

## THE DISTRIBUTION OF NON-SYLLABIC PHONEMES IN ENGLISH AND POLISH

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0.0. The distinction between vowels and consonants has been made on two levels:

1. Phonetic. Vowels are defined as a class of sounds whose degree of opening of the vocal tract is not smaller than that for [i]. All other sounds are labelled consonants (Cf. Zabrocki 1961, Chomsky and Halle 1968).
2. Functional. Vowels are primarily syllabic, consonants — non-syllabic.

These two classifications overlap and hence such terms as non-syllabic vowels (or semivowels) and syllabic consonants have been introduced. Pike's (1947) distinction between vowel : consonant and vocoid : contoid does not seem to solve the problem. For example, in the English diphthong [iə] the narrower element [i] has to be labelled [+peak], while a more open element [ə] has to be marked as [-peak] (Cf. Abele 1924 : 5). But the Polish word *aorta* "aorta" with the stress on [ɔ] consists of three syllables. From the functional point of view [a] will be then the only true vowel. On the other hand, in languages like Bella Coola (Cf. Greenberg 1962) and in some Eastern Sudanic languages (Cf. Tucker 1940) spirants are regularly syllabic. Thus, from the functional point of view, stops will be the only true consonants.

0.1. The analyst meets with a number of difficult problems. For example it is not quite clear why one should distinguish the [w] in [wʌn] *one* and the [u] in [hau] *how* or between the [j] in [ja:d] *yard* and the [i] in [bai] *by*. According to Gimson (1966) it is rather the practical aspect (i.e. simplicity) than any other that makes the linguist reject such diphthongs as [wʌ] and [ja:]. It is true that [w] and [j] are narrower than [u] and [i], but when the articulation is prolonged, they change into [u] and [i], respectively (Cf. Wierzchowska 1971). Thus it is

the length and not the degree of opening that seems to be relevant here. Similarly, Francis (1965 : 188) transcribes *littler* /litlɹ/ and maintains that the word consists of three syllables; /i/, the second /l/ and /r/ are syllabic according to him.

0.2. It seems therefore advisable to use the terms vowel and consonant only in the phonetic sense and the terms syllabic and non-syllabic in the functional sense. The syllabic : non-syllabic distinction will naturally vary from language to language and it is hardly possible to work out a universal classification of sounds based on a certain number of distinctive features as Chomsky and Halle (1968) propose.

1.0. In this article we shall discuss the distribution of non-syllabic phonemes in English (British) and Polish. The traditional diphthongs have been preserved and our distinction between [w] and [j] and [u] and [ɪ] is functional. The [w] in [wʌn] and the [j] in [ja:d] will be marked [-syllabic], while the [v] in [av] and the [ɪ] in [aɪ] will be labelled  $\begin{bmatrix} +\text{syllabic} \\ -\text{peak} \end{bmatrix}$ , [a] will have the features  $\begin{bmatrix} +\text{syllabic} \\ +\text{peak} \end{bmatrix}$ .

1.1. The analysis is based on Zabrocki's (1962) phoneme theory, which was briefly summarized in my article "The Syllabic Structures of English and Polish" (Awedyk 1973: 84-90). The analysis is limited to pre- (in word initial) and post-syllabic (in word final) positions. In word medial position, when relevant, the pre-non-syllabic position will also be discussed. The clusters of non-syllabic phonemes were presented in the above mentioned article.

1.2. Below we present the inventories of English and Polish non-syllabic phonemes:

English: /w j h r l n ŋ m ð θ v f z s ʒ f d̥ ʒ t̥ d t b p g k/ (Cf. Gimson 1966).

Polish: /w j x r l n p m v f z s ʒ f ʒ ś dz ts d̥ ʒ t̥ d̥ ʒ t̥ d̥ t b g k/ (Cf. Jassem 1966, Łobacz 1971, Wierzchowska 1971.)

