

1. The basic o-raising alternation

Before a **voiced consonant**:

a.	<i>pokoj-u</i>	<i>pokój</i>	‘peace’ (GEN.SG., NOM.SG.)
b.	<i>stodoł-a</i>	<i>stodół</i>	‘barn’ (NOM.SG., GEN.PL.)
c.	<i>mol-a</i>	<i>mól</i>	‘moth’ (GEN.SG., NOM.SG.)
d.	<i>pol-e</i>	<i>pól</i>	‘field’ (NOM.SG., GEN.PL.)
e.	<i>por-a</i>	<i>pór</i>	‘time’ (NOM.SG., GEN.PL.)
f.	<i>morz-e</i>	<i>mórz</i>	‘sea’ (NOM.SG., GEN.PL.)
g.	<i>woz-u</i>	<i>wóz</i>	‘cart’ (GEN.SG., NOM.SG.)
h.	<i>słow-o</i>	<i>słów</i>	‘word’ (NOM.SG., GEN.PL.)
i.	<i>krow-a</i>	<i>krów</i>	‘cow’ (NOM.SG., GEN.PL.)
j.	<i>bob-a</i>	<i>bób</i>	‘bean’ (GEN.SG., NOM.SG.)
k.	<i>chorob-a</i>	<i>chorób</i>	‘sickness’ (NOM.SG., GEN.PL.)
l.	<i>brod-a</i>	<i>bród</i>	‘beard’ (NOM.SG., GEN.PL.)
m.	<i>wrog-a</i>	<i>wróg</i>	‘enemy’ (GEN.SG., NOM.SG.)
n.	<i>drog-a</i>	<i>dróg</i>	‘road’ (NOM.SG., GEN.PL.)

Not before a **voiceless consonant**:

a.	<i>szop-a</i>	<i>szop</i>	‘shed’ (NOM.SG., GEN.PL.)
b.	<i>kot-a</i>	<i>kot</i>	‘cat’ (GEN.SG., NOM.SG.)
c.	<i>cioci-a</i>	<i>cioc</i>	‘aunt’ (NOM.SG., GEN.PL.)
d.	<i>otok-u</i>	<i>otok</i>	‘circumference’ (GEN.SG., NOM.SG.)

Not before a **nasal consonant**:

a.	<i>dom-u</i>	<i>dom</i>	‘home’ (GEN.SG., NOM.SG.)
b.	<i>obron-a</i>	<i>obron</i>	‘defense’ (NOM.SG., GEN.PL.)
c.	<i>koni-a</i>	<i>koń</i>	‘horse’ (GEN.SG., NOM.SG.)

2. Native exceptions

Unexpected raising before a **voiceless** consonant.

a.	<i>stop-a</i>	<i>stóp</i>	‘foot’ (NOM.SG., GEN.PL.)
b.	<i>kop-a</i>	<i>kóp</i>	‘heap’ (NOM.SG., GEN.PL.)
c.	<i>robot-a</i>	<i>robót</i>	‘work’ (NOM.SG., GEN.PL.)
d.	<i>sobot-a</i>	<i>sobót</i>	‘Saturday’ (NOM.SG., GEN.PL.)
e.	<i>cnot-a</i>	<i>cnót</i>	‘virtue’ (NOM.SG., GEN.PL.)
f.	<i>wrot-a</i>	<i>wrót</i>	‘gate’ (NOM.SG., GEN.PL.)
g.	<i>powrot-u</i>	<i>powrót</i>	‘return’ (GEN.SG., NOM.SG.)

Lack of raising before a **voiced** consonant:

a.	<i>batog</i>	‘cowhide (whip)’
b.	<i>węgorz</i>	‘eel’
c.	<i>tor</i>	‘rail’
d.	<i>kaczor</i>	‘drake’
e.	<i>kąkol</i>	‘corn cockle’
f.	<i>gruczoł</i>	‘gland’

3. Loanwords

Generally **no raising**:

a.	<i>snob</i>	‘snob’
b.	<i>epizod</i>	‘episode’
c.	<i>rapsod</i>	‘rapsody’
d.	<i>buldog</i>	‘bulldog’
e.	<i>wirtuoz</i>	‘virtuoso’
f.	<i>honor</i>	‘honor’
g.	<i>aktor</i>	‘actor’
h.	<i>pomidor</i>	‘tomato’
i.	<i>metafor</i>	‘metafor’ (GEN.PL.)
j.	<i>furor</i>	‘success’ (GEN.PL.)
k.	<i>gol</i>	‘goal’
l.	<i>alkohol</i>	‘alcohol’
m.	<i>gondol</i>	‘gondola’ (GEN.PL.)

