Lund University, Dept. of Linguistics
Working Papers 35 (1989), 133-147

Hungarian Glide Rules and Consonant System

Magnus Olsson

1. INTRODUCTION

Firstly, in section 2, I give the Hungarian glide rules, i.e. rules describing the rises, changes and specifications of glide allophones. The only exception is a palatalization rule that has, however, a certain importance for the alternation *h* ~ *x*. The scrutiny of allophones and allophony creating rules continues in section 3 with nasal assimilations, after which the Hungarian consonant system is presented.

2. THE HUNGARIAN GLIDE RULES

2.1 Glide rules involving voice

If the imperative-conjunctive suffix *j* in word-final position directly appends to a verbal stem with final consonant *p*, *f* or *k*, it is devoiced, as in e.g: *lopj* [lɔpj̥] 'steal!', *döfj* [dœfj̥] 'stab!' and *csukj* [ʧukj̥] 'shut!'. As the three consonants are the only voiceless segments occurring before the suffix at this point in the derivation, Vago 1980:34 offers the following natural rule to account for the alternation:

(1) *j*-voicing assimilation

$$\begin{bmatrix} -\text{syll} \\ -\text{cons} \\ +\text{high} \\ -\text{back} \end{bmatrix} \rightarrow [-\text{voice}] \,/\, [-\text{voice}] \_\_ \#$$

(Word-final /j/ is devoiced following a voiceless segment.)

Vago's next rule describes the voicing of another glide:

(2) *h*-voicing assimilation

$$\begin{bmatrix}\text{-voc}\\ \text{-cons}\\ \text{-high}\end{bmatrix} \rightarrow [+\text{voice}] \,/\, [+\text{voice}] \_\_ [+\text{voice}]$$

(/h/ becomes voiced between voiced segments.)

The glide /h/ becomes voiced *ɦ* intervocally – as in *fehér* [fæɦe:r] 'white' – and following a sonorant – as in *konyha* [kɔɲɦɒ] 'kitchen'. Between a voiceless consonant and a vowel, /h/ is voiceless *h* – as in *göthös* 'weak-chested' – and likewise in word-initial position – *három had* [h ... mh] 'three armies' – and after an obstruent – *Nagyhind* [ch] '<place in Czechoslovakia>'. Voicing assimilation – where *h* devoices the obstruent – ought to precede (2). It would be possible to write a simpler devoicing rule for /h/ instead:

(3) *h*-devoicing

$$\begin{bmatrix}\text{-voc}\\ \text{-cons}\\ \text{+lar}\end{bmatrix} \rightarrow [\text{-voice}] \,/\, [\text{-voice}] \_\_$$

(/h/ becomes devoiced after a voiceless segment or a pause.)

In this rule, I make use of the non-segmental view of distinctive features earlier advocated in e.g. Olsson 1987c. The specification [-voice] before the context dash therefore embraces both pauses and segments. It is evident that rules (1) and (3) may be combined into a more general devoicing rule:

(4) Glide devoicing

$$\begin{bmatrix}\text{-voc}\\ \text{-cons}\\ \text{-ant}\\ \langle\text{+high}\rangle\end{bmatrix} \rightarrow [\text{-voice}] \,/\, [\text{-voice}] \_\_ \langle[\text{-voice}]\rangle$$

(/h/ is devoiced after voicelessness and /j/ is devoiced surrounded by voicelessness.)

The phoneme /j/ occurs, except in the imperative-conjunctive suffix, only with at least one neighbouring vowel. As I (Olsson 1989) specify prevocalic

/v/ as a glide and /v/ is voiced in all positions – even e.g. initially: *váll* 'shoulder' – it must be stated that the anterior glide is not affected.

The analysis *ɦ* → *h* should be rejected since rules (1) and (2) can be combined in a much more satisfying way than (1) and (3). The rule can be stated as follows:

(5) Glide voicing assimilation

$$\begin{bmatrix}\text{-cons}\\ \text{-voc}\end{bmatrix} \rightarrow [\alpha\text{voice}] \,/\, [\alpha\text{voice}] \_\_ [\alpha\text{voice}]$$

(Glides assimilate in voicing to a directly surrounding, voice homogenous context.)

