

## 19. Presence of Uncommon Consonants

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### 1. Introduction

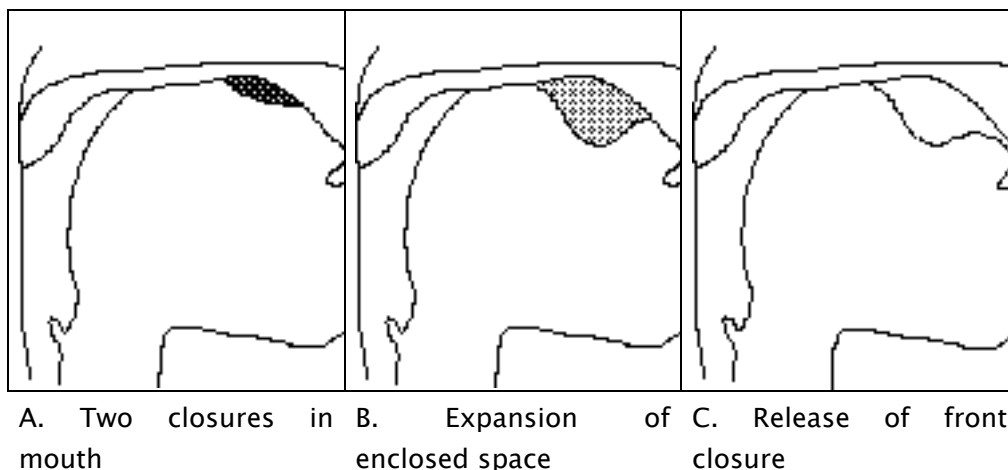
In this chapter the worldwide pattern of occurrence of four rather unusual classes of consonants will be discussed. These four classes are clicks, labial-velar plosives, pharyngeals, and dental or alveolar non-sibilant fricatives. This last class includes sounds similar to those represented by the *th* in English words such as *this* or *thing*; for brevity they will often be referred to as “th” sounds in the text. Each of these classes of consonants occurs in relatively few languages, but they exemplify different patterns of geographical distribution, some being concentrated in particular areas while others are dispersed.

The occurrence of these consonants in the consonant inventory as discussed in chapter 1 was examined in a sample of 566 languages. Since each of the four types of consonants being discussed is relatively rare, the great majority (448, or 79.2%) of the languages do not have any of them. However, viewing the world on a large scale, at least one of these special kinds of consonants tends to be found in at least some language in all major areas.

@	1.	None	448
@	2.	Clicks	9
@	3.	Labial-velars	45
@	4.	Pharyngeals	21
@	5.	"Th" sounds	40
@	6.	Clicks, pharyngeals, and "th"	1
@	7.	Pharyngeals and "th"	2
total			566

### 2. Clicks

The rarest of the four classes are the clicks, which occur in just 10 (or 1.8%) of the languages in our sample. Click sounds are used in many cultures for non-linguistic communication, and a separate chapter (chapter 142) is devoted to these uses, but they occur as regular linguistic sounds incorporated into ordinary words only in some languages of southern and eastern Africa. Clicks are sometimes regarded as particularly exotic speech sounds, but their production is not especially unusual. The mechanism for making clicks is illustrated in Figure 1. The key is the making of closures at two different locations in the mouth, so that a small volume of air is enclosed in the space between the two. One closure is always made by the back of the tongue against the back part of the palate. The other closure is made by the lips or by the tip or blade of the tongue, as is shown in the first panel of the figure. The enclosed air space is marked by shading. The center part of the tongue is then lowered, enlarging the air space and creating a partial vacuum between the two closures, as illustrated in the second panel. The closure at the front of the mouth is then released as indicated in the third panel, and because the pressure of the air inside the mouth is lower than the pressure outside, the air abruptly rushes into the mouth, creating the click noise.



**Figure 1.**

Clicks occur in all the Khoisan languages of southern Africa. Five languages of this group, !Xóõ, Ju|'hoan, // Ani, Deti, and Khoekhoe, are included in the sample. The names of the first three of these include click sounds, represented in their spelling by the symbols !, |, // drawn from outside the usual Roman alphabet. Close contact with speakers of Khoisan languages resulted in click sounds being borrowed into languages of the Bantu subgroup of Niger–Congo as speakers of Bantu languages moved south. This borrowing happened independently in two different areas, one toward the east and one toward the west. Zulu (South Africa) represents the eastern and Yeyi (Namibia and Botswana) the western contact area in the language sample. Three languages in East Africa also have clicks. Two of these, Sandawe and Hadza spoken in Tanzania, are sometimes believed to be related to the Khoisan languages further south, but the connection cannot be clearly demonstrated, especially for Hadza. The third East African language with clicks is Dahalo (Cushitic; Kenya). It is usually assumed that the clicks in Dahalo are also the result of borrowing but the source is not known. Because Dahalo also has a “th” type of sound and pharyngeals it falls into a special group on its own.

