

GRAND QUIZ

# To support the learning system

\*\*\*Our Team has gathered\*\*\*

the most relevant and important points

OF

“Phonetics and Phonology 507”

FOR

Grand Quiz 2020

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**GRAND QUIZ****Lesson # 10**

- EXPLAIN the features (Voicing, MoA and PoA) of English consonants.

|                         | Bilabial | Labiodental | Dental | Alveolar | Post-alveolar | Palato-alveolar | Palatal | Velar | glottal |
|-------------------------|----------|-------------|--------|----------|---------------|-----------------|---------|-------|---------|
| Plosive                 | p b      |             |        | t d      |               |                 |         | k g   |         |
| fricative               |          | f v         | θ ð    | s z      |               | ʃ ʒ             |         |       | h       |
| Affricate               |          |             |        |          |               | tʃ dʒ           |         |       |         |
| Nasal                   | m        |             |        | n        |               |                 |         | ŋ     |         |
| Lateral                 |          |             |        | l        |               |                 |         |       |         |
| Frictionless Continuant | w        |             |        |          | ɹ             |                 | j       |       |         |

- ❖ There are 24 consonants in the RP accent of English.
- ❖ These consonants are described in terms of (1) voicing, (2) manners and place
- ❖ 'Stop' is often used as if synonymous with plosive.
- ❖ However, some phoneticians use it to refer to the class of sounds in which there is complete closure specifically in the oral cavity. In this case, sounds such as m, n are also stops.
- ❖ More precisely, they are nasal stops. In English, there are nine stops (six oral and three nasal):

|                 | bilabial | Alveolar | velar |
|-----------------|----------|----------|-------|
| - Voiced        | p        | t        | k     |
| +Voiced         | b        | d        | g     |
| (nasal) +Voiced | m        | n        | ŋ     |

- ❖ Apart from the above stops, in some varieties of English, the glottal stop /ʔ/ is found as in beaten ['biʔən].
- ❖ English voiceless stops (p, t, k) are also aspirated in the beginning of the words such as [phal, thal, khal].
- ❖ It refers to a sound made with two articulators coming so close to each other that the air moving between them produces audible friction (or frication).
- ❖ Remember that there is no complete closure between the articulators and there is a very simple stricture (or narrowing of the air passage).

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- ❖ In BBC English, we have **several fricatives** (both voiced and voiceless), as in fin [f], van [v], thin [θ], this [ð], sin [s], zoo [z], ship [ʃ], measure [ʒ], hoop [h].
- ❖ Other fricatives may be heard in some forms of English (or in restricted contexts or speech styles, such as the **palatal fricative** [ç]), and several other fricatives may also be heard in other languages, e.g., a voiceless velar fricative [x] in Urdu, Pashto and Sindhi, a voiceless pharyngeal fricative [ħ] in Arabic,
- ❖ A voiced **bilabial fricative** [β] in Spanish. The fricative manner of articulation produces a wider range of speech sounds than any other.
- ❖ Very common fricative sounds are /f, v, s, z, θ, ʃ, ð, h/ whereas [ʒ] is a **less common fricative sound**.
- ❖ **English fricatives** are also divided into two categories (this distinction is made on the basis of energy made in their production);
- ❖ **fortis**: /f, s, θ, ʃ, h/ and **lenis**: /v, z, ð, ʒ/. Stops and fricatives are together called 'obstruents' and they are similar in **three ways**:
- ❖ An **affricate sound is a type of consonant** which is made of a plosive followed by a fricative with the same place of articulation (so, it is a mixture of **two steps or gestures**).
- ❖ For example, /tʃ/ (the voiceless affricate) has /t/ and /ʃ/ as a sound at the beginning and **end of the English words church** /tʃɜːtʃ/.
- ❖ Remember that although it is very strange to call the **combination of a plosive** and a fricative a single sound (an affricate) (as it has been deliberated for quite some time) yet experts argue that an affricate is a single segment and accordingly it should be treated as **a single unit**.
- ❖ There are two affricates in English: **/tʃ/ and /dʒ/** (the first of these is voiceless, the second voiced) sounds as at the beginning and end of the English words church and judge
- ❖ . Both of them are **post alveolar sounds** by their place of articulation.
- ❖ **Nasals** are the consonantal sounds in which the air escapes through the nose (the soft palate i.e., velum is lowered).
- ❖ For nasal sounds, **two articulatory actions are necessary**;
- ❖ The **soft palate** (or velum) must be lowered to allow air to escape through nose.
- ❖ A **closure** must be made in the oral tract (in order to prevent air from escaping through it).
- ❖ This closure may be created at any place in the **oral cavity** (such as at lips position, for **bilabial** /m/ sound; at alveolar, for /n/ or at soft palate (velum) for /ŋ/ sound).
- ❖ English has these **three nasal sounds** (m, n and ŋ) which are very commonly found. All of them are nasal stops and they are voiced sounds.
- ❖ The consonants which make very little obstruction to the airflow are called **approximants**.
- ❖ These have traditionally been divided into **two main groups**:
- ❖ **semivowels** (such as /w/ in 'wet' and /j/ in 'yet') which are very similar to close vowels ([u] and [i]) but are produced as a rapid glide; and **liquid sounds** which have an identifiable constriction of the airflow (but they do not obstruct sufficiently to produce fricative noise, compression or the diversion of airflow) - this category includes lateral sound i.e., /l/ as in 'lead' and /r/ sound as in 'read'.