But others do have **raising** (sources and speakers vary for some words):

a.	<i>mod-a</i>	<i>mód</i>	‘fashion, mode’ (NOM.SG., GEN.PL.)
b.	<i>od-a</i>	<i>ód ~ od</i>	‘ode’ (NOM.SG., GEN.PL.)
c.	<i>pagod-a</i>	<i>pagód</i>	‘pagoda’ (NOM.SG., GEN.PL.)
d.	<i>proz-a</i>	<i>próz</i>	‘prose’ (NOM.SG., GEN.PL.)
e.	<i>doz-a</i>	<i>dóz ~ doz</i>	‘dose’ (NOM.SG., GEN.PL.)
f.	<i>tog-a</i>	<i>tóg ~ tog</i>	‘toga’ (NOM.SG., GEN.PL.)
g.	<i>konwoj-u</i>	<i>konwój</i>	‘convoy’ (GEN.SG., NOM.SG.)

4. o-Raising by final consonant

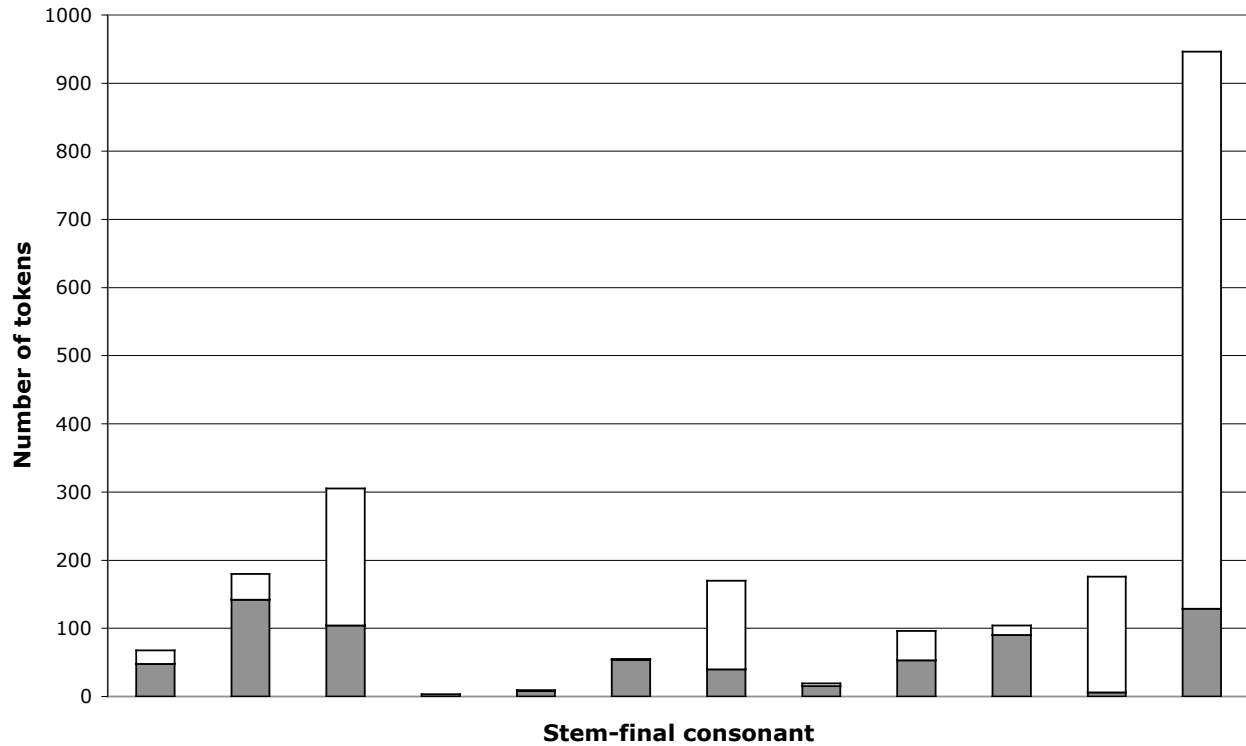
		non-alternating [o]			alternating [o] ~ [u]			%
		<i>epizod</i> <i>epizody</i>	<i>metoda</i> <i>metod</i>	total	<i>spód</i> <i>spody</i>	<i>broda</i> <i>bród</i>	total	
voiced obstruents	dź	1	0	1	8	0	8	88.9
	dz	0	0	0	1	2	3	100.0
	z	10	120	130	32	8	40	23.5
	d	20	18	38	100	42	142	78.9
	w	1	0	1	54	0	54	98.2
	b	20	0	20	28	20	48	70.6
	ż	4	0	4	5	10	15	78.9
	g	195	6	201	70	34	104	34.1
approx.	ł	30	13	43	38	15	53	55.2
	j	4	10	14	90	0	90	86.5
	l	100	70	170	3	3	6	3.4
	r	750	67	817	109	20	129	13.6
voiceless obstruents	ć	16	1	17	0	0	0	0.0
	ś	6	4	10	0	0	0	0.0
	c	15	2	17	0	0	0	0.0
	s	110	15	125	0	0	0	0.0
	t	260	144	404	15	4	19	4.5
	f	14	3	17	0	0	0	0.0
	p	150	21	171	0	1	1	0.6
	cz	31	0	31	0	0	0	0.0
	sz	70	7	77	0	0	0	0.0
	ch	35	26	61	0	0	0	0.0
	k	180	30	210	0	0	0	0.0
nasals	ń	40	1	41	0	0	0	0.0
	n	600	75	675	0	0	0	0.0
	m	100	20	120	0	0	0	0.0

