

ILLUSTRATIONS OF THE IPA

Polish

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Polish is a West Slavonic language with about 41 million speakers in Poland and approximately 10 million in diasporas. It can be described as a ‘consonantal’ language, in two respects: (a) it has a rich system of consonant phonemes, as shown in the table, and (b) it allows heavy consonant clusters, especially word-initially. A phonological word may begin with a five-consonant cluster: /spstroŋjem/ *z pstrągiem* ‘with (the) trout’, and a 4C lexeme-initial cluster is not unusual: /vzɫɔnt/ *wzgląd* ‘respect (n.)’. Even a geminate affricate can occur in this position: /d͡ʒd͡ʒisti/ *dżdżysty* ‘rainy’. The initial C-clusters are not simplified in fluent, spontaneous speech.

The segmental IPA transcription used here in the sample is ‘broad’ in three respects: (a) it is (taxonomic-)phonemic, (b) it minimizes the use of diacritics, and (c) it uses the simplest characters (cf. the table and the vowel quadrilateral below).

A representative contemporary work on Polish phonetics is Dukiewicz (1995). Polish spelling is morpho-phonological, and the grapheme–phoneme relations are quite complex, but regular, allowing highly predictive rules (Steffen-Batogowa 1975). Several computer programs are available implementing these rules.

The text of the *North Wind and the Sun* was read by a 58-year-old professional female speaker. The style is that of an easy narrative.¹

Consonants

	Labial	Labiodental	(Post)dental	Alveolar	Alveolo-palatal	Palatal	Velar
Plosive	p b		t d			ç ʝ	k g
Fricative		f v	s z	ʃ ʒ	ç ʝ		x
Affricate			ts dz	tʃ dʒ	tɕ dʑ		
Nnasal	m		n		ɲ		ŋ
Lateral			l				
Flap/Trill				r			
	Front			Back			
Approximant	j (Ĳ)			w (w̃)			

¹ The interested reader may obtain the recording in a WAV format on contacting the author by e-mail.

The voiced/voiceless opposition in the obstruents is fully one of glottal activity. The voiceless stops are not aspirated, and differences in voice onset time are distinctive.

/ɲ/ is primarily alveolo-palatal [ɲ^ɰ] but [ɲ̥] before fricatives. /ŋ/ is [ŋ] before [k g] and non-syllabic [ü] or [ĩ] elsewhere. But there are also reasons for treating the nasalized non-syllabic vocoids as separate phonemes, transcribed /w̃ ỹ/. These, as well as their oral counterparts are classified as ‘approximants’ in the table.

/ts dz tʃ dʒ tɕ dz/ are distinct from /ts dz tʃ tɕ dz/ (a minimal pair is, for example, /vjetʃni/ *wieczny* ‘eternal’ : /vjetʃni/ *wietrzny* ‘windy’; cf. also /dʒem/ *dżem* ‘marmalade’ : /dʒevo/ *drzewo* ‘tree’, /pʃetɕek/ *przeciek* ‘leak(n.)’ : /pʃetɕem'bʝorstfo/przedsiębiorstwo ‘enterprise’).

/ʃ ʒ tʃ dʒ/ are laminal alveolar.

b : p						
bal	<i>bal</i>	‘ball (dance)’	pal	<i>pal</i>	‘a post’	
t : d						
tom	<i>tom</i>	‘volume’	dom	<i>dom</i>	‘house’	
c : ʃ						
cew	<i>kiel</i>	‘fang’	ʃjewda	<i>gielda</i>	‘stock exchange’	
k : g						
ʔkura	<i>kura</i>	‘hen’	ʔgura	<i>góra</i>	‘mountain’	
f : v						
fur	<i>fur</i>	‘carts (gen. pl.)’	vur	<i>wór</i>	‘a sack’	
s : z						
ʔkosa	<i>kosa</i>	‘scythe’	ʔkoza	<i>koza</i>	‘goat’	
ʃ : ʒ						
ʃal	<i>szal</i>	‘muffler’	ʒal	<i>żal</i>	‘regret (n.)’	
c : z						
ʔcina	<i>sina</i>	‘livid (fem.)’	ʔzima	<i>zima</i>	‘winter’	
c : k						
ʔcelɲa	<i>kielnia</i>	‘a trowel’	ʔkelner	<i>kelner</i>	‘waiter’	
ʃ : ʒ						
ʔdroje	<i>drogie</i>	‘dear (nom. pl.)’	ʔdroje(w̃)	<i>droge</i>	‘way (acc. sing.)’	
S : ʃ : c						
ʔkasa	<i>kasa</i>	‘cash register’	ʔkafa	<i>kasza</i>	‘groats’	ʔkaca <i>Kasia</i> ‘Cate’
z : ʒ : z						
zet	<i>zet</i>	‘letter z’	ʒet	<i>żet</i>	‘letter ż’	zet <i>ziet</i> ‘letter ź’
k : x						
ʔkula	<i>kula</i>	‘sphere’	ʔxula	<i>hula</i>	‘(he) revels’	
ts : tʃ : tɕ						
ʔkatse	<i>kace</i>	‘hangovers’	ʔkatʃe	<i>kacze</i>	‘of ducks’ (adj.pl.)	ʔkatʃe <i>kacie</i> ‘hangman (voc.)’
dz : tʃ : dz						
ʔridze	<i>rydze</i>	‘agarics’	ʔbriɕe	<i>brydże</i>	‘games of bridge’	ʔidze <i>idzie</i> ‘he goes’
n : ɲ : ŋ						
ʔirenka	<i>Irenka</i>	‘Irene (dim.)’	maʔleɲka	<i>małeńka</i>	‘wee (fem.)’	ʔreɲka <i>ręka</i> ‘hand’
ɲ : ɲ̃						
ʔdapa	<i>dania</i>	‘dishes’	ʔdapɲa	<i>Dania</i>	‘Denmark’	
l : r						
bul	<i>ból</i>	‘pain’	bur	<i>bór</i>	‘forest’	
j : w						
ʔmaja	<i>maja</i>	‘May (gen.)’	ʔmawa	<i>mala</i>	‘small (fem.)’	
ʃ̃ : w̃						
ʔkojsci	<i>koński</i>	‘horse’s’	koŃsci	<i>kąski</i>	‘morsels’	