The occurrence of languages with clicks in East Africa, and especially the relatively far northern location of Dahalo, suggest to many that at one time in the past a much larger area of Africa may have been occupied by people speaking languages that included click sounds, and that these people were displaced or absorbed by later movements of populations coming from the north.

### **3. Labial–velar plosives**

The second class of special consonants are labial–velar plosives. This class of sounds is similar to clicks in an important respect

since they also involve two closures, in this case one at the back of the mouth and one at the lips. But in this type the force for the explosive release comes from the air in the lungs as in simple plosives, such as /k/ or /p/. Because of the presence of two closures the phonetic symbols for labial-velar plosives simply combine the two letters used for the separate closures, i.e. /k̠p/ for a voiceless plosive and /g̠b/ for a voiced one. (When it is necessary to distinguish a labial-velar consonant from a sequence of two consonants a tie-bar can be added, e.g. /k̠p̠/.) Labial-velar plosives occur in 45 (or 8.0%) of the languages in the sample.

Sounds of this type occur in two areas of the world only. The first is an area in West and Central Africa, where /k̠p/, /g̠b/ or both occur in a majority of the languages. Some of these also have a labial-velar nasal, or a prenasalized labial-velar plosive. The greatest number of languages concerned are in the Niger-Congo family, including Temne, Kpelle, Ewe, Dagbani, Kolokuma Ijo, and Yoruba, but some Nilo-Saharan languages such as Ngiti, Lugbara and Yulu and a few languages in the Chadic subgroup of Afro-Asiatic such as Kotoko also have sounds of this class. The pattern is clearly strongly areal, as it is compact and crosses the boundaries of language families.

The second and quite separate region where labial-velars occur is the eastern end of New Guinea. Two Papuan languages with labial-velars are included in the survey, but there are several others, such as Kâte and Dedua, in the area. Amele (Madang family) has only the voiced plosive /g̠b/, but Yelî Dnye (Yele family; Rossel Island) has several labial-velar consonants (a plain plosive, pre- and post-nasalized stops and a nasal) and in addition sets of consonants which combine a bilabial closure with an alveolar one or a post-alveolar one. It is the only language known to have such a large number of consonants involving combinations of a labial closure with another one.

#### 4. Pharyngeals

The third type of consonants considered in this chapter are those in which the constriction producing the characteristic sound is made in the pharynx. The pharynx is the space above the larynx and below the opening that connects the nasal passage to the mouth (that is, when a person is standing upright). The root of the tongue can be moved backwards towards the back wall of this space to produce a narrowing for a consonant. It can even be moved far enough back that the tongue — or the epiglottis at the base of the tongue — closes against the back wall of the pharynx so that the flow of air from the lungs is blocked and a pharyngeal stop is produced. One or more pharyngeal consonants occur in 24 (or 4.2%) of the languages surveyed. This includes languages with both pharyngeals and the "th" type of sound, one of which (Dahalo) also has clicks. These languages therefore form separate groups in the value list.

Pharyngeal consonants are considerably less concentrated than clicks or labial-velars. They are found in a number of languages in several branches of the Afro-Asiatic family, including Modern Standard Arabic, Tigre and Soqotri in the Semitic branch, Middle Atlas Berber and Tashlhiyt in the Berber branch, and Somali, Dahalo, and Iraqw in the Cushitic branch. The Nilo-Saharan language Tama is also reported to have a pharyngeal fricative in its inventory. This results in a moderate concentration of languages with pharyngeals in northern and eastern Africa and in adjoining Arabia.

A second area of concentration of the occurrence of pharyngeals is in the Caucasus. Languages of two families in the area, Nakh-Daghestanian (e.g. Ingush, Avar, Rutul and Hunzib) and Northwest Caucasian (e.g. Kabardian and Abkhaz), include pharyngeal consonants. Kabardian is one of the three languages with both pharyngeal consonants and a "th" type of sound. Outside of these two areas of concentration, there are scattered languages in the sample which also include pharyngeal

consonants, showing that this class of consonant has clearly arisen independently in areas where contact cannot be a factor. These scattered languages include Nenets (Uralic; Siberia), which is another language also having a “th” sound, some dialects of Atayal (Austronesian; Taiwan), and two languages in the Pacific Northwest, Squamish (Salishan; British Columbia) and Nuuchahnulth (Wakashan; British Columbia).

