lengthening); (iii) the definite article *a*

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[5] Unless both of the other two solutions turn out to be untenable in what follows,
   Occam's razor suggests that this is the least preferable option of the three.

∼ *az* 'the' occurs before *jV*-initial words (e.g., *játék* 'toy') as *a*, rather than *az*, that is, such words begin with a consonant rather than with a rising diphthong; (iv) similarly, given that the initial consonant of the suffix *-val/-vel* 'with' gets assimilated to stem final consonants but appears as [v] after vowel-final stems (cf. *láb-bal* [laːbːɔl], *[laːbvɔl] 'with foot' vs. *szó-val* [soːvɔl], *[soːɔl] 'with a word'), the fact that e.g., 'with butter' is *vajjal* [vɔjːɔl] rather than **vajval* [vɔjvɔl] suggests that yod is a consonant; (v) and finally, the mere fact that yod can occur long as in *vajjal* [vɔjːɔl] 'with butter' is in itself enough to render any kind of diphthong interpretation impossible.[6]

But these arguments against the interpretation of yod as the non-head constituent of a diphthong do not exclude its being a glide in onset/coda position. The facts that there are no cooccurrence restrictions between a yod and a following/preceding vowel or that there are no diphthong/monophthong alternations are quite reconcilable with the view (going back to Szépe 1969) that yod is a glide. Furthermore, the fact that *jV*-initial words select the 'preconsonantal' allomorph of the definite article does not necessarily entail that yod should be consonantal: actually, *hV*-initial words select the same alternant and /h/ is (usually analysed as) [− cons]. Hence, this allomorph of the definite article is more properly called 'pre-onset'. Similarly, forms like *vajjal* 'with butter', although they constitute evidence against a branching nucleus interpretation, have nothing to say about the feature content of yod as long as it occupies the coda (or, if long, a coda and a subsequent onset).

Nevertheless, I wish to maintain the claim that Hungarian yod is not a glide ([− cons, + son]) but a liquid ([+ cons, − son]). Part of the reason resides in the fricative allophones I mentioned above; these are technically easier to derive if yod is [+ cons] to begin with. But the claim that yod is not simply 'the vowel melody /i/ occurring in a nonnuclear syllable position' (= a glide) can be supported by empirical evidence, too.

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[6] András Cser (p.c.) points out to me that an alternative account that explains the long occurrence of yod but is not an argument against the existence of diphthongs would be to assume that e.g., *vaj* 'butter' contains a diphthong in the nucleus plus a yod in the coda (the latter being geminated in a form like *vajjal* 'with butter'). He adds that a similar (similarly ambiguous) situation obtains in Ancient Greek. However, whether we assume a diphthong in *vaj* or not, the existence of yod (as distinct from part of a diphthong) is not made superfluous on this account, and that is what matters here.

3. Syllabification

Part of this evidence concerns syllabification. On the assumption that syllable structure is assigned in the course of derivation rather than listed in the lexicon,[7] the minimal pairs and near-minimal pairs in (1) cannot be properly syllabified if the vowel /i/ and yod are melodically identical.[8]

(1) mágia [maː.gi.^{j}ɔ] 'magic'$_N$ vs.   máglya [maːg.jɔ] 'stake'
     ion   [i.^{j}on]   'id.'   vs.   jön   [jøn]   'come'
     fiú   [fi.^{j}uː] 'boy'   vs.   fjord [fjord]   'id.'

As can be seen from the examples, prevocalic i/j (i.e., a putatively uniform underlying segment that may surface either as a vowel or as yod depending on the syllabic position it finds itself in) will be syllabified either as another nucleus or as an onset: the choice is more or less arbitrary.[9] With postvocalic i/j, we find a similar—or even higher—degree of arbitrariness (concerning whether it will be a nucleus or a coda):

(2) laikus [lɔ.^{j}i.kuʃ] 'layman'   vs.   pajkos [pɔj.koʃ] 'naughty'
     fáit   [faː.^{j}it]   'his trees (acc)' vs. fájt   [faːjt]   'it hurt (past)'
     női   [nøː.^{j}i]   'feminine'   vs.   nőj   [nøːj]   'grow (imp)'

Since there are suffixes consisting of a sole -*i* and the imperative marker consists of a sole -*j*, it is easy to construct examples in which post-consonantal word final /i/ and yod contrast; also, both segments constituting a morpheme in themselves in these cases, it cannot even be claimed that different position in terms of morphological boundaries should be the reason for the different syllabification, cf. *kéri* 'ask (3sg def)' vs. *kérj* 'ask (imp)', *fali* 'wall (adj)' vs. *falj* 'devour (imp)', *Mari* 'Mary (dim)' vs. *marj* 'bite (imp)'. Pairs like *síel* [ʃiːjɛl] 'ski$_V$' vs. *milyen* [mijɛn] 'what kind' and *leír* [lɛ^{j}iːr] 'write down' vs. *tejig* [tɛjig] 'to milk' indicate that an i/j associated to two timing slots can be syllabified as either a branching

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[7] Of course, in any framework where syllable structure is lexically given, this argument becomes invalid.