Vowels

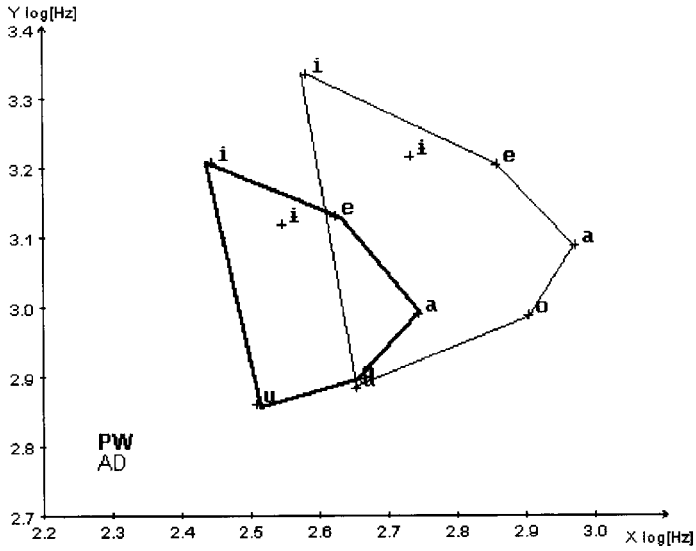
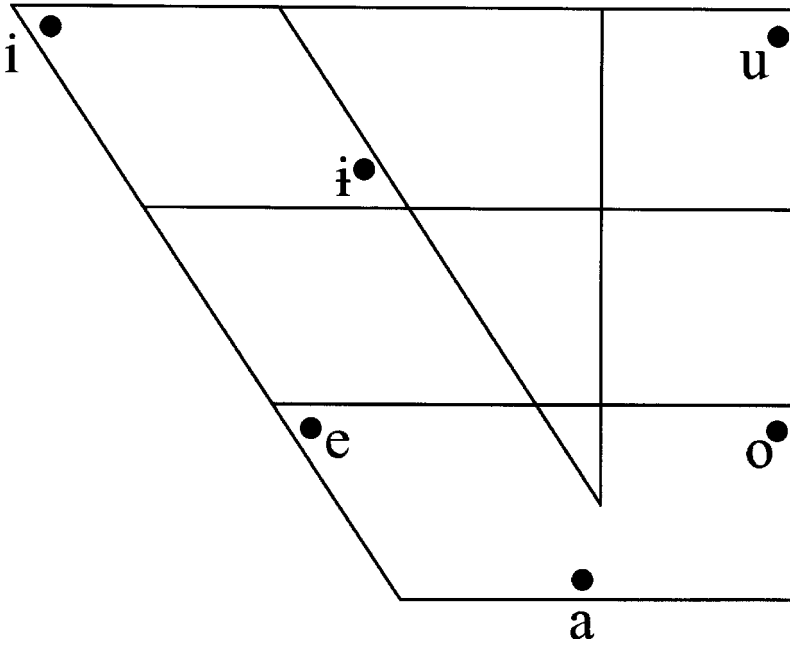


Figure 1 The first two formant frequencies in log(Hz) of a Polish male speaker (heavy line) and a female speaker (light line).

The first, standard figure shows the principal allophones of the Polish vowels in the IPA quadrilateral. The second figure represents them in a ($\log F_1$, $\log F_2$) acoustic plane as produced by two typical speakers, one male (PW) and the other female (AD). The values of the two variables are means based on measurements of the vowel ‘targets’ in a list of 100 one- and two-syllable words. There is little contextual allophony, but /e/ is half-close between palatals, as in [pjɛɕɲ] *pieśń* ‘song’ and /a/ is Cardinal 4 in this position, e.g. [dzɨɕaj] *dzisiaj* ‘today’.

The following commutation series illustrates the six vowels (a 2 × 3 system) functioning distinctively:

i : i : u

e : a : o

‘biti *bity* ‘beaten’ ‘biti *byty* ‘entities’ ‘buti *buty* ‘shoes’
 ‘beti *bety* ‘bedding (coll.)’ ‘bati *baty* ‘whips’ ‘boti *boty* ‘women’s high-boots (augm.)’