3419

717

17.3

Raising before voiced consonants



	b	d	g	dz	dź	w	z	ż	ł	j	l	r
ó tokens	48	142	104	3	8	54	40	15	53	90	6	129
o tokens	20	38	201	0	1	1	130	4	43	14	170	817
	71%	79%	34%	100%	89%	98%	24%	79%	55%	87%	3.4%	14%

cf. Latin and Greek loans:

- or** (*aktor*)
- ora** (*metafora*)
- log** (*katalog, geolog*)
- ol** (*metanol*)
- oza** (*glukoza*)

5. o-Raising by final voiced consonant: Native words

Revision of these figures is incomplete, but especially for non-alternating [o] they reflect native vocabulary.

Even with the non-native words (largely) excluded, the rate of raising ranges from 21 to 100 percent.

		non-alternating [o]			alternating [o] ~ [u]			%
		<i>epizod</i> <i>epizody</i>	<i>metoda</i> <i>metod</i>	total	<i>spód</i> <i>spody</i>	<i>broda</i> <i>bród</i>	total	
voiced obstruents	dź	1	0	1	8	0	8	88.9
	dz	0	0	0	1	2	3	100.0
	z	4	8	12	32	8	40	76.9
	d	1	1	2	100	42	142	98.6
	w	1	0	1	54	0	54	98.2
	b	4	1	5	28	20	48	90.6
	ż	4	0	4	5	10	15	78.9
	g	5	0	5	70	34	104	95.4
approx.	ł	29	12	41	38	15	53	56.4
	j	2	6	8	90	0	90	91.8
	l	15	7	22	3	3	6	21.4
	r	50	40	90	109	20	129	58.9

6. Children's forms: Voiced obstruents

		<i>F</i>	<i>F</i>	<i>F</i>	<i>F</i>	<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>	<i>F</i>	<i>M</i>	<i>F</i>	<i>M</i>	<i>F</i>	<i>M</i>	<i>M</i>	<i>M</i>	<i>F</i>	
	<i>adult</i>	5.5	6	6	6	6	6	6	6.5	7	7	8	8	9	9	9	9	9.5	% u
doby 'day'	u	u		o	o	o	u	o	u	u	u	o/u		u	u		u	o	60.7
snobem 'snob'	o		o	o	o	o	u	o	o	o	o	o	o	u	o	o	u	o	18.8

largely follow adult models but 20–40% difference

broda 'beard/chin'	u	o	o	u	o		u	u	u	u	u	u	u	u	u	u	u	u	u	81.3
moda 'fashion'	u	u		u	o	o	u	o	u	o	u	u	o	u	u	o	u	u	62.5	
kłody 'log'	u		o	o	o	o	u	o	u	o	u	u		u	u	u	u	o	53.3	
soda 'baking soda'	u	o	o	o	o		o	o	u	o	u	o/u		u	u	u	u	o	43.3	
oda 'ode'	o/u	o	o	u	o	o	u	o	u	o	u	u/o	o	o	u	u	u	o	44.1	
pagoda 'pagoda'	o/u	u	u	u	o	u	u	o	u	u	u	u	o	u	u	u	u	u	82.4	
kody 'code'	o	o	o	o	o	o	o	o	o	o	u	u/o		o	o	o	o	o	9.4	

high rate for *pagoda* probably due to analogy with *pogoda* ~ *pogód* 'weather'

toga 'gown'	o	o	o	u	o	o	o	o	u	u	u	u	o		u	u	u	o	50.0
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analogy to other /g/ stems, or to voiced consonants in general

brzoza 'birch'	u	o	o	u	o		u	u	u	u	u	u	u	u	u	u	u	o	75.0
koza 'goat'	u	o	o	u	o		u	o	u	u	u	u		u	u	u	u	o	66.7
płyzy 'sled blades'	u	o	o	o	o	o	o	o	u	o	o	o	o	u	u	u	u	o	29.4
proza 'prose'	o/u	o	u	u	o	o	u	o	u	u	u	u		u	u	u	u	u	75.0
doza 'dose'	o/u	o	o	u	o	o	u	o	u	u	u		o	o	u	u	u	o	50.0

7. Children's forms: Voiceless obstruents

			F	F	F	F	M	M	M	M	F	M	F	M	F	M	M	M	F	% u
		adult	5.5	6	6	6	6	6	6	6.5	7	7	8	8	9	9	9	9	9.5	
stopa	'foot'	u	o	u	u	o	u	u	u	u	u	u	u	o	u	u	u	u	o	76.5
szopa	'shed'	o		o	o	o	o	u	u	u	o	u	u/o	o	o	u	o	u	o	40.6

unexpected raising in *szopa* presumably due to analogy with high-frequency *stopa*.

sobota	'Saturday'	u	o	u	o	o	u	u	o	u	u	u	u	u	u	u	o	u	o	64.7
wrota	'gate'	u	o	o	u	o	o	u		u	o	u	u	o	u	u	u	u	o	56.3
cnota	'virtue'	u	o	o	o	o	u	u	o	u	o	o	u	o	o	u	o	u	o	35.3

raising stems of greater familiarity seem to have more actual raising.

osa	'wasp'	o	o	o	o	o	o	u	o	u	o	u	u/o	o	o	o	o	o	o	20.6
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some raising in this voiceless stem, despite general lack of raising for adults.