[8] In the examples, syllable boundaries are indicated by '.' and superscript [^{j}] stands for an epenthetic yod that resolves a hiatus. For hiatus resolution by yod-epenthesis, see section **5** below.

[9] Although it must be admitted that *jön* and *fiú* are the expected patterns as opposed to *ion* and *fjord*—i.e., word initially, if another possible onset consonant is not present, the i/j will be an onset rather than a nucleus, whereas if there is such a consonant, the i/j will be nucleus rather than onset—the word medial cases like *mágia* vs. *máglya* are strictly unpredictable.

nucleus or a nucleus plus an onset, respectively an onset plus a nucleus. Finally, the nouns *íj* [iːj] 'bow', *díj* [diːj] 'prize', *szíj* [siːj] 'strap' would contain the common melody of *i/j* associated to **three** timing slots and multiple ambiguity would arise as to how to syllabify them: *íj* could in principle be *[jiː], *[jij], *[iji], or [ijː] as well (the last version actually does occur as an alternative pronunciation for *íj* 'bow'). All these complications are avoided if the vowel /i/ and yod are segmentally represented in two different manners.

Further considerations supporting the conclusion that yod is consonantal (i.e., a liquid) include processes in which yod acts as a (consonantal) trigger, e.g., *l*-palatalisation as in *alja* [ɔjːɔ] 'its bottom' (see Siptár–Törkenczy 2000, 178–82), or as a (consonantal) target, e.g., *j*-assimilation as in *moss* [moʃː] (< *mos + j*) 'wash (imp)', cf. Vago (1980, 36); Siptár (1994, 254–5); Zsigri (1997); Siptár–Törkenczy (2000, 185), or *j*-obstruentisation (see Siptár–Törkenczy 2000, 186–7, 205–6; Siptár 2003, 335–8) that we now turn to.

4. Obstruentisation

Hungarian has two *j*-obstruentisation rules: a lexical and a postlexical one. The former plays a role in the derivation of imperative forms of *t*-final verbs. Classical generative tradition has it (ever since Szépe 1969; for a full discussion of the relevant analysis, see Vago 1980) that such forms involve a kind of palatalisation process whereby stem-final /t/ gets palatalised into [ʃ], respectively [tʃ], followed by full assimilation of the yod of the imperative morpheme to that [ʃ] or [tʃ], as well as to underlying stem-final sibilants (thus, *üt* 'beat' /yt/ + /j/ → yʃ + j → [yʃː], *tanít* 'teach' /tɔniːt/ + /j/ → tɔniːtʃ + j → [tɔniːtʃː]; cf. *mos* 'wash' /moʃ/ + /j/ → [moʃː], *hoz* 'bring' /hoz/ + /j/ → [hozː]). This analysis can be restated in autosegmental terms as well (see Siptár 1994, 252–5). However, in Siptár–Törkenczy (2000, 183–8), a different analysis has been proposed in which it is the yod that is affected first: it changes into [ʃ] (this is the first *j*-obstruentisation rule of the two mentioned earlier in this paragraph); what subsequently happens in cases of the *taníts* 'teach (imp)' type is due to an independently motivated affrication rule, one that also applies in e.g., *hátsó* 'rear' /t/ + /ʃ/ → [tʃː]. That new analysis is superior to the old one in a number of respects, though it must be admitted that it requires a separate *t*-assimilation rule in the *üt*-type cases (thus, /yt/ + /j/ → yt + ʃ → [yʃː]).