2.0. The distribution of English non-syllabic phonemes (A= allophone, M=minus phone, if unmarked=plus phone).

/w/	<i>well</i>	<i>award</i>	M
/j/	<i>yard</i>	<i>lawyer</i>	M
/h/	<i>he</i>	<i>behave</i>	M
/r/	<i>read</i>	<i>hurry</i>	M
/l/	<i>lock</i>	<i>silver</i> A	<i>hill</i> A
		<i>saline</i>	
/n/	<i>nice</i>	<i>banner</i>	<i>son</i>
/ŋ/	M	<i>stinger</i>	<i>sing</i>

/m/	<i>my</i>	<i>summer</i>	<i>some</i>
/ð/	<i>that</i>	<i>rather</i>	<i>bathe</i>
/θ/	<i>thing</i>	<i>method</i>	<i>path</i>
/v/	<i>value</i>	<i>never</i>	<i>five</i>
/f/	<i>film</i>	<i>coffee</i>	<i>half</i>
/z/	<i>zip</i>	<i>cosy</i>	<i>nose</i>
/s/	<i>sun</i>	<i>placid</i>	<i>notice</i>
/ʒ/	<i>gigolo</i>	<i>pleasure</i>	<i>rouge</i>

It has to be noted that in initial and final positions /ʒ/ appears only in French loan-words. An alternative pronunciation with /d̥ʒ/ is also permissible (OED 1933).

/ʃ/	<i>shake</i>	<i>caution</i>	<i>wash</i>
/d̥ʒ/	<i>job</i>	<i>margin</i>	<i>bridge</i>
/t̥ʃ/	<i>chair</i>	<i>duchess</i>	<i>which</i>
/d/	<i>day</i>	<i>tawdry</i> A	<i>nod</i>
		<i>leader</i>	
/t/	<i>time</i>	<i>nitrate</i> A	<i>what</i>
		<i>matter</i>	
/b/	<i>beam</i>	<i>lobby</i>	<i>rib</i>
/p/	<i>pick</i>	<i>leopard</i>	<i>stop</i>
/g/	<i>gay</i>	<i>eager</i>	<i>big</i>
/k/	<i>come</i>	<i>rocket</i>	<i>duck</i>

2.1. The most characteristic feature of the distribution of English non-syllabic phonemes is the absence of neutralization, i.e., no phoneme can be realized as a neuter phone. The phonemes /w j h r/ occur as minus phones in final position, and /ŋ/ is realized as a minus phone in initial position. /l/ has an alveolar-velar allophone in medial pre-non-syllabic position and in final position. The phonemes /d t/ have retroflex allophones in medial (and initial) position in the context in front of /r/.

3.0. The distribution of Polish non-syllabic phonemes (A=allophone, N=neuter phone, if unmarked=plus phone).

/w/	<i>lawka</i> "desk"	<i>kolo</i> "circle"	<i>dól</i> "pit"
/j/	<i>ja</i> "I"	<i>krajać</i> "cut"	<i>bój</i> "battle"
/x/	<i>chór</i> "choir"	<i>machać</i> "wave"	<i>dech</i> "breath"
/r/	<i>rama</i> "frame"	<i>para</i> "vapour"	<i>ser</i> "cheese"
/l/	<i>luty</i> "February"	<i>wola</i> "will"	<i>bal</i> "dance"
/n/	<i>nowy</i> "new"	<i>banku</i> A "bank" Loc.	<i>syn</i> "son"
		<i>rana</i> "wound"	
/p/	<i>nie</i> "no"	<i>koniec</i> "end"	<i>koń</i> "horse"
/m/	<i>mowa</i> "speech"	<i>tama</i> "dam"	<i>dom</i> "house"