8. Children's forms: Stems in /r/

	<i>adult</i>	F	F	F	F	M	M	M	M	F	M	F	M	F	M	M	M	F	% u
		5.5	6	6	6	6	6	6	6.5	7	7	8	8	9	9	9	9	9.5	
komory 'chamber'	u		u	u	u	u	u	o	u	o	u	u	o	u	u	u	u	o	75.0
obora 'barn'	u	o	u	u	o	u	u	o	o	o	u	u	o	u	u	o	u	o	52.9
bory 'woods'	u	o	o	o	o	o	o	o	o	o	u	u		u	u	u	u	o	37.5
zapory 'dam'	u		o		o	u	o	o	u	o	u	o/u	o	u	u	o	o	o	36.7

maciora 'sow'	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	0.0
tory 'lane/track'	o	o	o	o	o	o	o	o	u	o	o	o	o	u	o	o	o	o	11.8
zatory 'clog'	o	o	o	o	o	o	o	o	u	o	o	o		u	o	o	o	o	12.5
zmora 'nightmare'	o	o	o	o	o	o	o	o	u	o	o	o	o	u	u	o/u	u	u	32.4
nora 'den'	o	o	o	o	o	o	o	o	u	o	u	u	o	u	u		o/u	u	40.6

older children more like to overapply the rule to non-raising stems.

9. Children's forms: Match with adult forms

Raising stems (adult ó)

		%	n
stopa	<i>foot</i>	81.3	16
komory	<i>chamber</i>	80.0	15
brzoza	<i>birch</i>	80.0	15
broda	<i>beard/chin</i>	80.0	15
koza	<i>goat</i>	71.4	14
sobota	<i>Saturday</i>	68.8	16
prośba	<i>request</i>	68.8	16
doby	<i>day</i>	66.7	12
mole	<i>moth</i>	62.5	16
wrota	<i>gate</i>	60.0	15
moda	<i>fashion</i>	60.0	15
kłody	<i>log</i>	57.1	14
groźba	<i>threat</i>	56.3	16
obora	<i>barn</i>	56.3	16
pora	<i>time</i>	53.3	15
soda	<i>baking soda</i>	46.2	13
bory	<i>woods</i>	40.0	15
zapory	<i>dam</i>	38.5	13
cnota	<i>virtue</i>	37.5	16
płyzy	<i>sled blades</i>	31.3	16

Non-raising stems (adult o)

		%	n
sikory	<i>titmouse</i>	100.0	16
maciora	<i>sow</i>	100.0	16
epizody	<i>episode</i>	100.0	16
ramole	<i>dotard</i>	93.8	16
amfora	<i>amphora</i>	93.8	16
sierota	<i>orphan</i>	93.3	15
dwa kody	<i>code</i>	92.9	14
znachorka	<i>faith healer f.</i>	91.7	12
tory	<i>rail/path</i>	87.5	16
gole	<i>goal</i>	86.7	15
zatory	<i>clog</i>	86.7	15
anafora	<i>anaphor</i>	81.3	16
osa	<i>wasp</i>	80.0	15
chochoły	<i>straw covering</i>	80.0	15
snobem	<i>snob</i>	80.0	15
flora	<i>flora</i>	80.0	15
diaspora	<i>diaspora</i>	80.0	15
zmora	<i>nightmare</i>	73.3	15
nora	<i>den</i>	64.3	14
szopa	<i>barn</i>	57.1	14
toga	<i>gown</i>	46.7	15

10. Raising before final /r/, monosyllabic stems

Nonce forms similar to **non-raising** *tory* ~ *tor* ‘lane, track’ [ˈtorɪ ~ ˈtor]

	<i>Wojtek</i> M39	<i>Czesław</i> M56	<i>Tomek</i> M22	<i>Ewa</i> F36	<i>Ewelina</i> F22	<i>Aska</i> F25	<i>Beata</i> F32	<i>Kasia</i> F31	<i>Gosia</i> F32	<i>Konrad</i> M31	<i>Darek</i> M34	<i>Iwona</i> F34	<i>Kis</i> M29	<i>Joanna</i> F31	<i>Zosia</i> F55	<i>Mag</i> F27	
tory	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	0%
<i>kory</i>	o	o	o	o	o	o	o	o	o	o	o	o	o	u	o	o	6%
<i>story</i>	o	o	o	o	o	o	o	o	o	o	u	o	o	o	o	o	6%
<i>dory</i>	o	o	o	o	o	o	o	o	o	o	u	o	o	u	o	o	13%
<i>fory</i>	o	o	u	o	o	o	o	o	o	u	u	o	o	o	o	o	19%
<i>gory</i>	u	u	u	o	o	o	u	o	o	o	u	o	o	o	o	o	31%

For *gory*, with more raising than the other forms, cf. nonalternating *góra* ~ *gór* ‘mountain’.