The *j*-obstruentisation rule itself that the previous paragraph hinges upon is a kind of progressive voicing assimilation: it says that between a /t/ and a morpheme boundary[10] yod turns into a voiceless palatal fricative. Technically, the rule has to do nothing but change the [+ son] of the yod into [− son], i.e., obstruentise the yod. As we saw above, sonorants are not specified as voiced—hence, if you do nothing to a sonorant but turn it into an obstruent, it will automatically come out as a **voiceless** obstruent. But why is it that the output of the rule will be [ʃ], rather than [ç]? The reason is that the rule at hand is subject to the principle of Structure Preservation in that it is unable to produce a segment type that is not a member of the underlying (lexical) segment inventory of the language. Therefore, the actual output will be the segment type that is phonetically closest to [ç] but **is** a member of the underlying inventory of Hungarian, that is, [ʃ].[11] However, that principle is no longer in force in the postlexical component; therefore, if a similar rule (or the same rule) turned the yod into a voiceless obstruent postlexically, its output would be [ç], not [ʃ].

Is there such a rule in Hungarian? Yes, there is: it is the other *j*-obstruentisation rule referred to above. Earlier on in this paper, that rule has already been mentioned in passing: it is the obstruentisation of the yod of word-final *Cj* clusters. The most often quoted case—*lopj* [pç] 'steal (imp)', *rakj* [kç] 'put (imp)', *döfj* [fç] 'stab (imp)'—appears to be quite simple. All we seem to need is a generalised postlexical counterpart of the rule discussed in the previous paragraph, i.e., a rule along the lines sketched in (3) and we get the devoicing effect for free: /j/, being a sonorant, has no voicing specification; turn it into an obstruent without adding one and you end up with a **voiceless** obstruent.

(3) $/j/ \rightarrow [-\,\text{son}] \big/ \text{C} \underline{\quad}]_W$

However, the issue is rather more complex than that.

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[10] There is, of course, another morpheme boundary **between** the stem-final *t* and the suffixal yod; but that boundary need not be mentioned in the rule since morpheme internal /tj/ sequences do not occur in Hungarian. On the other hand, the morpheme boundary **after** the yod has to be mentioned in order to exclude all other cases in which a suffix **begins with** yod (as opposed to the present case in which the suffix **consists of** a yod).

[11] For details on how this is technically done, cf. Siptár – Törkenczy (2000, 186–7).

There are twelve logical possibilities in terms of context (disregarding cases where a vowel follows—in the next word—and the /j/ is realised as [j]). These are displayed in (4). The columns stand for right context, the rows for left context.[12]

(4)

	SONORANT	VOICED OBSTRUENT	VOICELESS OBSTRUENT	NOTHING
SONORANT	ʝ ∼ ∅	ʝ ∼ ∅	ç ∼ ∅	ʝ
VOICED OBSTRUENT	ʝ ∼ ∅	ʝ ∼ ∅	ç ∼ ∅	ʝ
VOICELESS OBSTRUENT	ç ∼ ∅	ʝ ∼ ∅	ç ∼ ∅	ç

One possibility for each case except the last column (i.e., if anything follows) is to have the reflex of yod deleted (e.g., *nyomj le* [ɲomlɛ], *nyomj be* [ɲombɛ], *nyomj ki* [ɲomki], *dobj le* [doblɛ], *dobj be* [dobːɛ], *dobj ki* [dopki], *lépj le* [leːplɛ], *lépj be* [leːbːɛ], *lépj ki* [leːpki]). This applies in fast/casual speech and does not bear on the analysis of the rest of the possibilities.

The three cases in which we get [ʝ] before a voiced obstruent (*nyomj be* [ɲomjbɛ], *dobj be* [dobjbɛ], *lépj be* [leːbjbɛ]), could involve the usual rule of voicing assimilation assuming, as above, that the yod is simply obstruentised first. The five cases in which [ç] is produced before a voiceless obstruent, before a sonorant, or utterance finally (*nyomj ki* [ɲomçki], *dobj ki* [dopçki], *lépj ki* [leːpçki], respectively *lépj le* [leːpçlɛ], *lépj* [leːpç]), could be analysed with no additional process, simply as suggested in the previous paragraph. However, in the remaining cases we have to account for the voiced realisation of the palatal fricative. In *dobj* [dobʝ] and *dobj le* [dobʝlɛ], we could, if pressed, assume **rightward** voice assimilation, but in cases of the *nyomj* [ɲomʝ] and *nyomj le* [ɲomʝlɛ] type even this unusual assumption would not help. Therefore, we have to give up the simple idea sketched above and conclude that the yod is not merely obstruentised: it is turned into a **voiced** obstruent.