/v/	<i>wilk</i> "wolf"	<i>ławka</i> N "desk"	<i>łów</i> N "hunting"
/f/	<i>fala</i> "wave"	<i>mowa</i> "speech"	<i>traf</i> "coincidence"
/z/	<i>za</i> "beyond"	<i>kozka</i> N "she-goat"	<i>raz</i> N "blow"
		Dim.	
		<i>kazać</i> "order"	
/s/	<i>sen</i> "sleep"	<i>kosa</i> "scythe"	<i>nos</i> "nose"
/ʒ/	<i>żaba</i> "frog"	<i>łyżka</i> N "spoon"	<i>mąż</i> N "husband"
		<i>morze</i> "sea"	
/ʃ/	<i>szary</i> "grey"	<i>dusza</i> "soul"	<i>mysz</i> "mouse"
/ʒ/	<i>ziemia</i> "earth"	<i>buźka</i> N "mouth"	<i>maż</i> N "grease"
		Dim.	
		<i>bazia</i> "catkin"	
/ɐ/	<i>siostra</i> "sister"	<i>tysiąc</i> "thousand"	<i>ktoś</i> "somebody"
/d͡z/	<i>dzyndzyk</i> "pendant"	<i>możnowładztwo</i> N "the magnates"	<i>widz</i> N "spectator"
		<i>wiedza</i> "knowledge"	
	/d͡z/ is extremely rare in initial pre-syllabic position.		
/ts/	<i>cel</i> "aim"	<i>lica</i> "face"	<i>owoc</i> "fruit"
/d͡z/	<i>dżem</i> "jam"	<i>mózdzka</i> N "brains"	<i>brydź</i> N "bridge"
		Gen. Sg.	
		<i>drożdże</i> "yeast"	
/tʃ/	<i>czapka</i> "cap"	<i>paczyć</i> "warp"	<i>klacz</i> "mare"
/d͡z/	<i>działać</i> "act"	<i>bodźca</i> N "stimulus"	<i>śledź</i> N "herring"
		Gen. Sg.	
		<i>miedziany</i> "copper"	
/tɕ/	<i>ciasny</i> "tight"	<i>pociąg</i> "train"	<i>nać</i> "vegetable leaves"
/d/	<i>dom</i> "house"	<i>wypadki</i> N "Acci- dent" N. Pl.	<i>jad</i> N "poison"
/t/	<i>tor</i> "track"	<i>luty</i> "February"	<i>brat</i> "brother"
/b/	<i>but</i> "shoe"	<i>żabka</i> N "frog" Dim.	<i>dąb</i> N "oak-tree"
		<i>niebo</i> "sky"	
/p/	<i>pora</i> "season"	<i>zupa</i> "soup"	<i>stop</i> "alloy"
/g/	<i>gęś</i> "goose"	<i>noga</i> "leg"	<i>wróg</i> N "enemy"
/k/	<i>kosz</i> "basket"	<i>pukać</i> "knock"	<i>rok</i> "year"

3.1. The distribution of Polish non-syllabic phonemes shows the following characteristic features:

- no phoneme is realized as a minus phone in any position
- in final and medial position when followed by a voiceless phoneme, voiced phonemes are realized as neuter phones, i.e., the opposition voiced : voiceless is neutralized in those positions

/ /	Initial		Medial		Final	
	Engl.	Pol.	English	Polish	English	Polish
w	w	P	P	P	M	P
j	j	P	P	P	M	P
h	x	P	P	P	M	P
r	r	P	P	P	M	P
l	l	P	P	A	P	A
n	n	P	P	P	A	P
—	ɲ	—	P	—	—	P
ŋ	—	M	—	P	—	—
m	m	P	P	P	P	P
ð	—	P	—	P	—	—
θ	—	P	—	P	—	—
v	v	P	P	P	N	P
f	f	P	P	P	P	P
z	z	P	P	P	N	P
s	s	P	P	P	P	P
ʒ	ʒ	P	P	P	N	P
ʃ	ʃ	P	P	P	P	P
—	ʒ	—	P	—	N	P
—	ʃ	—	P	—	—	P
—	d͡z	—	P	—	N	P
—	ts	—	P	—	P	—
d͡z	d͡z	P	P	P	N	P
tʃ	tʃ	P	P	P	P	P
—	d͡z	—	P	—	N	P
—	tɕ	—	P	—	—	P
d	d	P	P	A	P	N
t	t	P	P	A	P	P
b	b	P	P	P	N	P
p	p	P	P	P	P	P
g	g	P	P	P	P	N
k	k	P	P	P	P	P

e) allophonic (in Zabrocki's 1962 terminology) realization is extremely rare in Polish, only one phoneme /n/ has a velar allophone in medial position when followed by /g k/.

4.0. The comparison of the distribution of English and Polish non-syllabic phonemes is presented in the table (A=allophone, M=minus phone, N=neuter phone, P=plus phone).

4.1. The comparison of the distribution of non-syllabic phonemes in English and Polish reveals two basic differences:

1. The lack of neutralization in English. In Polish the opposition voiced : voiceless is neutralized in final position and in medial position in front of voiceless phonemes.
2. The minus phone realization is not found in Polish, i.e., no phoneme can be realized as a minus phone in any position. In English /w j h r/ and /ŋ/ are realized as minus phones in final and initial positions, respectively.

In word initial pre-syllabic position there are almost no differences in the distribution of non-syllabic phonemes. The greatest differences seem to appear in word final position: in English /w j h r/ occur as minus phones, while in Polish all voiced phonemes are realized as voiceless neuter phones in this position.

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