

ILLUSTRATIONS OF THE IPA

Russian

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Russian (ISO 639-3 *rus*) is an Indo-European East Slavic language spoken by about 162 million people as their first language and about another 110 million as their second language (Lewis, Simons & Fennig 2013), mainly in the Russian Federation (where it is the native language of about 80% of the population, see Berger 1998, Federal'naja služba gosudarstvennoj statistiki (Federal State Statistics Service) 2012: 228–232) and in the other former republics of the USSR (among which it is co-official in Belarus, Kazakhstan and Kyrgyzstan). Large groups of Russian speakers (so-called heritage speakers) also live in Europe (especially Germany: almost 3 million or 3.5% of the population, Brehmer 2007: 166–167), Israel (about 1 million or 20%, Glöckner 2008) and the United States (850,000 or 0.3%, Shin & Kominski 2010: 6).

Traditionally, two main pronunciation standards are recognised, those of Moscow and St. Petersburg (Comrie, Stone & Polinsky 1996, Verbickaja 2001). The differences between the two standards, while still fairly prominent in the first half of the 20th century, have greatly lessened in contemporary Russian. The emergence of a general pronunciation standard that integrates the features of both Moscow and St. Petersburg pronunciation is discussed in Comrie et al. (1996) and Verbickaja (2001).

The present Illustration is based on the recording of a male speaker in his early forties, born and college educated in St. Petersburg, whose pronunciation is representative of the St. Petersburg standard pronunciation. This illustration is thus representative of the younger pronunciation norm that has emerged in the past 30–40 years as opposed to the accounts of Russian phonetics found, for instance, in Jones & Ward (1969) and Avanesov (1972).

The examples below are transliterated according to the international scholarly system (see e.g. Kempgen n.d., Timberlake 2004) as follows:

а б в г д е ё ж з и й к л м н о п р с т у ф х ц ч ш щ ъ ы ь э ю я
a b v g d e ě ž z i j k l m n o p r s t u f x c č š šč " y ' è ju ja

The broad transcriptions given below in slant brackets are phonemic (within the framework of the St. Petersburg School of Phonology, e.g. Bondarko 1998, 2009), while the narrow

transcriptions in square brackets represent finer phonetic details, and are based on the actual pronunciation of our speaker.

Consonants

The system of consonants in Russian is characterised by the phonological opposition of palatalised ('soft') and non-palatalised ('hard') consonants that encompasses almost all consonants, with very few exceptions. Thus, /ʃ ʒ ts/ have no palatalised counterparts, while /tʃʲ/ and /ʃʲ:/ have no non-palatalised counterparts. All non-palatalised consonants are realised with velarisation (e.g. Bolla 1981) which is particularly noticeable in /l/ [ɫ] and /ʃ ʒ/ [ʃʷ ʒʷ]. The table below shows the consonant phonemes of Russian. Only the palatalisation of consonants is marked in transcription.

	Bilabial	Labiodental	Dental/ Alveolar	Post- alveolar	Palatal	Velar
Plosive	p pʲ	b bʲ	t tʲ	d dʲ		k kʲ
Affricate			ts	tʃʲ		
Nasal	m mʲ		n nʲ			
Trill			r rʲ			
Fricative		f fʲ	v vʲ	s sʲ	z zʲ	ʃ ʃʲ:
Approximant					j	
Lateral approximant			l lʲ			