The voiced fricative thus obtained behaves **almost** exactly like any voiced fricative does: it gets devoiced before a voiceless obstruent (*nyomj ki* [ɲomçki], *dobj ki* [dopçki], *lépj ki* [leːpçki]), and remains unaffected (or is deleted) in most other cases (*nyomj le* [ɲomʝlɛ] ∼ [ɲomlɛ], *nyomj*

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[12] Examples, going across the table (all verbs are 2sg imperative): *nyomj le* 'push down', *nyomj be* 'push in', *nyomj ki* 'push out', *nyomj* 'push'; *dobj le* 'throw down', *dobj be* 'throw in', *dobj ki* 'throw out', *dobj* 'throw'; *lépj le* 'step down', *lépj be* 'step in', *lépj ki* 'step out', *lépj* 'step'.

be [ɲomjbɛ] ~ [ɲombɛ], *nyomj* [ɲomj]; *dobj le* [dobjlɛ] ~ [doblɛ], *dobj be* [dobjbɛ] ~ [dobːɛ], *dobj* [dobj]; *lépj be* [leːbjbɛ] ~ [leːbːɛ]). But there are two cases (*lépj le* [leːpçlɛ]*, lépj* [leːpç]) where we need an extra rule to remove the voicing specification that the obstruentisation rule has just supplied. On the other hand, the devoicing rule required may be a rather general one: first, in addition to the *lépj le* and *lépj* cases that directly motivate its introduction, it can be made to cover the *lépj ki* and *lépj be* type cases as well, i.e., it need not say anything about the right context; and second, it does not have to be restricted to yod: it can simply say that all word final voiced fricatives be devoiced if preceded by a voiceless segment. Consider these two properties of the rule more in detail.

What happens if that devoicing rule applies to the yod of *lépj ki* and *lépj be*, too? In the *lépj ki* type case, it does not really matter if this rule or the general rule of voice assimilation applies: whether it is the preceding [p] or the following [k] that causes the devoicing of the yod, the result is [leːpçki] in either case and the other rule has no more chance to apply (they are in what is called a mutual bleeding relationship). But in the *lépj be* type case, even though the result will be unique again ([leːbjbɛ]), we get that result in two different ways depending on which of the two rules is considered for application first. If we apply the word final devoicing rule first, the derivation proceeds like this, with two iterations of voicing assimilation: [leːpjbɛ] → [leːpçbɛ] → [leːpjbɛ] → [leːbjbɛ] (feeding order). On the other hand, if voicing assimilation is applied first, the [j] voices the /p/, and the final result is arrived at in a single step, thus: [leːpjbɛ] → [leːbjbɛ] (the word final devoicing rule has no chance to apply: bleeding order). It would appear that the latter assumption makes more sense as it does not involve "the Duke of York gambit" (Pullum 1976). But appearances are deceptive: there are as many as two good reasons for us to choose the former, apparently more complicated procedure.

First: actually, we have no choice at all. The principle of Proper Inclusion Precedence makes the choice a forced one. A classical formulation of that principle runs as follows:

(5) PROPER INCLUSION PRECEDENCE

> For any representation R, which meets the structural description of each of two rules A and B, A takes applicational precedence over B with respect to R if and only if the structural description of A properly includes the structural description of B.[13]   (Koutsoudas et al. 1974, 8)

In our case, rule A (the more specific rule) is word final devoicing and rule B (the more general rule) is voicing assimilation. The structural description of our rule A is "a word final sequence of voiceless obstruent plus voiced fricative"; that of our rule B (in the case at hand) is "a sequence of voiceless obstruent plus voiced obstruent". The two bits of the structural description of rule A that are "left over" are *word final* and *fricative* (as opposed to any obstruent). Note that the presence of the rule of final devoicing in our grammar would be totally superfluous if voicing assimilation turned all [pj], [kj], [fj] sequences into [bj], [gj], [vj] **before** devoicing had a chance to apply: in that case, final devoicing would have absolutely **no** input to operate on at all.

Secondly, and on the empirical side: although in the case of *lépj be* and *lépj ki* there is no difference between the two orders in terms of the final output, in cases like *lépj le* and *lépj*, on the contrary, it becomes vital that the two rules be applied in the correct order as dictated by the principle of Proper Inclusion Precedence. If the general rule of voicing assimilation was to be applied first, the result would be *[leːbjlɛ] and *[leːbj], respectively, wherefrom we could by no means make our way to the correct final output.

Let us now consider the other property of the word final devoicing rule: the property that it does not have to mention yod specifically but may apply indiscriminately to any word final voiceless obstruent + voiced fricative sequence. The reason is simple: such sequences do not occur elsewhere in the language.