The phoneme /v/ does not occur within a voiceless context and the changing segment thus must not be specified as [-ant]. The problem with this rule is that Hungarian glides – *j*, *v* and *h* – behave in a certain way when being next to a consonant. Before a true consonant they cause epenthesis and, similarly, *v* is liable to voicing assimilation before an obstruent. On the other hand, there is no epenthesis before a glide and *v* does not cause a preceding obstruent to assimilate. I explain these facts in Olsson 1989 with the following rule:

(6) Glide strengthening

$$\begin{bmatrix}\text{-cons}\\ \text{-voc}\\ \langle\text{+ant}\rangle\end{bmatrix} \rightarrow \begin{bmatrix}\text{+cons}\\ \langle\text{-son}\rangle\end{bmatrix} /\_\_ \begin{bmatrix}\text{-syll}\\ \langle\text{-son}\rangle\end{bmatrix}$$

(Glides become consonantic before non-syllabic segments and, similarly, *v* becomes an obstruent before an obstruent.)

As (6) stands, it becomes troublesome to state (5). The *h* in e.g. *sahok* [ʃɒɦɔk] (</sah+k/ 'shahs') must be consonantic in order for epenthesis to take place – before it is voiced by (5). It would be quite simple to change the input in (5) – (for the sake of simplicity the *j* in *kapj* 'get!' should then be consonantic and (6) also admits this specification), but the rule is more general as it is due to the basic features in the input. With the help of the following rule, replacing (6), one may keep (5):

(7) Glide strengthening II

$$\begin{bmatrix} -\text{cons} \\ -\text{voc} \\ \langle +\text{ant}\rangle \end{bmatrix} \rightarrow \begin{bmatrix} +\text{epenthesis} \\ \langle +\text{voicing assim}\rangle \end{bmatrix} / \_\_ \begin{bmatrix} -\text{syll} \\ \langle -\text{son}\rangle \end{bmatrix}$$

(Glides cause epenthesis before non-syllabic segments, and *v* before an obstruent is liable to undergo voicing assimilation.)

Phonetic facts also speak in favour of (7), because the physical difference between epenthetic and non-epenthetic *j* seems to be ignorable, while the difference between the laryngeals and the back fricatives is pertinent enough to motivate different values for [cons].

Probably, the voiced glides are sonorants and the voiceless glides obstruents. This generalization is best formulated in a redundancy rule, since it is not confined to the allophones produced by (5):

(8) Glide sonorance

$$\begin{bmatrix} -\text{cons} \\ -\text{voc} \\ \alpha\text{voice} \end{bmatrix} \rightarrow [\alpha\text{son}]$$

(Glides assume the same value for sonorance as for voice.)

2.2 Back glide and fricative varieties

It is generally believed that *x* and other palatal and velar fricatives (hereafter: ach-sounds) are allophones of a phoneme /h/. As the ach-sounds occur in but a few morphemes, I will give different indications showing that they and the *h*-sounds belong to the same phoneme.

Typologically, two phonemes /h/ and /x/ seem to be avoided in one and the same language and the speakers seem to feel that the groups belong together. Pettersson 1979:68 ff. vindicates that the Czech [ɦ] is an allophone of [ɣ] – which it replaces in most environments. Czech also has a phoneme /x/. Czechs seem to perceive voiceless [h] in foreign languages as an ach-sound (33), because their indigenous *h*-sound is voiced initially as well, e.g: [ɦlad] 'cold, noun'. Russian and Chinese only have [x], while English and Japanese only have [h]. French and Spanish lack [h]; [x] does not exist in French, while in Spanish it is an allophone of [g]. In German, [h] and [x] are in complementary distribution. South- and West-Swedish might provide a phonological system where [h] and [x] are distinct for Elert 1970:75 says that the [ɧ]-sound in that

dialect often reminds one of [x] and [h] furthermore occurs distinctively in these dialects. There exist minimal pairs like [harm] 'anger' versus [ɧarm] 'charm'. In my view, the usual [ɧ]-sound variety in South Swedish is better described as a labiovelar fricative. However, ach-sounding varieties of the [ɧ]-sound do occur in certain areas. Summarizing, then, there seems to be a strong resistance to having two phonemes /h/ and /x/ in the same language, but the number of exemplifying languages is too small to give clear support for the assumption that the Hungarian *h*- and ach-sounds enter into the same phoneme (and there actually are languages which have both /h/ and /x/).