p	/ˈpalʲt͡si/	<i>pal'cy</i>	'fingers'	r	/ˈrat/	<i>rad</i>	'(am etc.) glad'
pʲ	/ˈpʲalʲt͡si/	<i>pjal'cy</i>	'embroidery hoop'	rʲ	/ˈrʲat/	<i>rjad</i>	'row'
b	/ˈbas/	<i>bas</i>	'bass'	s	/ˈsat/	<i>sad</i>	'garden'
bʲ	/ˈbʲasʲ/	<i>bjaz'</i>	'calico'	sʲ	/ˈsʲatʲ/	<i>sjad'</i>	'sit' (imperative)
m	/ˈmala/	<i>malo</i>	'little, not enough'	z	/ˈzapax/	<i>zapax</i>	'smell' (noun)
mʲ	/ˈmʲala/	<i>mjala</i>	'(she) crumpled'	zʲ	/ˈzʲapkʲij/	<i>zjabkij</i>	'sensitive to cold'
f	/ˈfota/	<i>foto</i>	'photo'	t͡s	/ˈt͡sarʲ/	<i>car'</i>	'tzar'
fʲ	/ˈfʲodar/	<i>Fëdor</i>	'Fëdor' (name)	tʃʲ	/ˈtʃʲari/	<i>čary</i>	'charms'
v	/ˈvalʲik/	<i>valik</i>	'bolster'	ʃʲ:	/ˈʃʲ:uka/	<i>ščuka</i>	'pike'
vʲ	/ˈvʲalʲit/	<i>vjalit</i>	'(s/he) dry-cures'	ʃ	/ˈʃar/	<i>šar</i>	'ball'
t	/ˈtapka/	<i>tapka</i>	'slipper'	ʒ	/ˈʒar/	<i>žar</i>	'heat'
tʲ	/ˈtʲapka/	<i>tjapka</i>	'chopper' (tool)	j	/ˈjama/	<i>jama</i>	'pit'
d	/ˈdom/	<i>dom</i>	'house'	k	/ˈkot/	<i>kot</i>	'tomcat'
dʲ	/ˈdʲorn/	<i>dërn</i>	'turf'	kʲ	/ˈtkʲot/	<i>tkët</i>	'(s/he) weaves'
n	/ˈnos/	<i>nos</i>	'nose'	g	/ˈgot/	<i>god</i>	'year'
nʲ	/ˈnʲos/	<i>nës</i>	'(he) carried'	gʲ	/ˈgʲote/	<i>Gëte</i>	'Goethe'
l	/ˈlot/	<i>lot</i>	'plummet'	x	/ˈxunta/	<i>xunta</i>	'junta'
lʲ	/ˈlʲot/	<i>lëd</i>	'ice'	xʲ	/ˈxʲubner/	<i>Xjubner</i>	'Hübner' (name)

Note that in the examples above the consonants are represented before non-front vowels. Only palatalised consonants and /j/ occur before [i], and in indigenous words only palatalised

consonants and the non-paired consonants /t͡s ʒ j/ occur before /e/, whereas in loanwords non-palatalised consonants can occur before /e/, e.g. *test* [tʲɛstʲ] ‘test’, *tire* [tʲiʲrɛ] ‘dash’.

Non-palatalised dental consonants are laminal denti-alveolar, velarised. The affricate [t͡s] has no palatalised counterpart in the system of consonants, and its palatalisation, although evident in some regional accents of Russian, is considered emphatically non-standard.

The realisation of the palatalised (‘soft’) consonants involves the secondary articulation of palatalisation in its purest form (the rising of the front of the tongue to the hard palate) only in bilabials and labiodentals. In other consonants, palatalisation is accompanied by further articulatory adjustments that affect both place and manner of articulation (Bondarko 1998, 2005). For instance, the point of constriction of /tʲ/ and /dʲ/ is retracted compared to non-palatalised laminal denti-alveolar /t/ and /d/ and they are normally affricated [tʲʂ] [dʲʂ]; /r/ is an alveolar trill in careful pronunciation, but its palatalised counterpart /rʲ/ is usually realised as a tap [rʲ]. In the palatalised counterparts of velar /k g x/ the point of constriction is fronted so that they are realised as post-palatal [kʲ gʲ xʲ] (see Keating & Lahiri 1993). Note that /kʲ gʲ xʲ/, while common in combination with front vowels (e.g. *kislo* [kʲiʲsʲlɔ] ‘sour’, *girja* [gʲiʲrʲjɐ] ‘weight’, *xitryj* [xʲiʲtrʲij] ‘cunning’, *kepka* [kʲɛpkə] ‘cap’, *gercog* [gʲɛrʲtsək] ‘duke’, *sxema* [sxʲɛmɐ] ‘scheme’) are rare before non-front vowels and occur in this position mainly in loanwords and foreign names, e.g. *Gëte* [gʲɔʲtɛ] ‘Goethe’, *Kjaxta* [kʲaʲxtə] ‘Kyakhta’ (a town in Buryatia, Russia), and a single indigenous verb: *tkët* [tʲkʲɔʲtʲ] ‘(he) weaves’.

The combinations of non-palatalised velars and the /i/ vowel /ki gi xi/ are rare and found only in a handful of loanwords and across word boundaries, e.g. *kyš* [kʲiʲʂ] ‘shoo’ (interjection), *Arxyz* [Arʲxʲis] ‘Arkhyz’ (a territory in Karachay-Cherkessia); *k Igor’u* [kʲɪgʲərʲu] ‘towards Igor’, *dvuxëtažnyj* [dvuxʲiʲtaʲʒnʲij] ‘two-storeyed’.