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- ❖ **Approximant sounds**; therefore, are not fricative and never contain interruptions to the flow of air
- ❖ .The BBC accent of English has **four approximant sounds**:  
**Bilabial**: /w/ as in whack  
**Alveolar**: /l/ and /r/ as in lack and rack  
**Palatal**: /j/ as in yak
- ❖ Sometimes, experts need to differentiate among various kinds of /r/ approximant (**tap, flap and trill**).

**Lesson 11**

- **Speech sounds** are produced with the movements of the **Articulators**
- **Sounds** are often described in terms of their **Articulatory gestures**.
- **Sounds** are not static. they are movements.
- This idea makes it easier to understand the **overlapping of sounds** in terms of their articulatory gestures.
- **Try saying words twice**, dwindle, quick and analyze the rounding of your lips for sound **/w/**.
- In each of these three words, the first stop sounds are slightly rounded (when they are clustered with /w/ - /tw/, /dw/ and /kw/ respectively).
- In these words, there is a **tendency for gestures** to overlap with those **for adjacent sounds** (stops with bilabial /w/ in this case).
- This kind of gestural overlapping, in which a second gesture starts during the first gesture, is sometimes also called **anticipatory co-articulation**.
- The **articulatory gesture** for the approximant sound **is anticipated** during the articulatory gesture for the stop.
- The same kind of anticipatory overlapping takes place in words like **tree and dream** (compare them with tea and deem).
- In phonology, overlapping refers to the possibility when a phone may be assigned to more than one phoneme (**phonemic overlapping**)
- As a notion, overlapping was introduced by **American structural linguists in the 1940s**.
- The kind of gestural overlapping, in which a second gesture starts during the first gesture, is sometimes also called Anticipatory **co-articulation**.
- Overlapping is a common feature of **connected speech**.
- **Overlapping** is an abstract unit / entity of movement **Phoneme** Physical representation of certain **abstract unit called Allophones**.
- When we use our articulators to achieve some certain target those targets known **as Allophones**.

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- Keeping in mind this possibility of overlapping, a phoneme is an abstract unit that may be realized in several different ways (forms - allophones).
- Similarly, the differences between various allophones of a phoneme can be explained in terms of targets and overlapping gestures. The difference between two different forms of /k/ sound (as the [k] in key and the [k] in caw) may be simply due to their overlapping with different vowels in context.
- The alveolar [n] in ten is different than the dental [ɳ] in tenth. Both are the result of aiming at the same target, but in tenth, the realization of the phoneme /n/ is influenced by the dental target required for the following sound.
- An articulation is an articulatory phenomenon which involves a simultaneous overlapping of more than one points in the vocal tract as in the co-ordinate stops (/pk/, /bg/, /pt/ and /bd/) often heard in some languages from West Africa.
- Co-articulation, at times, leads to create a difference between two allophones (which is actually the result of aiming at different targets).
- In experimental phonetics, co-articulation is a way of finding out how the brain controls the production of speech sounds.
- When we speak, many muscles are active at the same time and sometimes the brain tries to make them do things at a time that they are not capable of.
- For example, in the word mum /mʌm/, the vowel phoneme is one that is normally pronounced with the soft palate (velum) raised to prevent the escape of air through the nose, while the two m phonemes must have the soft palate lowered.
- the soft palate cannot be possibly raised so quickly, and, as a result, the vowel is most likely to be pronounced with the soft palate (velum) still lowered – making the vowel a nasalized one.
- the nasalization is a co-articulation effect which is caused by the nasal consonants in context (environment)
- a set of formal statements simply describing the behavior of a language.
- These are not the kind of prescriptive grammar rules that people are expected to abide by.
- Consonants are longer when at the end of a phrase (e.g., bib, did, don and nod).
- Voiceless stops (e.g., p, t, k) are aspirated when they are syllable initial (pip, test, kick).
- Voiced obstruents (b, d, g, v, ð, z, ʒ) are voiced only when they occur at the end of an utterance or before a voiceless sound.