Phonetically, the *h*-sounds and the ach-sounds are very similar. Psycholinguistic support for the connection of the two groups in Hungarian was provided in a reading, where the informant (who almost exclusively speaks Hungarian) on her own tried to find a suitable passage from Kálmán Mikszáth's novel *A Beszterce ostroma* (The siege of Beszterce) and in fluent speech at first pronounced Don Quijote in a supposedly Spanish fashion – [dɔŋkiçɔt] – but soon changed it to [dɔŋkiɦɔt] – a pronunciation directly following from the rules if the *h*- and ach-sounds are considered as parts of the same phoneme. Evidence of the same kind was found in a Hungarian restaurant in Vienna, where a Hungarian waiter consistently used forms like [maɦen] for [maxn̥].

We note from language history that the fricative [x] changed into an *h*-sound prevocally during the 12th and 13th centuries, e.g: *ruxa* → *ruha* [ruɦɒ] 'clothing', *xarm^{u} xod^{u}* → *három had* 'three armies' (Kálmán 1972:55).

Finally, there are structural reasons for considering the two groups as varieties of one single phoneme – viz., they are in complementary distribution. The ach-sounds occur in word-final position and preconsonantically – and the *h*-sounds may never be realized in those positions. The *h*-sounds – which are never geminated – are only realized prevocally, while the ach-sounds only occur as geminates in that position.

Vago 1980:129 observes that there are about a dozen *h*-final nouns. The glide converts to Ø word-finally and before consonant-initial suffixes, while it is voiced – *ɦ* – before a vowel in the same word (in accordance with (5)). Examples are: *cseh* [ʧæ] 'Czech', with the dative and plural forms *csehnek* [ʧænæk] and *csehëk* [ʧæɦiek], and *juh* [ju] 'sheep', with *juhnak* [junɒk] and *juhok* [juɦɔk], respectively. Vago gives the following rule:

(9) *h*-deletion

$$h \rightarrow \emptyset \; / \; \_\_ \; \begin{Bmatrix} \# \\ K \end{Bmatrix}$$

With features not bound to segments, the following rule will work:

(10) *h*-deletion II

$$h \rightarrow \emptyset \; / \; \_\_ \; [-syll]$$

(*h* is deleted before consonant and pause.)

The nouns *doh* 'must' and *potroh* 'insect's abdomen' is according to Vago not liable to undergo *h*-deletion: [dɔx(nɒk)], [dɔɦɔk]; [pɔtrɔx(nɒk)], [pɔtrɔɦɔk]. Word-finally and before a consonant, /h/ is realized as *x* after a back vowel and as *ç* after a front vowel, e.g: *jacht* [jɒxt] 'yacht' and *ihlet* [ɪçlæt] 'idea, inspiration'. Vago posits the following rule for the alternation:

(11) *h*-fricative assimilation

$$\begin{bmatrix} -syll \\ -cons \\ -high \end{bmatrix} \rightarrow \begin{bmatrix} +cons \\ -low \\ +high \\ \alpha back \end{bmatrix} / \begin{bmatrix} +syll \\ \alpha back \end{bmatrix} \_\_ \begin{Bmatrix} \# \\ C \end{Bmatrix}$$

(Before # or C, /h/ becomes the velar fricative /x/ after a back vowel, and the palatal fricative /ç/ after a front vowel.)

The consonantic character of the phoneme is strengthened before consonant or pause, as in (7). The difference is that (11) works at morpheme level and (7) over the morpheme boundary. Vago thinks that a special rule is needed, where the fricative assimilates the *h*-sound in (/doh+vel/ → *dohhal* →) *dohxal* → *doxxal* 'with must' (an earlier rule assimilates the initial *v* in suffixes to the preceding consonant):

(12) *h*-assimilation

$$\begin{bmatrix} -syll \\ +cont \\ +high \\ -strid \end{bmatrix} \begin{bmatrix} -syll \\ -cons \\ -high \end{bmatrix} \rightarrow \quad 1 \quad 1$$
$$\quad 1 \qquad\quad 2$$

(/h/ becomes /x/ or /ç/ after resp. /x/ or /ç/, respectively.)

Actually, the generation /doh+vel/ → *doxval* → *doxxal* is just as possible and the rule will then only be needed to generate *pëch* [peç:] 'bad luck' from /pehh/. Otherwise, Vago must assume in his analysis an ach-phoneme besides the *h*-phoneme. Sticking to the rules, /pehh/ must, finally, get the marking [-*h*-deletion].