Voicing is used contrastively in Russian; voiced consonants are fully voiced, voiceless plosives are always unaspirated, e.g. *tok* [tʲɔʲk] ‘current’, *kot* [kʲɔʲtʲ] ‘tomcat’. The distribution of consonants is such that only voiceless but no voiced obstruents occur word-finally, e.g. *goda* [gʲɔʲda] ‘years’, *god* [gʲɔʲtʲ] ‘year’.

In sequences of consonants, both within words and across word boundaries, various kinds of regressive assimilation take place. For example, if the second consonant is a voiced obstruent (other than /v vʲ/), the preceding consonant is also voiced, e.g. *gorod* [gʲɔʲrɔʲtʲ] ‘city’ but *gorod bol’soj* [gʲɔʲrɔʲd bʲɔʲlʲʂɔʲj] ‘(the) city is big’ (Verbickaja 2001). Under certain conditions, assimilation can also affect palatalisation or even the whole place and/or manner of articulation, e.g. *bandit* [bʲɔʲndʲiʲtʲ] ‘bandit’, *bez šuma* [bʲɪʲʂʊmɐ] ‘without a noise’. In such cases we can also find sounds that otherwise represent gaps in the phoneme inventory, e.g. [ɣ] as a voiced allophone of /x/ in *mox zelënyj* [mʲɔʲx zʲɪʲlʲɛnʲij] ‘the moss (is) green’, [ɣʲ] as a voiced and palatalised allophone of /x/ in *drugix gimnazij* [druɡʲiʲxʲ gʲimnʲaʲzʲij] ‘of other grammar schools’, [dʒ] as a voiced allophone of /t͡s/ in *otec doma* [ʌʲtʲɛdʒ.ʲdʲɔʲmɐ] ‘father is at home’, [ʃ] as an allophone of /s/ in *s čaem* [ʲʃʲtʲʂɛjɪm] ‘with tea’ (Kasatkin 2006: 44), [dʒʲ] as a voiced allophone of /tʲʂ/ in *doč bol’na* [dʲɔʲdʒʲ bʲɔʲlnɐ] ‘(the) daughter is ill’. Sonorants can be realised as devoiced when word-initial and word-final in the vicinity of voiceless obstruents, e.g. *teatr* [tʲɪʲaʲtr̥] ‘theatre’.

Labiodental fricatives /v/ and /vʲ/ are often weakly articulated [v̥ vʲ] or are realised as approximants [ʋ ʋʲ], particularly in spontaneous speech. The palatal /j/ can be realised as an approximant [j] (especially in the onset of a stressed syllable), a semivowel [i̯] (especially when unstressed), or emphatically as a fricative [j̥] or even a devoiced fricative [ç].

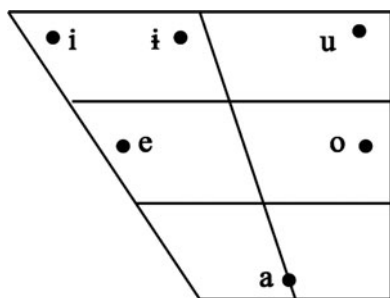
Fricatives /ʃ ʒ/, as in *šar* /ʃar/ ‘ball’ and *žar* /ʒar/ ‘heat’, can be realised either as flat velarised postalveolars [ʃʲ ʒʲ] or as retroflexes [ʂ ʐ] (Ladefoged & Maddieson 1996, Hamann 2004) and tend to be slightly labialised even in the context of unrounded vowels. They have no palatalised counterparts in the system of consonant phonemes; their palatalisation is considered non-standard. This also precludes their assimilation to a following palatalised consonant, e.g. *roždenie* [rʲɔʲʒdʲɛnʲij] ‘birth’, *bašnja* [bʲɔʲʂnʲij] ‘tower’. The long fricative /ʃʲ:/, as in *ščuka* [ʃʲʊ:kə] ‘pike’, *sčast’e* [ʃʲʌ:sʲtʲɪj] ‘happiness’, is a laminal palatalised post-alveolar (or alternatively, an alveolo-palatal [çʲ]). (The former bisegmental pronunciation of

/ʃʲ/ as [ʃʲʲ], often cited as a characteristic feature of the older St. Petersburg norm (e.g. Jones & Ward 1969), is now clearly obsolete (see Comrie et al. 1996, Verbickaja 2001, Timberlake 2004.) The /ʃʲ/ consonant has no voiced counterpart in the system of phonemes. However, in conservative Moscow standard and only in a handful of lexical items the combination /ʒʒ/ may be pronounced with palatalisation, e.g. *drožži* ‘yeast’ as [ˈdʁʊɔʒʲʲ] instead of [ˈdʁʊɔʒʲ], although this realisation is now also somewhat obsolete.