Nonce form similar to **raising** *dwory* ~ *dwór* ‘court, mansion’ [ˈdvorɪ ~ ˈdvor]

dwory	u	u	u	u	u	u	u	u	u	u	u	u	u	u	u	u	100%
<i>pwory</i>	o	o	u	u	u	u	o	o	u	o	o	o	u	u	o	u	50%

11. Raising before final /l/, monosyllabic stems

Nonce forms similar to **non-raising** *gole* ~ *gol* ‘goal’ [ˈgole ~ ˈgol]

	Wojtek M39	Czeslaw M56	Tomek M22	Ewa F36	Ewelina F22	Aska F25	Beata F32	Kasia F31	Gosia F32	Konrad M31	Darek M34	Iwona F34	Kis M29	Joanna F31	Zosia F55	Mag F27	
gole m.	o	o	o	u	o	o	o	o	o	o	o	o	o	o	o	o	6%
<i>kole m.</i>	o	o	o	o	o	o	o	o	o	o	o	o	u	o	o	o	6%
<i>zole m.</i>	o	o	o	o	o	o	o	o	o	o	o	o	u	u	o	o	13%
<i>fole m.</i>	u	o	u	o	o	o	o	o	o	o	o	o	o		o	o	13%
bole m.	u	o	o	o	oli	o	o	o	u	u	u	u	u	u	o	o	47%

For *bole*, with more raising than the other forms, cf. nonalternating *bóle* ~ *ból* ‘pain’.

Nonce forms similar to **raising** *sol* ~ *sól* ‘salt’ [ˈsoli ~ ˈsul]

sol f.	u	u	u	u	ola	ola	u	u	u	u	u	u	u	u	u	u	100%
<i>fole f.</i>	u	o	u	oli	oli	u	o	o	u	u	u	o	u	u	o	o	57%
<i>bole f.</i>	oli	oli	oli	oli	ol	u	o	o	o	u	u	o	u	u	o	u	55%
<i>zole f.</i>	u	o	o	oli	o	u	u	o	u	u	o	u	u	o	o	o	47%
<i>gole f.</i>	oli	oli	u	oli	oli	oli	u	o	u	o	o	o	o	o	o		30%

For *gole*, with less raising than the other forms, cf. nonraising (masculine) *gol* shown above.