Abondolo 1985 assumes that the ach-variety is an underlying voiceless geminate, which is shortened by the general degemination rule when next to a consonant. E.g.: *krach* [krɒx:] 'financial collapse', *krachnak* [krɒxnɒk]. A voiced obstruent voices it according to the voicing assimilation rule: *krachba* [krɒɤbɒ], *pëchbe* [peɕbæ]. To mark voice, I use stung symbols (ɤ (= IPA ɣ), ɕ; as in certain runic alphabets), since IPA at this point is difficult to follow (for reasons of legibility).

It appears that there are a number of stems with a final long ach-sound. The consonant is always preserved prevocally: *almanach* [ɒlmɒnɒx:] '(literary etc.) year-book' and in the accusative *almanachot* [ɒlmɒnɒx:ɔt]. They would feed (12), but having two rules changing *h*-sounds into ach-sounds is not especially neat. A combination of the two rules would look as follows:

(13) *h*-consonantization

$$\begin{bmatrix} -voc \\ -cons \\ -high \end{bmatrix} \rightarrow [+cons] \; / \; \_\_ \; [-syll]$$

(Before [-syll], /h/ becomes a velar fricative.)

Rule (13) applies iteratively, making derivations like [ɒlmɒnɒhː] → [ɒlmɒnɒhx] → [ɒlmɒnɒxː]. An alternative rule would produce *h*-sounds from underlying /x/ (since *doh* and *potroh* have ach-sounds before pause – and thus block the deletion rule – we can not replace [+syll] in the context with [-cons]):

(14) *x*-deconsonantization

$$\begin{bmatrix}+\text{cons}\\+\text{back}\\+\text{cont}\end{bmatrix} \rightarrow [-\text{cons}] \,/\, \begin{bmatrix}-\text{long}\\ \text{———}\end{bmatrix} [+\text{syll}]$$

(Short /x/ becomes a glide before a vowel.)

The rule, that applies also over a morpheme boundary, is comparable in simplicity to (13). On the other hand, the ach-sounds occur in very few stems and the *h*-deletion (10) would, besides, have to be restated as a less natural deletion:

(15) *x*-deletion

$$x \rightarrow \emptyset \,/\, \_\_\, [-\text{syll}]$$

(*x* is deleted before a consonant and a pause.)

The rule does not work intra-morphemically and therefore does not affect e.g. *jacht*. I have taken from (11) the assimilation to the preceding vowel – which also affects the back stops *k* and *g*: they turn into *k'* and *g'*, respectively, in contact with a front vowel (Vago 1980:45 says that the palatalization in stops is a trivial fact, but the same would then be the case for the fricatives). The rule may be written as follows:

(16) Palatalization of back consonants

$$\begin{bmatrix}+\text{cons}\\+\text{back}\end{bmatrix} \rightarrow [-\text{back}] \,/\, \begin{bmatrix}+\text{syll}\\-\text{back}\end{bmatrix}$$

(Back consonants get fronted next to a front vowel.)

3. THE HUNGARIAN NASAL ASSIMILATIONS

The only remaining allophones all emanate out of the nasal assimilations. Underlying *m* and *n* change into a labiodental before *f* and *v*, e.g. *szenvedély* [seŋvæde:j] 'passion', *nyáron volt* [ɲa:roŋvolt] 'it was in summer', *hamvas* [hɒŋvɒʃ] 'ashy; down-soft', *nem veszélyës* [næŋvæse:jeʃ] 'not dangerous', *nem fagyott* [næŋfɒjɔt:] 'not freezing'. Vago 1980:33 gives the following rule:

(17) Labiodental assimilation

$$\begin{bmatrix}+\text{nasal}\\+\text{ant}\end{bmatrix} \rightarrow \begin{bmatrix}-\text{cor}\\-\text{distr}\end{bmatrix} \,/\, \_\_\, (\#) \begin{bmatrix}+\text{ant}\\-\text{cor}\\-\text{distr}\end{bmatrix}$$

(Bilabial /m/ and dental /n/ become labiodental /ŋ/ before labiodental /f/ and /v/.)