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[13] "The structural description of a rule B is PROPERLY INCLUDED in the structural description of a rule A if and only if the structural description of B can be placed upon the structural description of A with some part of the structural description of A left over" (Koutsoudas et al. 1974, 9). As the authors additionally point out, (i) "the structural description of any rule of the form $X \rightarrow Y \ / \ W \underline{\quad} Z \ [\ldots]$ is the symbol string WXZ and not merely X"; (ii) "the proposed precedence principle subsumes as a special case the familiar ordering of a context-sensitive rule before its corresponding context-free 'elsewhere' rule"; (iii) "if a structural description X properly includes a structural description Y, then the set of representations which meet structural description X is properly included in the set of representations that meet structural description Y" (ibid.).

Morpheme internal obstruent clusters are always homogeneous in terms of voicing (they are either voiceless or voiced throughout, cf. Siptár –Törkenczy 2000, 76–8); and the only single-consonant suffix that is a voiced obstruent (and is able, therefore, to yield a word final voiceless + voiced obstruent sequence if added to a stem ending in a voiceless consonant) is -*d* as in *rakd* [rɔgd] 'put it (imp)'. Specifying the target of word final devoicing as a [+ cont] obstruent—i.e., a fricative—is enough to exclude -*d* as possible input to this rule; having escaped devoicing, the -*d* then causes voicing of the stem final voiceless obstruent as usual.

5. Hiatus

Another argument supporting the claim that yod is a liquid, rather than a glide, can be based on the phenomenon of hiatus resolution (cf. Nádasdy– Siptár 1994, 174–5; Siptár–Törkenczy 2000, 282–6; Siptár 2002a;b). Some languages resolve each and every hiatus (or do not make it possible for hiatuses to come about in the first place; or else get rid of them in some other way, notably, by vowel deletion of various sorts: cf. Casali 1997), whereas others, like Hungarian, exhibit both resolved and unresolved hiatuses (e.g., *dió* [diʲoː] 'walnut', *tea* [tɛɔ] ∼ %[tɛʲɔ] 'tea', *fáraó* [faːrɔoː] ∼ *[faːrɔʲoː] 'pharaoh' (where % identifies a form that is not accepted by all—in the present case, by most—Hungarian speakers, whereas * identifies one that no native speaker of that language accepts as correct).

What determines which hiatus is resolved and which one is not? The presence vs. absence of morpheme boundary or even word boundary plays no role (cf. *kiált* [kiʲaːlt] 'shout', *kiállít* [kiʲaːlit] 'exhibit, lit. out-stand-caus', *ki áll itt* [kiʲaːlitː] 'who's standing here', all three with hiatus resolution, as opposed to *Bea* [bɛɔ] ⟨a first name⟩, *beadom* [bɛɔdom] 'I hand it in, lit. in-give-1sg.def', *be a dómba* [bɛɔdoːmbɔ] 'into the cathe-dral' all without). What matters is the quality of the two vowels involved: if one or both is/are either /i/ or /iː/, resolution is obligatory; if one or both is/are /eː/, resolution is optional; in all other cases (i.e., if both vowels are either low or rounded or both) there is no resolution: more exactly, no spreading of the melody of an adjacent /i/ or /iː/, or of part of the melody of an adjacent /eː/, to the empty onset position takes place since there is no such melody present on either side).

The fact that makes this phenomenon relevant to our present purposes is that the intrusive yod-like sound that resolves hiatus is (or may be) weaker, more transitional, than the implementation of an underlying yod. Compare pairs of forms like those in (6): the difference indicated is clearly observable in guarded speech—although it may be blurred in more colloquial renderings.

(6) *kiáll* [kiʲaːl] 'stand out' vs. *kijár* [kijaːr] 'go out (repeatedly)'

baltái [bɔltaːʲi] 'his hatchets' vs. *altáji* [ɔltaːji] 'Altaic'

kávé után [kaːveːʲutaːn] 'after coffee' vs.

kávé jut ám [kaːveːjutaːm] 'there will be coffee'

If we now assume that yod is a liquid (as we have been trying to prove) whereas the inserted element involved in hiatus resolution is obviously a glide (on the spreading account referred to above, it cannot be anything else), this potential phonetic difference is explained in a simple and elegant manner.

