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Other vowels and consonants (*Advanced*)

This chapter has considered only the vowels and consonants of English, many of which are found in other languages. There are also many speech sounds found in the world's languages that are not heard in English. Since phonetic descriptions are universally valid, once the basic articulatory parameters have been mastered it is not too difficult to describe and even to pronounce less familiar sounds. This section presents a number of speech sounds found in other languages.

Vowels

Front vowels, which in English are always **unrounded**, can also be **rounded**. A high front tense rounded vowel is heard in French *pur* 'pure', German *Bücher* 'books', and Turkish *düğme* 'button'. It is transcribed as [y] in IPA transcription, but as [ü] in North America—a difference that sometimes leads to confusion. A rounded high front lax vowel [ʏ] is heard in Canadian French *lune* 'moon' and *duc* 'duke'. A rounded mid front tense vowel, transcribed [ø] (NA [ö]), is found in French *peu* 'few' and German *schön* 'beautiful'. A rounded mid front lax vowel, transcribed [œ], is heard in French *oeuf* 'egg' and *peur* 'fear', German *örtlich* 'local', and Turkish *göl* 'lake'. Back vowels may be unrounded; a high back unrounded vowel, transcribed as [ɯ], is heard in Russian words like *byl* 'was', and Rumanian *mînă* 'hand'. These vowels, as well as other 'exotic' ones, are found in many other languages as well. Table 1 illustrates the vowels presented in this chapter (UR = unrounded; R = rounded). Note carefully that the tense vowels are presented without glides. This is intentional; whereas certain English tense vowels are followed by glides, the tense vowels of the languages cited here (and many others) are not.

Table 1 Articulatory grid of vowels presented in this chapter

	Front		Central		Back	
	UR	**R**	**UR**	**R**	**UR**	**R**
High	i	y			ɯ	u tense
	ɪ	ʏ				ʊ lax
Mid	e	ø	ə (reduced)			o tense
	ɛ	œ	ʌ			ɔ lax
Low	æ (lax)		a (lax)		ɑ (tense)	

Nasal vowels

Nasal vowels, like nasal consonants, are produced with a lowered velum. Air passes simultaneously through the oral and nasal cavities. Nasal vowels can be heard in English, French, Portuguese, Hindi, and a wide variety of other languages (see table 2). They are often transcribed with a tilde [˜] over the vowel symbol.

Table 2 Some nasal vowels

English	win	[wĩn]	'win'
French	pain	[pɛ̃]	'bread'
Portuguese	sento	[sẽntu]	'one hundred'
Polish	ząb	[zɔ̃p]	'tooth'

Consonants
The same consonants found in English are widespread in other languages. A few additional consonants are introduced in this section.

Stops
In many European languages, we find not the alveolar stops [t], [d], and [n], but dental stops [t̪], [d̪], and [n̪]. Although this seems like a very slight difference in articulation, it can be readily observed in the speech of French, Spanish, or Italian speakers.

Other stop positions are common in the world's languages. Serbo-Croatian has both a voiceless and a voiced palatal stop in words like *ćaśa* 'dish', and *đak* 'pupil'. These are transcribed as [c] and [ɟ], respectively. Inuktitut dialects show a voiceless and voiced uvular stop pair in words like *imaq* 'sea', and *uĝsik* 'cow'. These are transcribed as [q] and [G], respectively. A nasal stop is also made at the palatal point of articulation, as in Spanish *año* 'year' (transcribed [ɲ] in IPA and as [ñ] in North America), and at the uvula as well, where it is transcribed as [N].

We now return to the glottal state known as *murmur* that was introduced in section 2.2.3. In Hindi there is a series of stops sometimes incorrectly referred to as 'voiced aspirated stops' that make use of voice. These stops are traditionally represented with a following *h* (e.g., *bh, dh, gh*); the double underdots of IPA standard are used here.

In table 3, examples of non-English stop articulations and glottal states are laid out. The distinction between dentals and alveolars is not indicated in the transcription, since most of the world's languages have either dental or alveolar stop articulations, but not both. Sounds found in English are set off in boxes.