Underlying *n* changes into *ŋ* before the back stops, e.g. *csëng* [ʧeŋg] 'ring (verb)', *nagyon këllemës* [nɒjɔŋkelːæmeʃ] 'very comfortable', *nagyon gonosz* [nɒjɔŋgɔnɔs] 'very evil', *bankár* [bɒŋka:r] 'banker':

(18) Velar assimilation

$$\begin{bmatrix}+\text{nasal}\\+\text{cor}\end{bmatrix} \rightarrow \begin{bmatrix}-\text{ant}\\-\text{cor}\\+\text{high}\\+\text{back}\end{bmatrix} \,/\, \_\_\, (\#) \begin{bmatrix}+\text{cons}\\+\text{high}\\+\text{back}\end{bmatrix}$$

(Dental /n/ becomes velar /ŋ/ before velar /k/ and /g/.)

Vago (36), further, postulates a special rule for the change of the phoneme *n* into the phoneme *m* before bilabial *m*, *p* and *b*, as in e.g. *nagyon magas* [nɒjɔmːɒgɒʃ] 'very tall', *a samponban* [ɒʃɒmpɔmbɒ(n)] 'in the shampoo', *az oroszlánból* [ɒzɔrɔslaːmboːl] 'out of the lion':

(19) Nasal assimilation

$$\begin{bmatrix}+\text{nasal}\\+\text{ant}\end{bmatrix} \rightarrow [\,-\text{cor}\,] \,/\, \_\_\, (\#) \begin{bmatrix}+\text{ant}\\-\text{cor}\\-\text{cont}\end{bmatrix}$$

(/n/ becomes /m/ before /p b m/.)

Finally, *n* and other dental consonants are palatalized before a palatal consonant (40), e.g. *sampongyár* [ʃɒmpɔɲaːr] 'shampoo factory':

(20) Palatalization

$$\begin{bmatrix} +kor \\ -del\ rel \end{bmatrix} \rightarrow \begin{bmatrix} -ant \\ -kor \\ +high \end{bmatrix} / \_\_ (\#) \begin{bmatrix} -syll \\ -kor \\ +high \\ -back \end{bmatrix}$$

(/t d n l/ become /c ɟ ɲ j/, respectively, before /c ɟ ɲ (ʎ) j/.)

At least some of the assimilation rules apparently have to do with the same process. Rules (17) and (19) can be united in a simple way:

(21)

$$\begin{bmatrix} +nasal \\ -high \end{bmatrix} \rightarrow [\alpha place] / \_\_ [+lab]$$

(/m/ and /n/ become /ɱ/ before /f v/ and /m/ before /p b m/.)

The reason why Vago does not perform this combination is surely that he regards (17) as an allophonic rule and (19) as something completely different – a phonemic rule. I have, however, no need for this distinction. The new rule can straightforwardly be combined with (18):

(22) General nasal assimilation

$$\begin{bmatrix} +nasal \\ -high \\ \langle +lab \rangle \end{bmatrix} \rightarrow [\alpha place] / \_\_ \left\{ \begin{array}{c} \langle +lab \rangle \\ \begin{bmatrix} +high \\ -cont \end{bmatrix} \end{array} \right\}$$

(/m/ and /n/ become /ɱ/ before /f v/ and /m/ before /p b m/, and /n/ becomes /ŋ/ before /k/ and /g/.)

It may be noted that (21) covers, in addition, the assimilation of *n* in (20), which thus might be questioned (vid. Olsson 1987a:36). The clear cases of nasal assimilations are thus described by a rule (cf. Abondolo 1985:54 for less general processes).

3. THE HUNGARIAN CONSONANT SYSTEM

It is now possible to describe the Hungarian consonant system. Below is a chart of the allophones. I have (as usual) given place and manner of construction on one axis each and the values for the more basic features are explicitly given:

(23) The Hungarian consonant allophone system

-cons, -voc		v			j̟		h	}-son
					j		ɦ	}+son
+cons, -voc	m	ɱ	n		ɲ	ŋ		}+son
	p		t		k'	k		
	b		d		g'	g		
		f	s	ʃ	ç	x		}-son
			z	ʒ	ɕ	ɣ		
			ts	ʧ	c			
			dz	ʤ	ɟ			
+cons, +voc			r					}+son
			l					

Two possible phoneme analyses are presented – in the first, *h* is underlying form, while in the second analysis, *x* is underlying. The phoneme charts show fewer columns – 4 against 7 for the more finely divided allophone chart. Only labial, dental, palatoalveolar and back position have to be specified.