6. Conclusion

Thus, we have a number of good reasons to think that yod is a liquid, just like /l/ and /r/. This conclusion makes it easier to account for processes in which these three consonants behave in a uniform manner. Such processes include optional nasal assimilation (as in *olyan lassú* [ojɔlːɔʃːu] 'so slow', *olyan rossz* [ojɔrːosː] 'so bad', *olyan jó* [ojɔjːoː] 'so good', cf. Siptár–Törkenczy 2000, 209–10), and liquid deletion (with compensatory lengthening if the vowel involved is originally short, see ibid. 212–3), a process that is also optional, or rather rate- and register-dependent. It is true that the latter process does not apply to the three liquids with equal ease, but this does not prevent us from saying that it is basically the same process. Of the three liquids, the one that gets deleted the most easily is /l/, e.g., *balra* %[bɔːrɔ] 'to the left', *elvisz* %[ɛːvis] 'carry away', *el kell menni* %[ɛːkɛːmɛnːi] 'one must go away'. The deletion of /r/, e.g., *egyszer csak* %[ɛtsːɛːʧɔk] 'suddenly', is usually restricted to casual speech, although it occurs even in formal situations in the items *arra* [ɔːrɔ] 'that way', *erre* [ɛːrɛ] 'this way', *merre* [mɛːrɛ] 'which way'. Finally, yod gets deleted the most readily after (high or mid) front vowels as in *gyűjt* [ɟyːt] 'collect', *szíjra* [siːrɔ] 'strap-onto', *mélység* [meːʃeːg] 'abyss', *éjszaka*

[eːsɔkɔ] 'night'. But despite these minor asymmetries, the three liquids can be seen as behaving as a class with respect to this process, too.[14]

However, one empirical argument has been adduced in the literature against the claim that Hungarian /l r j/ constitute a single natural class, that of liquids (Dressler–Siptár 1989, 44). It is based on vowel epenthesis in *Cl*- and *Cr*-final stems. For instance, stems like /lepl/, /pokl/, /baːtr/, /ʃøpr/ occur with an inserted vowel word finally and before a consonant (*lepel* 'shroud', *pokol* 'hell', *bátor* 'brave', *söpör* 'sweep'), whereas in *kapj* [kɔpç] 'get (imp)', *rakj* [rɔkç] 'put (imp)', etc. such epenthesis does not take place.[15]

But that counter-argument is not a particularly compelling one, for two reasons. First, it is not true that there are no epenthetic *Cj*-final stems, cf. /bɔgj/ *bagoly* 'owl', /fogj/ *fogoly* 'partridge'.[16] Secondly, most /rk/, /lk/, /sk/, /tk/, /tʃk/, /tsk/-final stems exhibit epenthesis (e.g., *árok* 'ditch', *telek* 'plot of land', *piszok* 'dirt', *retek* 'radish', *csücsök* 'tip', *vacok* 'den'), whereas /rt/, /lt/, /st/, /ʃt/, /kt/, /tt/-final ones do not (e.g., *kert* 'garden', *pult* 'counter', *koszt* 'food', *rest* 'lazy', *akt* 'nude', *ott* 'there')—yet no one would wish to claim that /k/ and /t/ belong to two distinct classes of the consonant inventory (apart from place of articulation). Similarly, the above difference between the behaviour of /l r/ and /j/ can be attributed to a number of other factors (place of articulation being perhaps the most straightforward choice), whereas their unitary classification as liquids can be maintained. Therefore, the contrast between *lepel* 'shroud' vs. *lepj* (*lepej) 'overlay (imp)' is not a legitimate argument against the uniform classification of /l r j/ proposed here.

All in all: Hungarian yod is neither a fricative, nor a glide: it is a liquid.

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[14] Further evidence (dialectal and historical) for the claim that /l r j/ exhibit parallel behaviour in a number of respects is provided by Lőrinczy (1972).

[15] It is to be noted that the whole issue of vowel ∼ zero alternation in Hungarian is now analysed in a completely different manner (cf. Törkenczy–Siptár 1999; 2001); but this does not bear on the validity of the argument in the text.

[16] In final *Cj* clusters that surface without an epenthetic vowel, either the *C* must be a sonorant (cf. *szomj* 'thirst') or the *j* must be the imperative marker (cf. *fogj* 'grab (imp)' vs. *fogoly* 'partridge'). Note that the fact that yod is spelt either *ly* or *j* (in these examples, and in Hungarian in general) does not bear on the issue; it is a mere coincidence—at least synchronically speaking—that epenthetic *bagoly, fogoly* are spelt with *ly* whereas non-epenthetic *szomj, fogj* are spelt with the letter *j*.

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