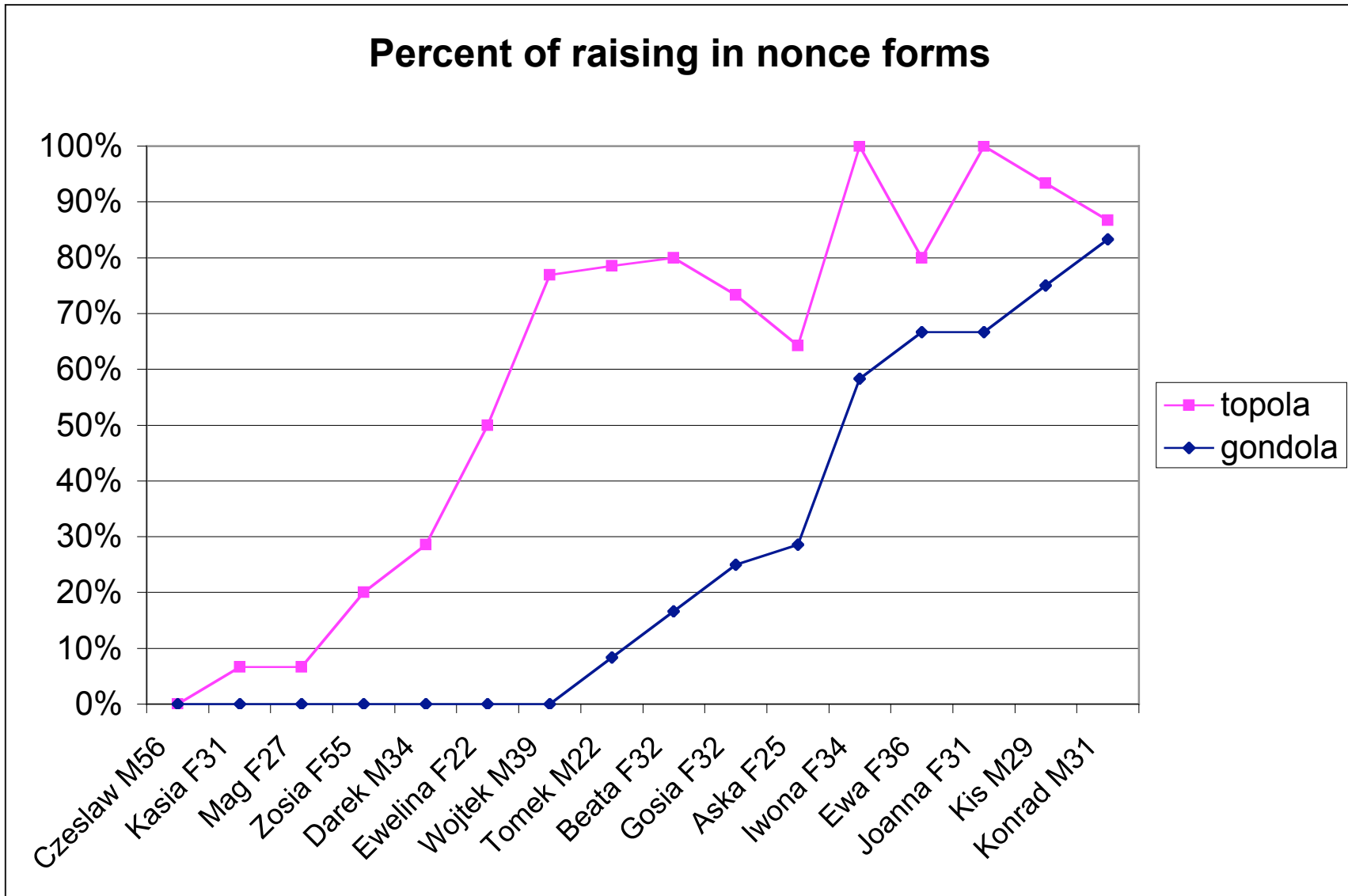
12. Raising before final /l/

Nonce forms based on **non-raising** *gondola* ~ *gondol* ‘gondola’ [gon'dola ~ 'gondol]

	Wojtek M39	Czeslaw M56	Tomek M22	Ewa F36	Ewelina F22	Aska F25	Beata F32	Kasia F31	Gosia F32	Konrad M31	Darek M34	Iwona F34	Kis M29	Joanna F31	Zosia F55	Mag F27	
gondola	oli	o	o	o	o	o	o	o	o	o	o	o	u	o	o	o	7%
<i>gonsola</i>	o	o	o	o	o	o	o	o	u	o	o	o	o	o	o	o	6%
<i>gontola</i>	o	o	o	o	o	ola	o	o	u	u	o	o	o	u	o	o	20%
<i>kondola</i>	oli	o	u	u	o	u	u	o	o	o	o	o	o	o	o	o	27%
<i>gongola</i>	o	o	o	u	o	oli	o	o	o	u	o	u	u	o	o	o	27%
<i>bondola</i>	o	o	o	o		u	o	o	o	u	o	u	u	o	o	o	27%
<i>gonzola</i>	o	o	o	oli	o	o	o	o	u	u	o	o	u	u	o	o	27%
<i>hondola</i>	o	o	o	u	oli	oli	o	o	o	u	o	o	u	u	o	o	29%
<i>gonfola</i>	o	o	o	oli	oli	oli	o	o	o	u	o	u	u	u	o	o	31%
<i>pondola</i>	o	o	o	u	o	o	o	o	o	u	o	u	u	u	o	o	31%
<i>tondola</i>	o	o	o	u	o	o	o	o	o	u	o	u	u	u	o	o	31%
<i>sonfola</i>	o	o	o	u	oli	oli	o	o	o	u	o	u	u	u	o	o	36%
<i>tonfola</i>	o	oli	o	oli	oli	o	u	o	o	u	o	u	u	u	o	o	38%
	0%	0%	8%	67%	0%	29%	17%	0%	25%	83%	0%	58%	75%	67%	0%	0%	

Nonce forms based on **raising** *topola* ~ *topól* ‘poplar tree’ [to'pola ~ 'topul]

topola	oli	u	u	u	oli	u	u	u	u	o	o	o	u	u	u	u	79%	
<i>towola</i>	u	o	u	u	u	u	u	u	u	u	u	u	u	u	u	u	o	88%
<i>sobola</i>	u	o	u	u	u	u	o	o	u	u	o	u	u	u	u	o	u	69%
<i>bopola</i>	u	o	u	u	oli	u	u	o	o	u	u	u	u	u	u	o	o	67%
<i>gopola</i>	u	o	u	u	u	u	u	o	u	u	o	u	u			o	o	67%
<i>zopola</i>	u	o	oli	u	oli	u	u	o	u	u	o	u	u	u	u	o	o	64%
<i>dofola</i>	u	o	u	u	u	o	u	o	o	u	u	u	u	u	u	o	o	63%
<i>dopola</i>	u	o	u	o	oli	o	u	o	u	u	o	u	u	u	u	u	o	60%
<i>tobola</i>	oli	o	o	o	u	u	o	o	u	u	u	u	u	u	u	u	o	60%
<i>tokola</i>	oli	o	u	u	o	u	u	o	u	u	o	u	u	u	u	o	o	60%
<i>sopola</i>	u	o	u	o	u	o	u	o	u	u	o	u	u	u	u	o	o	56%
<i>tofola</i>	o	o	u	u	o	u	u	o	u	u	o	u	u	u	u	o	o	56%
<i>togola</i>	u	o	u	u	o	o	u	o	o	u		u	u	u	u	o	o	53%
<i>dokola</i>	u	o	u	u	o	oli	u	o	o	u	o	u	u	u	u	o	o	53%
<i>popola</i>	o	o	o	u	o	u	u	o	u	o	o	u	u	u	u	o	o	44%
<i>totola</i>	o	o	o	u	o	o	o	o	u	o	o	u	o	u	o	o	o	25%
	77%	0%	79%	80%	50%	64%	80%	7%	73%	87%	29%	100%	93%	100%	20%	7%		



For each speaker, raising in *topola* forms is at least as frequent as raising in *gondola* forms.