(24) The Hungarian consonant phoneme system I

			h
v			j
m	n		ɲ
p	t		k
b	d		g
f	s	ʃ	
	z	ʒ	
	ts	ʧ	c
	dz	ʤ	ɟ
	r		
	l		

(25) The Hungarian consonant phoneme system II

v			j
m	n		ɲ
p	t		k
b	d		g
f	s	ʃ	x
	z	ʒ	
	ts	ʧ	c
	dz	ʤ	ɟ
	r		
	l		

It is evident that the second chart gives a simpler and neater configuration. The number of rows is only 10 and underlying glides are voiced sonorants. The stops, moreover, each correspond to one voiceless fricative, the voiceless fricative row is complete and a greater symmetry arises between the labial and back columns. The simplicity criterion thus speaks in favour of underlying *x* and I therefore assume the fricative to be the underlying form. A simplification would be to reduce the liquid rows to one – where *r* ends up one step behind *l* (cf. Olsson 1987a:35). The liquid row could be united with the glide row, as these segments each occupy positions in different columns and the glides and liquids share the property of having the same value for [consonantic] as for [vocalic]. Another possibility would be to put the glides in the same row as the voiced fricatives, which they also resemble. However, the presented system is simple, agreeable and fruitful.

A merger between palatal and palatoalveolar affricates would mean a certain simplification in the phoneme system. Until quite recently (Lazar 1982:1), these sounds actually merged in Felsőőr (Oberwarten). In the csángó dialect, the place of articulation for coronal affricates and fricatives has merged (Lazar 1982:11), which reduces the number of columns in the chart.

I have not given the long consonants, as it is uncertain to what extent length is phonematic (Olsson 1987b:48). A number of generalizations can be made, though. Initially and next to a consonant, geminates do not occur. The allophones of *x* show as we have seen characteristic traits as regards length. Two consonants only occur as long in those positions where length distinction in general is possible – the rare *ʣ* and *ʤ*. Abondolo 1985:69ff. gives *edz* 'train (verb)', *pedz* 'bite (itr. verb)', *bodza* 'elder' and *madzag* 'twine' as the only cases of *ʣ* in postvocalic position. In the same context, *ʤ* is only represented in *bridzs* 'bridge', *hodzsa* 'Mohammedan priest' and *maharadzsa* 'maharajah'. Using Papp 1969 and Kiefer 1984, I looked for long intramorphemic consonants. (In principle, all consonant allophones which do not depend on an adjacent consonant occur long *inter*morphemically as the glide in the instrumental-comitative suffix *vel* goes through complete assimilation after consonant final nouns (but see Lavotha & Lavotha 1973:48 and Vago 1980:130 for *ñ*). Lotz 1939:20 gives e.g. *rizzsel* [rɪʒ:æl] (*<rizs+vel*) 'with rice'). Following is one example of each long consonant occurring underlyingly, if possible in final position (except the already mentioned *x*, *ʣ* and *ʤ*): *ujj* 'finger; toe; sleeve', *gramm* 'gram', *finn* 'Finn(ish)', *könny* 'tear', *csëpp* 'drop', *mulatt* 'mulatto', *sakk* 'chess', *több* 'more', *kedd* 'Tuesday', *segg* 'arse', *trëff* 'club (in card-playing)', *rossz* 'bad', *friss* 'fresh; cool; brisk', *hozzá* 'towards x (the

basic form of the allative – x = 3psg.)', *hëcc* 'joke; noise; hurry', *puccs* 'coup d'état', *fütty* 'whistle', *mëggy* 'morello (cherry)', *forr* 'boil', *hall* 'hear; hall'. *ʒ:* does not occur (at least in word-final position) but, like *ʣ* and *ʤ*, *ʒ* is an unusual consonant – Kálmán 1972:77f. says that they have a limited distribution in texts. The phonemes *n* and *m* have a high occurrence, but their geminates occur exclusively or mostly in loan words or spatial adverbs. Of the phonemes with medium occurrence, *z* appears rarely and *v* not at all. (We may note that *v* is short in all positions also in Swedish.)

In Nyitra (situated in the Palóc area), *h* does not assimilate – e.g. *mëghal* [gh] 'perfective particle + die' (Kálmán 1974:64). It is assumed that the voiceless *h* should be considered a sonorant in this dialect.