Long consonants are found as realisations of biphonemic sequences particularly across morpheme boundaries, e.g. *otdel* [ɐˈdʲɛːɫʲ] ‘department’ and *rassada* [rɐˈsʲaːdɐ] ‘seeding’, and also in foreign words, e.g. *massa* [ˈmaːsʲə] ‘mass’, *kolonna* [kɐˈlʲɔːnɐ] ‘pillar’ (where the current general tendency appears to be for the Russian speakers to shorten them, see Cubberley 2002).

Clusters of three or more underlying consonants are often simplified, e.g. *pozдно* [ˈpʊɔʒnɐ] ‘late’, *peterburgskij* [pʲɪtʲɪrˈburʲskʲɪj] ‘of St Petersburg’. Consonants and consonant clusters before /o/ and /u/ are labialised, e.g. *stul* [ˈsʲwʲʊɫʲ] ‘chair’.

Vowels



CVC				CʲVCʲ			
/i/				[ˈpʲiːlʲɪ]	<i>pili</i>	‘(we, you, they) drank’	
/ɨ/	[ˈpʲɨːɫʲ]	<i>pyl</i>	‘ardour’				
/e/	[ˈʃɛːstʲ]	<i>šest</i>	‘pole’	[ˈtʲʲɛːsʲtʲ]	<i>čestʲ</i>	‘honour’	
/o/	[ˈstʲɔːpʲɪ]	<i>stopy</i>	‘feet’	[ˈstʲʲɔːpʲɪɲ]	<i>Stěpin</i>	‘of Stěpa’ (name)	
/u/	[ˈtʲʊːkʲ]	<i>luk</i>	‘onion’	[ˈlʲʲʊːkʲɪ]	<i>ljuki</i>	‘hatches’	
/a/	[ˈsʲɑːtʲ]	<i>sad</i>	‘garden’	[ˈsʲʲæːtʲ]	<i>sjadʲ</i>	‘sit’ (imperative)	

Russian has six vowels, /i ɨ e a o u/ (the above chart is based on Bondarko 1998). Vowel quality varies substantially depending on whether the vowel occurs in stressed or in unstressed syllables: in unstressed syllables, all vowels are subject to reduction. Furthermore, the realisation of the vowels varies as a function of consonantal context: vowels are more fronted after or before and particularly between palatalised consonants than when surrounded by non-palatalised consonants. Thus, for example, the /a/ vowel gets progressively more front in CVCʲ, CʲVC, and CʲVCʲ contexts relative to CVC context. When adjacent to only one palatalised consonant (CVCʲ or CʲVC), it is a diphthongoid because it accommodates both to the velarisation and to the palatalisation of the adjacent consonants, e.g. *sad* [ˈsʲɑːtʲ] ‘garden’, *brosatʲ*, [brɐˈsʲɑːtʲ] ‘to throw’, *vprisjadku* [fprʲɪˈsʲɪˈɑːtku] ‘in squatting position’, *sjadʲ* [ˈsʲʲæːtʲ] ‘sit down!’.

There are conflicting views on the phonological status of the [i] and [ɨ] vowels in Russian linguistics. As the two vowels [i] and [ɨ] are in near-complementary distribution, with [i] occurring after palatalised consonants and [ɨ] after non-palatalised consonants, they may be seen as one phoneme /i/ only, having two allophones [i] and [ɨ] (Avanesov 1972, 1974;

Cubberley 2002) or (as they are treated here) as two separate phonemes (Halle 1959, Plapp 1996, Bondarko 1998, Verbickaja 2001), see also discussion in Bernštejn (1996), Cubberley (2002) and Timberlake (2004). Both vowels can be realised word-initially in identical context, e.g. in the letter names *i* [i] for и vs. *y* [ɨ] for ы or in the dialectological terms *ikan* 'e [i'kənʲɪ] 'merger of unstressed /e/ and /i/ after palatalised consonants' vs. *ykan* 'e [ɨ'kənʲɪ] 'merger of unstressed /a/ and /ɨ/ after /ʒ ʒʲ ʃs/'. The /ɨ/ vowel tends to be diphthongised, with a glide towards a more front close vowel, particularly when word-final, e.g. *my* [mʲɨi] 'we', *sady* [sʌ'ɖʲɨi] 'gardens'.