13. Raising before final /r/

Nonce forms based on **non-raising** *kaczory* ~ *kaczor* ‘drake (male duck)’ [ka'čorɪ ~ 'kačor]

	Wojtek M39	Czesław M56	Tomek M22	Ewa F36	Ewelina F22	Aska F25	Beata F32	Kasia F31	Gosia F32	Konrad M31	Darek M34	Iwona F34	Kis M29	Joanna F31	Zosia F55	Mag F27	
kaczory	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
<i>gaczory</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
<i>gaszory</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
<i>haczory</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
<i>taczory</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
<i>faszory</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
<i>daczory</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
<i>zaczory</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
<i>saczory</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
<i>paczory</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
<i>baczory</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
<i>faczory</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
<i>kadzory</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
<i>kasory</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
<i>gasory</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
<i>fasory</i>	0	0	0	0	0	ar	0	0	0	0	0	0	0	0	0	0	0%
<i>wazory</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
<i>kaszory</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
<i>tasory</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
<i>kazory</i>	0	0	0	0	0	0	0	0	0	0	0	0	u	0	0	0	6%
<i>maczory</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	u	0	0	6%
	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	5%	0%	0%	

Nonce forms based on **raising** *potwory* ~ *potwór* ‘monster’ [pot'forɨ ~ 'potfur]

potwory	u	u	u	u	u	u	u	u	u	u	u	u	u	u	u	u	u	100%
<i>wotwory</i>	u	o	u	u	u	u	o	u	u	u	o	u	u	u	u	u	u	81%
<i>podwory</i>	u	o	u	u	u	o	o	u	u	u	u	u	u	u	u	u	u	81%
<i>sotwory</i>	u	o	u	u	u	u	u	u	u	u	o	u	u	u	o	u	u	81%
<i>fotwory</i>	ruf	o	u	u	u	u	o	u	u	u	u	o	u	u	u	u	u	80%
<i>totwory</i>	u	o	o	u	o	u	u	u	u	u	o	u	u	u	u	o	u	69%
<i>dotwory</i>	o	o	u	o	u	u	o	u	u	u	u	u	u	u	u	o	u	69%
<i>botwory</i>	u	o	u	o	u	u	o	o	u	u	o	o	u	u	u	u	u	63%
<i>poswory</i>	u	o	u	u	u	o	o	o	u	u	o	o	u	u	u	u	u	63%
<i>pogwory</i>	o	o	u	u	u	u	u	o	u	o	o	u	u	u	u	o	u	63%
<i>gotwory</i>	u	o	u	u	o	u	u	o	u	o	o	u	u	u	u	o	o	56%
<i>kotwory</i>	u	o	u	u	u	o	u	o	u	o	o	u	u	u	u	o	o	56%
<i>potpory</i>	o	o	o	u	u	u	o	u	u	o	o	u	u	u	u	o	u	56%
<i>bodbory</i>	u	o	o	u	o	o	u	u	u	u	o	u	u	u	u	o	o	56%
<i>poswory</i>	o	o	o	u	o	u	u	o	u	o	o	o	u	u	o	u	u	44%
<i>podgory</i>	o	o	o	u	o	u	u	o	o	u	o	o	o	u	o	u	u	38%
<i>potkory</i>	o	o	o	o	o	u	o	o	o	u	o	u	o	u	o	o	o	25%
<i>potsory</i>	o	o	o	o	o	o	o	o	o	o	o	o	o	u	u	o	o	13%
<i>fotsory</i>	o	o	o	o	o	o	o	o	o	u	o	o	o	u	o	o	o	13%
<i>potzory</i>	o	ory	o	o	o	o	o	o	o	o	o	o	o	o	u	o	o	7%
	50%	0%	53%	68%	53%	63%	42%	42%	79%	58%	16%	58%	84%	95%	26%	63%		

14. Raising before voiceless consonants

Nonce forms based on **non-raising** *zatoka* ~ *zatok* ‘gulf, bay’
no stems ending in /k/ undergo raising

