

Polish

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1. Language description

Polish is a West Slavic language and belongs to the Slavic branch of the Indo-European language family. Jassem (2003) characterises Polish as a typical consonant language due to a rich consonant system and the possibility of heavy consonant clusters. A cluster consisting of four consonants at the beginning of a word is not exceptional.

Polish has many palatal consonants. These consonants sound softer than the equivalents that are realised more to the front of the mouth. Another distinctive feature of Polish is its large number of sibilants. The rich sibilant inventory makes it difficult for non-native speakers to separate these phonemes from each other.

Polish has a relatively large number of nasal sounds. The test only contains one word with such a sound, namely the word for truck /tɕɛ̃zarufka/. The IPA symbol for a nasal sound is /~ / above the vocal. The pronunciation of the /ɛ̃/ can also be heard in the French word 'fin.'

On the Internet page (http://www.poolsonline.nl/?pagina=1_les), you can listen to short fragments of Polish. It is also possible to have words pronounced through Google Translate.

Consonant system

Table 1

Polish consonant system according to Jassem (2003)

	Coronal					Dorsal				
	Bilabial	Labiodental	Dental	Alveolar	Postalveolar	Palatal	Velar	Uvular	Pharyngeal	Glottal
plosives	p b			t d		(c ɟ) ¹	k g			
nasals	m			n		ɲ	(ŋ) ²			
tap flap										
fricatives		f v		s z	ʃ ʒ	ç ʝ	x			h
affricate				ts dz ³	tʃ dʒ	tɕ dʑ				
liquids				l						
semi-vowels						j	w			

¹These are allophones of the k and the g. ²just as in Dutch, does not occur as an independent phoneme. In Polish, it is a result of the nasal vowel that precedes it. ³The affricates form minimal pairs with the phoneme clusters.

Syllable structure

Polish is a morphologically rich language. Because of that, it contains relatively large number of long words with complex clusters of up to four consonants. These occur in the initial, medial, and final positions. Speakaboo only includes words with clusters of two consonants. These are tested in all positions. For example, in the word /xwopjɛts/ ((little) boy).

Note: The affricates are separate phonemes, not clusters. It is possible to form minimal pairs where affricate or cluster makes the difference in meaning.

Stress

Usually on the penultimate syllable.

2. Acquisition of consonants

Table 2

Acquisition of Polish consonants according to prof. Małgorzata Ročławska (University of Gdansk, 2014)

Age	Consonant
0 to 0;11	p t m n j
1;9 to 1;11	k
2;0 to 2;2	s x h
2;3 to 2;5	b f u
2;6 to 2;11	l r
3;0 to 3;2	d
later	Ń

In professor Małgorzata Ročławska's overview (table 2), it is not indicated whether there is a difference in acquisition order between consonants in initial or final position.

3. Common phonological processes

The processes discussed below come from the literature about phonological development in Polish (see sources). The examples come from the study among normally developing Polish toddlers in the Netherlands (Holstvoogd, 2015).

Gliding	rover→wover, krova→kwova, balon→bajon
Lateralisatie	rover→lovel, zegar→zegal, krova→klova
Fronting	ɟafa→safa, ɟaba→zaba, miɟ→mis, kçeswo→kseswo, ɟapka→tsapka
Reductie cluster/	tsirk→tsik, xwopjets→xwopjes, klutɟ→klut
affricaat	dʒem→dɛm/zɛm/ʒɛm (<i>mogelijk interferentie vanuit het NL</i>) ɟapka→tapka/sapka, kurtɟak→kurtak, tsirk→sirk/tirk, mlɛko→mɛko
Coalescence	swopɲ→vopɲ/foɲ

4. Lexical variation

In Polish child directed speech, many diminutives are used. This means the diminutives will likely be acquired earlier and used more often by the children.

Word	IPA									Lexical variation
dom (house)	d	o	m							domək (cottage)
mysz (mouse)	m	ɨ	ʃ							mɨʃka (little mouse)
koń (horse)	k	o	ɲ							koɲik (little horse)
tatuś (father)	t	ɑ	t	u	ɕ					tata (daddy)
ryba (fish)	r	ɨ	b	a						rɨpka (little fish)
krzesło (chair)	k	ɕ	ɛ	s	w	o				kɕɛsɛwko (tiny chair)
lalka (doll)	l	a	l	k	a					lala (doll) lalki (little doll)
doktor (doctor)	d	o	k	t	o	r				pan (mister) ləkɔʃ (doctor)
małpa (ape)	m	a	w	p	a					mawpka (monkey)
pies (dog)	p	j	ɛ	s						pjɛsɛk (doggy)
krowa (cow)	k	r	o	v	a					krufka (little cow)
szafa (closet)	ʃ	a	f	a						ʃafka (cabinet)
pudełko (box)	p	u	d	e	w	k	o			karton (box) pudwo (box)
kurczak (chicken/chick)	k	u	r	tʃ	a	k				kura (chicken)
butelka (bottle)	b	u	t	ɛ	l	k	a			butɛlki (little bottle)
chłopiec (boy)	x	w	o	p	j	ɛ	ts			xwoptjek (little boy)
ciężarówka (truck)	t ɕ	ɛ	ʒ	a	r	u	f	k	a	auɔ (car)

Figure 1. lexical variation according to the interpreter

5. Results of typically developing Polish toddlers

In the spring of 2015, 16 Polish children between 30 and 48 months old were tested with the paper version of Speakaboo from Kentalis (Holstvoogd, 2015). The children attended a regular preschool and, to the knowledge of their teachers, had a normal (language) development. The average age of the children was 38.1 months.

