

Hungarian Problem Solution

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Directions

The following data is from Hungarian.

- 1 Posit underlying forms for all the case endings; you do not need to posit underlying form for all the stems Do not posit any allomorphs.
- 2 In order not to posit any allomorphs, you will have to posit some sound changes (phonological rules).

Data [y = IPA j]

		INF	1SGSUBJ	3SGSUBJ	1PLSUB
1.	'scold'	rooni	rooyak	rooyon	rooyunk
2.	'shoot'	lööni	lööyek	lööyön	lööyünk
3.	'obtain'	kapni	kapyak	kapyon	kapyunk
4.	'put'	tenni	tedyek	tedyen	tedyünk
5.	'carry'	vinni	vidyek	vidyen	vidyünk
6.	'ask'	keerni	keeryek	keeryen	keeryünk
7.	'dine'	ebeedelni	ebeedelyek	ebeedelyen	ebeedelyünk
8.	'lead'	vezetni	vezeffek	vezeffen	vezeffünk
9.	'listen'	hallgatni	halgaffak	halgaffon	halgaffunk
10.	'love'	seretni	sereffek	sereffon	sereffünk

Data, ctd.

		INF	1SGSUBJ	3SGSUBJ	1PLSUB
11.	'recline'	feküdni	feküdyek	feküdyön	feküdyünk
12.	'know'	tudni	tudyak	tudyon	tudyunk
13.	'perish'	vesni	vessek	vessen	vessünk
14.	'fish'	halaasni	halaassak	halaasson	halaassunk
15.	'crawl'	maasni	maassak	maasson	maasunk
16.	'cook'	föözni	föözzek	föözzön	föözünk
17.	'pull'	huuzni	huuzzak	huuzzon	huuzzunk
18.	'look at'	neezni	neezek	neezen	neezünk
19.	'wash'	mofni	moffak	moffon	moffunk
20.	'dig'	aafni	aaffak	aaffon	aaffunk

Vowel chart

Vowel pairs in the chart are written in the order [+Rounded,-Rounded]

	+FRONT	-FRONT	
+HIGH	ü,i	u,ɨ	+HIGH
-HIGH	ö,e	o,a	-HIGH

Vowel chart [with + LOW]

Vowel pairs in the chart are written in the order [+Rounded,-Rounded]

	+FRONT	-FRONT	
+HIGH	ü,i	u,ɨ	+HIGH
-HIGH	ö,e	o	-HIGH
		a	+LOW

Suffix lex entries (underspecified)

-yak, -yek $\left[\begin{array}{ll} \text{Round} & - \\ \text{High} & - \\ \text{Front} & \pm \end{array} \right]$ -yunk, -yünk $\left[\begin{array}{ll} \text{Round} & + \\ \text{High} & + \\ \text{Front} & \pm \end{array} \right]$

-yon, -yön, -yen $\left[\begin{array}{ll} \text{Round} & \pm \\ \text{Front} & \pm \\ \text{High} & - \\ \text{Low} & - \end{array} \right]$

Specification Rules [Feature spreading]

$$\text{a. } \left[\begin{array}{c} \text{Front} \\ \pm \end{array} \right] \rightarrow \left[\begin{array}{c} \text{Front} \\ \alpha \end{array} \right] / \left[\begin{array}{c} \text{Front} \\ \alpha \end{array} \right] \text{ C (C) } \text{ ---}$$

$$\text{b. } \left[\begin{array}{c} \text{Round} \\ \pm \end{array} \right] \rightarrow \left[\begin{array}{c} \text{Round} \\ \beta \\ \text{Front} \\ + \end{array} \right] / \left[\begin{array}{c} \text{Round} \\ \beta \end{array} \right] \text{ C (C) } \text{ ---}$$

$$\text{c. } \left[\begin{array}{c} \text{Front} \\ \text{Low} \\ - \end{array} \right] \rightarrow \left[\begin{array}{c} \text{Round} \\ + \end{array} \right]$$

$\left[\begin{array}{c} \text{Front} \\ + \end{array} \right]$ in rule (b) prevents halgat + yVn from producing a non-existent $\left[\begin{array}{c} \text{Front} \\ -, \text{Round} \\ -, \text{Low} \\ - \end{array} \right]$ Hungarian vowel.

Suffix lex entries (specified)

-yak	[	Round	-	]	-yunk	[	Round	+	]	-yon	[	Round	+]
	[	High	-	]		[	High	+	]		[	Front	-]
	[	Low	+	]		[	Low	-	]		[	High	-]
	[	Front	-	]		[	Front	-	]		[	Low	-]

Three Rules

a-rule

$$\begin{bmatrix} \text{Front} & - \\ \text{High} & - \\ \text{Low} & + \end{bmatrix} \rightarrow \begin{bmatrix} \text{Front} & \alpha \\ \text{Round} & - \end{bmatrix} / \begin{bmatrix} \text{Front} & \alpha \end{bmatrix} \text{ C } _ _$$

u-rule

$$\begin{bmatrix} \text{Front} & - \\ \text{High} & + \\ \text{Low} & - \end{bmatrix} \rightarrow \begin{bmatrix} \text{Front} & \alpha \\ \text{Round} & - \end{bmatrix} / \begin{bmatrix} \text{Front} & \alpha \end{bmatrix} \text{ C (C) } _ _$$

o-rule

$$\begin{bmatrix} \text{Front} & - \\ \text{High} & - \\ \text{Low} & - \end{bmatrix} \rightarrow \begin{bmatrix} \text{Front} & + \\ \text{Round} & \alpha \end{bmatrix} / \begin{bmatrix} \text{Front} & + \\ \text{Round} & \alpha \end{bmatrix} \text{ C (C) } _ _$$

Two Rules

$$\text{a. } \begin{bmatrix} \text{Front} & - \\ \text{High} & \beta \\ \text{Low} & -\beta \end{bmatrix} \rightarrow \begin{bmatrix} \text{Front} & \alpha \\ \text{Round} & - \end{bmatrix} / \begin{bmatrix} \text{Front} & \alpha \end{bmatrix} \text{ C (C) } \text{ ---}$$

$$\text{b. } \begin{bmatrix} \text{Front} & - \\ \text{High} & - \\ \text{Low} & - \end{bmatrix} \rightarrow \begin{bmatrix} \text{Front} & + \\ \text{Round} & \alpha \end{bmatrix} / \begin{bmatrix} \text{Front} & + \\ \text{Round} & \alpha \end{bmatrix} \text{ C (C) } \text{ ---}$$

Other rules

- a. $n \longrightarrow d / \text{---} y$
- b. $t \longrightarrow \int / \text{---} y$
- c. $y \longrightarrow \int / \left\{ \begin{array}{c} t \\ \int \end{array} \right\} \text{---}$
- d. $y \longrightarrow s / s \text{---}$
- e. $y \longrightarrow z / z \text{---}$

$/y/$ (= IPA $/j/$) assimilates to a preceding sibilant (rules c,d,e) and becomes $/\int/$ after $/t/$ (rule c). $/t/$ palatalizes before $/y/$ (rule b), and $/n/$ weakens to $/d/$.