Table 3 Stops

	Bilabial	Dental/ alveolar	Palatal	Velar	Uvular	Glottal
Voiceless	[p]	[t]	[c]	[k]	[q]	[ʔ]
Voiced	[b]	[d]	[ɟ]	[g]	[G]	
Murmured	[b̤]	[d̤]	[ɟ̤]	[g̤]		
Nasal	[m]	[n]	[ɲ]	[ŋ]	[N]	

Fricatives
Fricatives other than those of English are found in the world's languages. A bilabial fricative, produced by drawing the lips almost together and forcing the airstream through the narrow opening, is found in many languages. The voiceless bilabial fricative [ɸ] is heard word-initially in the Japanese word *Fuji* (the mountain). The voiced bilabial fricative [β] is found in Spanish words like *deber* 'to owe'. A voiceless palatal fricative [ç] is found in Standard German as in the word *ich* 'I'. Velar fricatives are not found in English but are widespread in the world's languages. The voiceless velar fricative [x] is common in German and Russian. (The composer Bach's name, pronounced in German, has this sound.) A voiced velar fricative [ɣ] is commonly heard in Spanish words like *agua* 'water'.

Table 4 presents a grid on which some common fricative consonants are ranged according to point and manner of articulation. As in table 3, dentals are not distinguished from alveolars because most languages have sounds with either one or the other point of articulation, but not both. Sounds found in English are set off in boxes.

Table 4 Fricatives								
	Bilabial	**Labio-dental**	**Inter-dental**	**Alveolar**	**Alveo-palatal**	**Palatal**	**Velar**	**Glottal**
Voiceless	[ɸ]	[f]	[θ]	[s]	[ʃ]	[ç]	[x]	[h]
Voiced	[β]	[v]	[ð]	[z]	[ʒ]	[ʝ]	[ɣ]	

Affricates

Affricates are found at most points of articulation. In German, a voiceless labiodental affricate, transcribed as [p^{f}] is heard at the beginning of the word *Pferd* 'horse'. Many dialects of Canadian French have voiceless and voiced dental (or alveolar) affricates, [t^{s}] and [d^{z}], in words like *tu* 'you' and *dire* 'to say'.

Table 5 presents a grid including the two English affricates and some others commonly found in other languages. The English sounds are again set off in a box.

Table 5 Affricates				
	Labiodental	**Alveolar**	**Alveopalatal**	**Velar**
Voiceless	[p^{f}]	[t^{s}]	[tʃ]	[k^{x}]
Voiced	[b^{v}]	[d^{z}]	[dʒ]	[g^{ɣ}]

Liquids

As with the stops, laterals may be dental as well as alveolar. Laterals can also be made with the tongue body raised to the palate. Such a sound is called a palatal lateral, and is transcribed with the symbol [ʎ]. It is heard in some pronunciations of the Spanish words *caballo* 'horse' and *calle* 'street', and in the Serbo-Croatian words *dalje* 'farther' and *ljudi* 'people'. The palatal lateral may also be voiceless, in which case it is transcribed as [ʎ̥].

Lateral fricatives are produced when a lateral is made with a narrow enough closure to be classified as a fricative. This sound is transcribed as [ɮ] when voiced and [ɬ] when voiceless. Lateral fricatives can be heard in many American Indian languages, in Welsh, and in the languages spoken in the Caucasus. Table 6 shows some examples of voiceless alveolar lateral fricatives from Welsh.

Table 6 Voiceless lateral fricatives in Welsh		
llan	[ɬan]	'clan'
ambell	[ambɛɬ]	'some'

Other *r*-like sounds are widely heard in the world's languages. A common one is the **trill**, which is made by passing air over the raised tongue tip and allowing it to vibrate. Trills are commonly transcribed as (IPA) [r], but North American [r̃]. They can be heard in the Spanish words *perro* 'dog' and *río* 'river', and the Italian words *carro* 'wagon' and *birra* 'beer'. A similar trilling effect can be made with the uvula, and is called a uvular trill. Its IPA symbol is [ʀ].

A uvular *r* made without trilling is more commonly heard, however. This is the voiced *r* of Standard European French, and is also widespread in German. IPA

transcription classifies this sound along with the fricatives. It is transcribed as [χ] when voiceless and as [ʁ] when voiced.

Table 7 presents the liquids. As before, sounds found in English are set off in boxes.

Table 7 Liquids

		Dental/alveolar	Palatal	Uvular
Laterals				
	Voiced	[l]	[ʎ]	
	Voiceless	[l̥]	[ʎ̥]	
Lateral fricatives				
	Voiced	[ɮ]		
	Voiceless	[ɬ]		
r's				
	Retroflex	[ɾ]		
	Flap	[ɾ]		
	Trill	[r̃]		[ʀ]

Flaps and trills can be voiceless as well. Voicelessness for these sounds is usually indicated by a small open circle beneath the symbol, as in [r̥̃] or [ʀ̥].

Glides

Other glides are found in the world's languages. A commonly heard one is made with the tongue position of [j] but with the lips rounded. It is transcribed as [ɥ] and can be heard in French words such as [ɥit] *huit* 'eight', [ɥil] *huile* 'oil', and [ɥitχ] *huitre* 'oyster'.