Prosody

Lexical stress (potential for phrasal accent) usually falls on the penultimate syllable, but there are various exceptions with antepenultimate stress, such as some lexemes derived from the Classical languages or some fully ‘Polonized’ foreign proper names: /foˈnetika/ *fonetyka* ‘phonetics’ or ‘phonetician (gen. sing.)’, /prezident/ *prezydent* ‘president’, /vaʃɨŋkton/ *Waszyngton*, /jɛrɔˈzɔlima/ *Jerozolima*. Allolexes of such lexemes with an added syllable in the ending are, however, ‘regular’; e.g. *fonetykami* /,fonetɨˈkami/ ‘phoneticians (instr. pl)’. There are also scattered native exceptions: /ʒɛtʃpɔˈspɔlita/ *rzeczpospolita* ‘republic’, /ɔˈkolitsa/ *okolica* ‘neighbourhood’, etc. Secondary lexical stress falls on the initial syllable in lexemes of four or more syllables, and often also in phonological words that include a proclitic: /ɛntsɨkloˈpedja/ *encyklopedia* ‘encyclopedia’, /naɔˈbraze/ *na obrazie* ‘in the picture’. This secondary stress becomes primary for emphasis, but there is a growing tendency, in certain styles of speech, to use initial stress even when no emphasis is implied. Primary (nuclear) and secondary (prenuclear) phrasal accents are intonational (Jassem 1961).

Intonation can be indicated with tone-accent marks that are similar to those used for English in the British tradition. On the assumption of five phonological levels: extra High, High, Mid, Low and extra Low, the tone-accent marks, being iconic, are self-explanatory. [ˀ] denotes a level nuclear tone and [ˁ] stands for durational (tertiary) accent. The last pitch accent before tone-unit boundary indicates the primary accent, i.e. the nuclear tone.

The transcription of the text uses spaces to indicate rhythm units rather than coinciding with the spaces used in ordinary writing. Polish conventional spacing is not very consistent.

Transcript

peˀvneɡo ɹazu || puwˀnotsni ˀvjatr i,swɔptse || spʃeˀtʃaliɕe || ˀktoznɨx
 jest ɕilˀpejʃi || ˀvwacɲe pʃeˀxodziw ˀdroɡoŋ jaciɕ ˀtʃwɔvjek || oviˀnenti
 ˀftɕepwi ˀpwaʃtʃ || ˀumu ˀvilice ˀvjents || zɛtenznɨx ˀkturi ˀpjerʃi zmuɕi
 pʃexodzon ˀtseɡo || abiˀzdjow ɔˀkritɕe || ˀbejɲdze uvaˀzani ɹacilˀnej ˀfego ||
 puwˀnotsni ˀvjatr ˀzatʃow ɔdˀrazu ˀdojɲɕ sˀtsawe ˀciwi || aleimˀmɔtsnej
 ˀdow || timˀcilˀnej poˀdruʒni ɔˀtulawɕe ˀfpwaʃtʃ || ˀvrefɕe puwˀnotsni
 ˀvjatr daw ˀspokuj || ˀftedi ˀswɔptse ɹaˀtʃewo pʃi ˀɡzevac, || afˀxfile
 ˀpuznej poˀdruʒni ɹdjow ˀpwaʃtʃ || ˀften ˀsposup || puwˀnotsni ˀvjatr ˀmuɕaw
 ˀpʃiznatɕ || zɛˀswɔptse jestɕilˀnejʃe ɔd ˀnego

Orthographic version

Pewnego razu Północny Wiatr i Słońce sprzeczały się, kto z nich jest silniejszy. Właśnie przechodził drogą jakiś człowiek owinięty w ciepły płaszcz. Umówili się więc, że ten z nich, który pierwszy zmusi przechodzącego, aby zdjął okrycie, będzie uważany za silniejszego. Północny Wiatr zaczął od razu dąć z całej siły, ale im więcej dął, tym silniej podróżny otulał się w płaszcz. Wreszcie Północny Wiatr dał spokój. Wtedy Słońce zaczęło przygrzewać, a w chwilę później podróżny zdjął płaszcz. W ten sposób Północny Wiatr musiał przyznać, że Słońce jest silniejsze od niego.

References

- DUKIEWICZ, L. (1995). Fonetyka [Phonetics]. In Wróbel, H. (ed.), *Gramatyka współczesnego języka polskiego: Fonetyka i fonologia* [A grammar of contemporary Polish: phonetics and phonology], 7–103. Kraków: Instytut Języka Polskiego PAN.
- JASSEM, W. (1961). *Akcent języka polskiego* [Polish accent] (Prace Językoznawcze 31). Kraków: Komitet Językoznawstwa PAN.
- STEFFEN-BATOGOWA, M. (1975). *Automatyzacja transkrypcji fonematycznej tekstów polskich* [Automatic phonemic transcription of Polish texts]. Warszawa: Państwowe Wydawnictwo Naukowe.