SOUND CLASSIFICATION

VOWEL/VOCOID VERSUS CONSONANT/CONTOID

In phonetic terms – i.e. from an articulatory view –, the difference between consonants and vowels is that the former are produced with either a partial or complete obstruction in the flow of air at some point in the vocal tract. This, however, causes some difficulty since an examination of sounds like /j/ and /w/ reveals that these are, in fact, produced like vowels. So, why are they commonly classified together with consonants? The reason is that phonologically, they behave like consonants in that they do not appear at the centre of syllables (a feature shared by all vowels), but at the edges. This ambiguity – vowel-like by nature, consonant-like in behaviour - is also reflected in their traditional name of semi-vowels. (sometimes also semi-consonants).

In order to avoid mixing phonetic and phonological criteria, some phoneticians prefer the terms contoid and vocoid to consonants and vowels. In this, purely phonetic approach, /j/ and /w/ are considered vocoids, together with all the sounds we usually refer to as vowels.

Every language in the world has contoids/consonants, with most of them having about 22-23. The largest number of consonants ever recorded for a language is 95, whereas the lowest is 6.

PLACE OF ARTICULATION

The description of consonants is much simpler than that of vowels in view of the fact that it is much easier to identify the exact place of articulation as a result of the stricture, i.e. the narrowing of the airstream at some point in the vocal tract. The International Phonetic Alphabet contains the following eleven possible places of articulation for consonants (from front to back).

1. **Bilabial**: made with the two lips (e.g. /p/, /b/, /m/).
2. **Labiodental**: the lower lip articulates with the upper teeth (e.g. /f/, /v/).
3. **Dental**: the tongue tip and rims articulate with the upper teeth (e.g. /θ/, /ð/).
4. **Alveolar**: the tongue tip and/or blade articulates with the alveolar ridge (e.g. the RP English /n/, /s/).
5. **Postalveolar** (or **palato-alveolar**): the tongue blade articulates with the alveolar ridge, while the front of the tongue is raised towards the hard palate (e.g. the initial sounds in *ship* /ʃɪp/, *genre* /ˈɡrɛnə/, *check* /tʃek/, and *jail* /dʒeɪl/).

6. **Retroflex**: the tongue tip articulates with the back of the alveolar ridge. Many speakers of American English have a retroflex ‘r’ sound (/r/) in, for instance, *car*.

7. **Palatal**: the front (or blade) of the tongue articulates with the hard palate (e.g. /ɨ/).

8. **Velar**: the back of the tongue articulates with the soft palate (e.g. /k/, /ɡ/).

9. **Uvular**: the back of the tongue articulates with the uvula: e.g. the ‘r’-sound in French: /ʁ/, or the variant /ʁ/ (in which the uvula taps rapidly against the back of the tongue).

10. **Pharyngeal**: the root of the tongue is pulled backwards towards the posterior wall of the pharynx. These sounds are a typical feature of Semitic languages, especially Arabic. As a movement of the root of the tongue also involves a movement of the *epiglottis*, these sounds may also be said to be **epiglottal**. However, in practice, this term is restricted to sounds in which the epiglottis is the **primary articulator**, as is the case, for instance, in some sounds used in Chechen (Northern Caucasus), which involve the epiglottis being folded back and down to cause a closure of the airflow.

11. **Glottal**: sounds involving an obstruction or narrowing of the glottis (e.g. /ʔ/, /h/).
When talking about the manner in which sounds are produced, phoneticians sometimes divide the sounds into different categories, depending on the degree of stricture. Generally, three such degrees are proposed: closure (i.e. at some point in the vocal tract, the airflow is completely stopped), close approximation (involving a constriction somewhere in the vocal tract, with the air being forced through the opening), and open approximation (sounds in which the airflow is smooth: e.g. vocoids). Additional distinctions include whether the air flows through the nose (nasal), or not (oral), whether it runs along the centre or the sides of the tongue (central vs. lateral), as well as the way in which the closure is made.

The IPA recognizes the following manners of articulation.

1. **Plosives (or occlusives)**
   A complete closure at some point in the vocal tract, behind which the air pressure builds up and can be released with a sudden burst (plosion): e.g. /p, b, t, d, k, g/.

2. **Fricatives (or spirants)**
   A close approximation of two articulators so that the airstream is partially obstructed, resulting in friction (or turbulence) in the flow of air: e.g. /f, θ, s, z/. The hissing sounds in this category are also called sibilants. English fricatives can be labiodental, dental, alveolar, or palat-alveolar. A combination of a plosive and a fricative is called an affricate. In these sounds, the separation of the articulators in the release phase is slower than for ordinary plosives, and thus gives rise to friction. These sounds can be heard in the English words *church* (/tʃərtʃ/) and *jam* (/dʒæm/), for instance. The plosives, fricatives, and affricates are sometimes collectively referred to as obstruents.

3. **Nasals**
   These are sounds in which the velum is lowered, while at the same time, there is an obstruction in the oral cavity: e.g. *man* (/mæn/). Some modern phoneticians place both nasals and plosives into one single stops category on the grounds that both involve a total obstruction of the airflow, which thus takes precedence over any secondary phenomena that may surround the stoppage.

4. **Trill (or roll)**
   A series of rapid closures or taps (20 to 30 times per second), with, for instance, the tongue tip tapping against the alveolar ridge (e.g. the Spanish /r/ in *perro*), or the uvula
tapping against the back of the tongue (e.g. the French /ʁ/, which is the usual ‘r’ sound in most Belgian French varieties).

5. **Lateral**
   These sounds involve an obstruction of the airstream at some point in the mouth (usually in the denti-alveolar region and along the centre), with the air being allowed to escape on one or both sides of the tongue: e.g. /l/ in the English word *lip*.

6. **Flap/Tap**
   A sound resulting from the quick flapping of the tip of the tongue against some place of articulation on the upper surface of the oral cavity, commonly the alveolum. This is the usual General American pronunciation of /t/ in, for instance, *metal* [ˈmerəl], and can also be heard in the Spanish [ˈpero]. Sometimes, however, a distinction must be made between a **tap** and a **flap**, with the latter involving the tip of the tongue striking the alveolar ridge as it returns to its normal position, as there are languages (e.g. Hausa in Nigeria) in which **taps** and **flaps** are clearly separate sounds (phonemes).

7. **Approximants**
   In the production of an approximant, one articulator is close to another, but the vocal tract is not narrowed to such an extent that a turbulent airstream is produced. Among the approximants, we find the RP /ʃ/ and /sw/, which are also referred to as *semi-vowels*. The voiceless companion to /ʃ/ is the palatal fricative [ç] – the sound which some English speakers use at the beginning of words like *huge* and *humour*. The **nasals**, **vowels** and **approximants** together make up the category of the **resonants** (or **sonorants**) in that all are made without friction of total stoppage, depending instead on vocal-fold vibration and resonance.

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1 In broad transcription, this sound is represented as /hʃ/. It is important, however, to distinguish this sound from the **voiceless velar fricative** /x/, which is found in the Scots *loch* (or the German *Leipzig* and *Pfennig*).