	<i>Krzysztof</i> M23	<i>Mag</i> F27	<i>Bu</i> F32	<i>Kazia</i> F57	<i>Krzysztof</i> M31	<i>Katarzyna</i> F31	<i>Agnieszka</i> F22	
zatoka	o	o	o	o	o	o	o	0%
<i>satoka</i>	o	o	o	o	o	o	o	0%
<i>zadoka</i>	o	o	o	o	o	o	o	0%
<i>fatoka</i>	o	o	o	o	o	o	o	0%
<i>sadoka</i>	o	o	o	o	o	o	o	0%
<i>safoka</i>	o	o	o	o	o	o	o	0%
<i>zakoka</i>	o	o	o	o	o	o	o	0%
<i>zafoka</i>	o	o	o	o	o	o	o	0%
<i>tatoka</i>	o	o	o	o	o	o	o	0%
<i>zapoka</i>	o	o	o	o	o	o	o	0%
<i>szatoka</i>	o	o	o	o	o	o	o	0%
<i>szadoka</i>	o	o	o	o	o	o	o	0%
<i>szapoka</i>	o	o	o	o	o	o	o	0%
<i>zakoka</i>	o	o	o	o	o	o	o	0%
<i>zatota</i>	o	o	o	o	o	o	o	0%
<i>sadopa</i>	o	o	o	o	o	o	o	0%
<i>sotoka</i>	o	o	o	o	o	o	o	0%
<i>sakoka</i>	o	o	o	o	o	o	o	0%
<i>zatopa</i>	o	o	o	o	u	o	o	14%
	0%	0%	0%	0%	6%	0%	0%	

Nonce forms based on **raising** *sobota* ~ *sobót* ‘Saturday’
 most voiceless exceptions end in /t/; cf. also *robota* ~ *robót* ‘work’

sobota	u	u	u	u	u	u	u	100%
<i>zobota</i>	o	u	u	u	u	u	u	86%
<i>sopota</i>	o	u	o	o	u	o	u	43%
<i>szobota</i>	u	o	o	o	u	o	u	43%
<i>zopota</i>	o	o	o	o	u	o	u	29%
<i>fopota</i>	o	o	o	o	u	o	u	29%
<i>sowota</i>	o	u	o	o	u	o	o	29%
<i>pobota</i>	o	o	o	u	u	o	o	29%
<i>szopota</i>	o	o	o	o	u	o	u	29%
<i>soboka</i>	u	o	o	o	u	o	o	29%
<i>sofota</i>	o	o	o	o	u	o	o	14%
<i>zofota</i>	o	o	o	o	u	o	o	14%
<i>sotota</i>	o	o	o	o	u	o	o	14%
<i>sodota</i>	o	o	o	o	u	o	o	14%
<i>szotota</i>	o	o	o	o	u	o	o	14%
<i>sokota</i>	o	o	o	o	u	o	o	14%
<i>sobopa</i>	o	o	o	o	u	o	o	14%
<i>sopoka</i>	o	o	o	o	u	o	o	14%
<i>sotoka</i>	o	o	o	o	o	o	o	0%
	11%	17%	6%	11%	94%	6%	33%	

15. Raising before nasals

Nonce forms based on **non-raising** stems

	<i>Zosia</i> F55	<i>Mag</i> F27	<i>Daniela</i> F25	<i>Krzysztof</i> M31	<i>Katarzyna</i> F31	<i>Agnieszka</i> F22	
gondola	o	o	o	o	o	o	0%
<i>gondona</i>	o	o	o	o	o	o	0%
<i>bondona</i>	o	o	o	o	o	o	0%
<i>gontona</i>	o	o	o	o	o	o	0%
<i>kontona</i>	o	o	o	o	o	o	0%
	0%	0%	0%	0%	0%	0%	

kaczory	o	o	o	o	o	o	0%
<i>kaczony</i>	o	o	o	o	o	o	0%
<i>gaczony</i>	o	o	o	o	o	o	0%
<i>daczony</i>	o	o	o	o	o	o	0%
	0%	0%	0%	0%	0%	0%	

Nonce forms based on **raising** stems

5 out of 6 speakers raised at least once before a nasal

topola	u	u	u	u	u	u	100%
<i>gopoma</i>	o	o	o	o	o	o	0%
<i>topoma</i>	o	o	o	o	u	o	17%
<i>toboma</i>	o	o	u	o	o	o	17%
<i>kopoma</i>	o	o	o	u	o	o	17%
	0%	0%	25%	25%	25%	0%	

potwory	u	u	u	u	u	u	100%
<i>potwony</i>	u	o	o	o	o	o	17%
<i>botwony</i>	u	o	o	o	o	o	17%
<i>kotwony</i>	o	u	o	o	o	o	17%
<i>podwony</i>	o	o	o	o	o	o	0%
	50%	25%	0%	0%	0%	0%	

16. Prespecification analysis

Three kinds of underlying rounded vowels:

[+round, +high]	non-alternating [u]	<i>góra, gór</i> ‘mountain’ <i>cudy, cud</i> ‘miracle’
[+round, –high]	non-alternating [o]	<i>tory, tor</i> ‘track’ <i>gondola, gondol</i> ‘gondola’ <i>domy, dom</i> ‘house’
[+round]	alternating [o ~ u]	<i>pole, pól</i> ‘field’ <i>stopa, stóp</i> ‘foot’ <i>moda, mód</i> ‘fashion’

Feature-filling rules (or constraints):

[+high] in final syllable

[–high] elsewhere

17. Analogy

Helps speakers determine the underlying feature specification of surface [o], based (partly) on similarity to existing forms in the lexicon.