The /a/ vowel is an open central or back-advanced [ɑ] in the context of non-palatalised consonants and gets markedly fronted to [æ] between palatalised consonants, e.g. *palka* [pʌ'kæ] 'stick', *pjal'cy* [p'jæ'ʲʃʲɪ] 'embroidery hoop'. Similarly, the /e/ vowel is more retracted and centralised in the context of the non-palatalised consonants, e.g. *šest* [ʃʲɛ'st] 'pole', and is realised as front in the context of the palatalised consonants, where it is also more close, e.g. *čest* [tʃʲɛ'sʲt] 'honour'.

The /o/ vowel is a diphthongoid, with a closer lip rounding at the beginning of the vowel that gets progressively weaker [ʊo] or even [ʊʌ], particularly when occurring word-initially or word-finally under the stress, e.g. *očen* [ʊo'ʃʲɪn] 'very', *okna* [ʊʌ'kɲə] 'windows', *moloko* [mʌʲʌ'kʊʌ] 'milk'.

In standard pronunciation, /e/ and /o/ do not occur in unstressed syllables; /e/ is replaced with /i/ or /ɨ/, and /o/ is replaced with /a/ (with exceptions in only a handful of loanwords, e.g. *radio* [rʌ'ɖʲɪo] 'radio', *embolija* [ɛmbʌ'ʲʲi'ɪi] 'embolism'). Vowels in unstressed syllables are subject to reduction. Generally, there are two degrees of vowel reduction, depending on the location of the vowel relative to the stressed syllable (see Cubberley 2002: 68). The first-degree reduction is realised in the syllable immediately before the stressed syllable and when the word begins with the unstressed vowel. It is also found (variably) in phrase-final open syllables. The second-degree reduction applies to all other unstressed syllables. This is most striking for the /a/ vowel, which is realised as [ʌ] or [ɐ] in the first degree of reduction (the former is characteristic of St. Petersburg and the latter of Moscow pronunciation, see Kasatkina 2005), and as [ə] in the second, e.g. *moloko* [mʌʲʌ'kʊʌ] 'milk', *katastrofa* [kʌʲʌ'strʊʌ'fə] 'catastrophe'. Unstressed /a/ after palatalised consonants merges with /i/ and is realised as [i] or [ɪ], e.g. *djadja* [dʲɪ'æ'ɖʲɪ] 'uncle', *časy* [tʃʲɪ'sɨ] 'clock'. The qualitative differences between the respective allophones of /i ɨ u/ in stressed and unstressed syllables are less perspicuous.

Furthermore, unstressed vowels in Russian tend to be shorter than stressed vowels (and the second-degree unstressed vowels are shorter than first-degree ones), e.g. *govorit* [gʊvʌ'ʲʲɪ'ʲ] 'to speak', particularly under phrasal stress. (Outside that context lexically stressed vowels are not necessarily longer than unstressed ones, see Knjazev 2006.)

Stress and intonation

The prominence of the stressed syllable in Russian is achieved primarily through the duration and quality of the stressed vowel; the vowels in the stressed syllables are full quality /i ɨ e a o u/ and usually half-long whereas the unstressed vowels (only /i ɨ a u/ are possible in this position) are subject to various degrees of qualitative and quantitative reduction (see above). The stress is free and can fall on any syllable in a word. In the majority of cases, the stress is stable, that is it falls on the same syllable in the word within its paradigm or in its derivatives, e.g. *brat'ja* [brʌ'ʲʲɪ] 'brothers', *brat'jami* [brʌ'ʲʲɪmʲɪ] 'brothers (instrumental case)', *bratskij* [brʌ'ʲʲskʲɪj] 'brotherly', *bratstvo* [brʌ'ʲʲstvʌ] 'brotherhood'. There is, however, a large number of common words where the stress moves within the word's paradigm or in derived forms, e.g. *gorod* [gʊʌ'rʌt] 'city' but *goroda* [gʊrʌ'ɖʲa] 'cities', *gorodskoj* [gʊrʌ'ʲʲskʊʌj] 'of (the) city (ADJ), urban' (Bondarko 1998).

There are several descriptions of Russian intonation. The classic is by Bryzgunova (1977), who impressionistically differentiates five basic 'intonational contours'. Further descriptions include Odé (1989) and Svetozarova (1998). Odé's (2008) ToRI (Transcription of Russian

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