## 5. “Th” sounds

The final class of consonants to be discussed in this chapter are dental or alveolar non-sibilant fricatives, sounds similar to the “th” sounds of English. These sounds are fricatives made by placing the tip of the tongue behind or just below the upper teeth (when the tip may protrude between the teeth) so that — as with all fricatives — a turbulent flow of air is caused when air is pushed out from the lungs. Crucially, this jet of air is not forced against the teeth as in sibilant sounds such as those usually represented by the letters *s* or *z* (as in English words such as *hiss* and *buzz*) and consequently the sound produced is less loud and lower-pitched than in the *s* or *z* sounds. Dental or alveolar non-sibilant fricatives are written in phonetic notation with the symbols [θ] and [ð] for the voiceless (as in *thing*) and voiced (as in *that*) fricatives respectively.

Dental or alveolar non-sibilant fricatives are just as rare as labial-velar plosives, occurring in just 43 (or 7.6%) of the languages surveyed, but the distribution of these languages is practically worldwide. They are found in languages as varied in location and family affiliation as Modern Greek, Albanian, Spanish and English (Indo-European), Kabardian (Northwest Caucasian), Meadow Mari and Nganasan (Uralic), Burmese and Sgaw Karen (Sino-Tibetan), Lakkia and Yay (Tai-Kadai), Swahili and Moro (Niger-Congo), Dahalo (Afro-Asiatic), Berta and Murle (Nilo-Saharan), Fijian, Yapese and Drehu (Austronesian), Ngiyambaa (Pama-Nyungan), Rotokas (West Bougainville), Aleut

(Eskimo–Aleut), Chipewyan (Athapaskan), Acoma (Keresan), Maricopa (Yuman), Cubeo (Tucanoan), Huastec (Mayan), Mixtec languages and Mezquital Otomí (Oto–Manguean), Amahuaca (Panoan), Tacana (Tacanan), Cochabamba Quechua, and Mapudungun (Araucanian).

One known historical origin of fricatives of this type is the loss of full closure in a dental or alveolar plosive, as happened long ago in the history of English. In some languages a [θ] or [ð] pronunciation may still vary with a plosive pronunciation in different positions in a word or phrase. For example, the spelling *d* in Spanish most often represents [ð] but receives the pronunciation [d] next to certain other consonants or at the beginning of an utterance. Another source of “th” sounds is the loss of the sibilant quality in a fricative of the /s/ or /z/ type, as has occurred in some varieties of Yue Chinese (though not in the Hong Kong Cantonese variety included in this survey). The scattered geographical distribution of dental or alveolar non-sibilant fricatives suggests that the processes that give rise to them are ones that are easily triggered spontaneously. However, the comparative rarity of sounds of this class suggests that these sounds may also be easily lost over a period of time. This may be because of their quietness, which makes them among the least perceptually salient of consonants.

## 6. Discussion

In contrast to the “th” sounds, the compact geographical distribution of clicks and labial-velar plosives suggests that the evolution or adoption of sounds of these two classes in the sound system of a language is strongly influenced by hearing these sounds in other languages spoken in the same area. Pharyngeals seem to be intermediate in their behavior, having both a significant tendency to be developed and maintained in particular areal-genealogical groupings of languages and a

certain probability of evolving in languages isolated from areas where they are more commonly encountered.

The types of consonants discussed here can all for one reason or another be considered to be among the more complex ones. As noted in chapter 1, consonants that are evaluated as being more complex in some way in their production are predicted to be more frequently found when the size of the consonant inventory is large, according to what is known as the size principle. This prediction was borne out in the examination of glottalized consonants (see chapter 7). It is also found with respect to the various types of special consonants discussed in this chapter, as can be seen by comparing the map in this chapter with that in chapter 1. The relevant distribution of the special consonants is summarized in Table 1.

**Table 1.** Languages with special consonants by consonant inventory size

Consonant inventory size class	percent with any of the special C's
small	8.7%
moderately small	13.1%
average	22.1%
moderately large	27.4%
large	40.7%

The table shows the percentage of languages falling within each consonant inventory size class that have at least one of the special consonant classes among the consonants constituting their inventory. Only a few of the languages with small consonant inventories have any of these consonants, whereas just over two-fifths of those with large inventories include one or more of them. Most importantly, the proportion increases with each increase in overall inventory size. The predictions of the size principle are confirmed for these special consonants in the languages of this sample.