The test / lotto game (paper version of Speakaboo at the time) was carried out by a Polish interpreter after instructions from the researcher. The children were to match the displayed image with the lotto sheet and then name the word. If the child did not spontaneously name the word, the word would be said for repetition. If the child also would not repeat the word, the researcher would continue to the next word.

All expressions of the children are scored on a score sheet. In total, the test contains 36 words with 96 consonants, if the clusters and affricates are counted as one consonant.

Note: This is different in the current version of the score sheets; the consonants of a cluster are counted separately. If for the cluster /xw/, the child only realises the /x/, then the /x/ counts for the number of correct consonants. This means the PCC may end up a little higher with the current version of the score sheet.

Because not all words could be assessed (not spoken or not comprehensible), it was not possible to assess 96 consonants for all children. This was taken into account in the calculation of the scores. The averages of the group are shown in Table 3.

Table 3

Average scores of normally developing Polish children

Age	38.1 months
Number of consonants incorrect	20
Number of words not spontaneously named	11.4
Number of consonants accessed	84.3
Number of consonants correct	64 (84-20)
Percentage Consonants Correct (PCC)	76.2 (64/84*100)
<i>Source: Holstvoogd (2015)</i>	

Example of an average score

Girl, 42 months

Number incorrect	22
Words repeated:	5
Not assessable:	1 word (with 1 consonant)
Assessed:	96-1=95 consonants
Correct:	95-22=73 consonants
PCC	73/95*100=76.8

Note: with the word for doll, /lalka/, the girl says [lala]. This is a permissible variant, which is why leaving out the /k/ is not counted as incorrect. /lalka/ actually means 'little doll' and /lala/ means 'doll'.

X: klank is verkeerd gerealiseerd

∅: klank is weggelaten

NG: woord is nagezegd

Woord	IPA										NG	Realisatie
1.dom (huis)	d	ɔ	m									
2.nóz (mes)	n	u	X									n u s
3.mysz (muis)	m	i	X									m i s
4.koń (paard)	k	ɔ	ɲ									
5.kot (poes)	k	ɔ	t									
6.banan (banaan)	b	a	n	a	n							
7.tatuś (vader)	t	a	t	u	ɕ						✓	
8.pająk (spin)	p	a	j	ɔ	ŋ	k					✓	
9.lew (leeuw)	l	ɛ	f									
10.guziki (knopen)	g	u	j	i	k	i						
11.ucho (oor)		u	x	o								n t b
12.ryba (vis)	X	i	b	a								l r b a
13.krzesło (stoel)	k	X	ɛ	s	w	o						k s e s w o
14.balon (ballon)	b	a	l	ɔ	n							
15.lalka (popje)	l	a	l	X	a							l a l a
16.doktor (dokter)	d	ɔ	k	t	ɔ	r						
17.małpa (aap)	m	a	w	p	a						✓	
18.pies (hond)	p	j	ɛ	s								
19.rower (fiets)	X	o	v	ɛ	X							l o v e l
20.krowa (koe)	k	X	o	v	a							k l o v a
21.zegar (klok)	z	ɛ	g	a	X							z e g a l
22.stoń (olifant)	s	w	ɔ	ɲ								
23.czapka (pet)	X	a	p	k	a							s a p k a
24.dżem (jam)	X	ɛ	m									s e m
25.żaba (kikker)	X	a	b	a								s a b a
26.stopa (voet)	s	t	o	p	a							
27.szafa (kast)	X	a	f	a								s a f a
28.mleko (melk)	m	⊕	ɛ	k	o							m e k o
29.pudełko (doos)	p	u	d	ɛ	w	k	o				✓	
30.klucz (sleutel)	k	l	u	X								k l u s
31.cyrk (circus)	X	i	r	k								s i r k
32.kurczak (kip)	k	u	⊕	X	a	k						k u s a k
33.piżama (pyjama)	p	i	X	a	m	a						p i s a m a
34.butelka (fles)	b	u	t	ɛ	l	k	a					
35.chłopiec (jongen)	x	w	o	p	j	ɛ	X					x w o p j e s
36.ciężarówka (vrachtwagen)	X	X	X	a	r	u	f	k	a		✓	s e n s a r u f k a
Totaal aantal consonanten fout											A.	22
Totaal aantal consonanten geproduceerd											B.	106-1=105
106-aantal consonanten van niet geproduceerde woorden												
(B-A) / B * 100											PCC	79,05

Speakaboo 9.0 - scoreformulier Pools

Figure 2: Example score sheet (consonants in clusters are counted as individual consonants).

6. Sources

Literature

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Other sources

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