In different parts of Western Hungaria, Dunántúl and in the vicinity of Dés in Mezőség, *v* assimilates. As a tourist, one may thus hear spontaneous examples like *ott vannak repülők!* [dv] 'there are aeroplanes!'. Classifying *v* as an obstruent in the Western dialects solves the problem of how to describe the behaviour of the phoneme. In this case, the angled bracketed parentheses may be removed from (7):

(26) $\begin{bmatrix}\text{-cons}\\ \text{-voc}\end{bmatrix} \rightarrow$ [+epenthesis] /__ [-syll]

(Glides cause epenthesis before non-syllabic segments.)

(8) remains, but *v* has to be specified as [-son] in underlying representation. The resulting glide system becomes more symmetric:

(27) The West Hungarian glide system

-cons		j̯	h	-voice	-son
	v			+voice	
-voc		j	ɦ		+son

If *v* were consonantic in the western dialects a gap would be filled in the allophone system – but (25) would get out of balance. Lazar 1982:2 says that epenthesis at times shows up in Göcsej before the suffix *vA*, e.g. *mondova* 'saying', *tiltova* 'forbidding'. He notices on the other hand the forms *sáncoba* 'into (a) redoubt' and *partora* 'to (a) beach' – having epenthetic vowels contrary to Standard Hungarian. It is possible, then, that the epenthesis rule is more general than in the standard dialect, but if the *mondova* type can be shown to occur systematically together with assimilating *v*, one may regard *v* as a true consonant in Göcsej. In another variant of West Hungarian, (27)

seems to be in effect too. There, *v* is devoiced after voiceless obstruents. The voicing assimilation rule is then complicated, which might seem counter-intuitive. It is obvious that the glides vacillate between different underlying features and the relation to phonetics may be questionable.

4. CONCLUSION

I showed in section 2 how two voicing assimilation rules for glides may be combined and how the rest of the many allophones of /h/ can be derived from two glide rules, degemination and voicing assimilation. A special palatalization rule for back consonants closes this section. I also combined Vago's three nasal assimilation rules, hinting that the palatalization of the nasal might be derived from the nasal assimilation rule. A chart of the Hungarian consonant allophones follows. I furthermore present and choose among two phoneme sets with underlying /h/ and /x/, respectively – giving structural reasons for choosing *x* as the underlying form. Finally, some dialects with interesting phonemic sets were also examined.

REFERENCES

Abondolo, D. M. 1985. *Hungarian inflectional morphology*. Academic dissertation. Columbia University.

Elert, C. C. 1970. *Ljud och ord i svenskan*. Stockholm: Almqvist & Wiksell.

Kálmán, B. 1972. 'Hungarian historical phonology'. *The Hungarian language*, eds. L. Benkő & S. Imre, 49-83. The Hague: Mouton.

Kálmán, B. 1974. 'Zur Phonologie der ungarischen Dialekte'. *Symposion: Phonologische Analyse der uralischen Sprachen, Berlin, 17.-20. September 1974*. (1975; Linguistische Studien. Reihe A. Arbeitsberichte; 22), 156-66. Berlin: Akademie der Wissenschaften der DDR, Zentral-Institut für Sprachwissenschaft.

Kiefer, F. 1984. *Magyar-svéd szótár*. Budapest: Akadémiai kiadó.

Lavotha, Ö. & Cs. Lavotha. 1973. *Ungersk grammatik*. Lund: Almqvist & Wiksell.

Lazar, O. 1982. 'Karakteristiska drag för de åtta dialekttyperna', syllabus. Lund: Finsk-ugriska institutionen.

Lotz, J. 1939. *Das ungarische Sprachsystem*. Stockholm: Ungarisches Institut.

Olsson, M. 1987a. 'En omtolkad assimilationsregel i ungerskan'. *Finsk-ugriska småskrifter* 7, 32-6.

Olsson, M. 1987b. 'Ungersk epentes före suffix'. *Finsk-ugriska småskrifter* 7, 37-55.

Olsson, M. 1987c. 'The data behind the Elsewhere Condition', ms.

Olsson, M. 1989. 'När glidare blir konsonantiska', to be published in *Finsk-ugriska småskrifter* 8.

Papp, F. 1969. *Reverse-alphabetized dictionary of the Hungarian language*. Budapest: Akadémiai kiadó.

Pettersson, T. 1979. *Tjeckisk fonetik och fonologi*. Göteborg: GUSLAV läromedel nr 2.

Vago, R. M. 1980. *The sound pattern of Hungarian*. Washington: Georgetown University Press.