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- **Voiced stops** (b, d, g) and affricate (dʒ) are voiceless when they are **syllable initial** (except when immediately preceded by a voiced sound – compare a day with this day).
- **Voiceless stops** (p, t, k) are unaspirated after /s/ in words such as **spew, stew and skew**.
- **Voiceless obstruent** (p, t, k, tʃ, f, θ, s, ʃ) are longer than their voiced counterparts (b, d, g, dʒ, v, ð, z, ʒ) at the end of a syllable (e.g., cap - cab and back – bag).
- **Approximants** (w, r, j, l) are at least partially voiceless when they occur after initial voiceless stop sounds (e.g., play, twin, cue).
- **The gestures** for consecutive stops overlap, so that stops are unexploded when they occur before another stop (e.g., apt and rubbed).
- In many accents of English, syllable final voiceless stops /p, t, k/ are accompanied by an **overlapping glottal stop gesture** (e.g., tip, pit, kick).
- /t/ is replaced by a glottal stop when it occurs before an **alveolar nasal** (e.g., beaten).
- **Nasals are syllabic** at the end of a word - after an obstruent (e.g., leaden, chasm).
- **The lateral** /l/ is syllabic at the end of a word - **a consonant** (e.g., paddle, whistle).

## Rules for English Consonant Allophones (ECA): Explanation

- An **alveolar** stop becomes a voiced tap when it occurs between two vowels the second of which is **unstressed** (winter – winner)
- An alveolar consonant becomes dental before **dental consonant** (eighth, tenth, wealth).
- **Alveolar stops** are reduced or omitted when **between two consonants** (/moʊst plpl/ - /moʊs plpl/).
- A **homorganic** voiceless stop may occur after a nasal before a voiceless fricative followed by an unstressed vowel in the same word (e.g., hearing /t/ in in both agency and grievances).
- A **consonant** is **shortened** when it is before an identical consonant (e.g., /k/ in cap and kept).

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- **Velar stops** become more frontal before more **frontal vowels**. (e.g., clap and talc).
- **The lateral /l/** is velarized after a vowel or **before a consonant** at the end of a word.

**Lesson #12**

- While transcribing (accurately and in detail), a small mark is added to a **phonetic symbol** to show the way it **is Spoken**.
- For detail **phonetics transcription** small markers and short symbols are at times applied above or below or through those **IPA symbols**.
- **Diacritics** are really important because at time and there are modification marks which are addition to **segments** those modifications are involved.
- There is wide range of diacritics because at times when there is something newly discovered or addition to those **primary segments** Diacritics include various marks such as **accent marks** ( ' ` ^ ), the **signs of devoicing** [o] and **nasalization** [~].
- IPA stands for **International phonetic Association and international** phonetics alphabets.
- The International Phonetic Association (IPA) recognizes a wide range of such marks (**diacritics**) for both **vowels and consonants**.
- In the case of Vowels diacritics indicate differences in **frontness**, **backness**, **closeness** or **openness**, and **lip-rounding** or **unrounding**, **nasalization** and **centralization**.
- In the case of **Consonants diacritics** are used for voicing or voicelessness, for advanced or retracted place of articulation, aspiration and many other aspects.
- In **diacritics Small marks** are very important for detailed narrow transcription
- S. No: Feature Symbol

## Examples Transcription

|   | Features            | Symbols                             | examples | transcriptions      |
|---|---------------------|-------------------------------------|----------|---------------------|
| • | 1. <b>Voiceless</b> | ◌<br>(small circle below)           | quick    | /kw̥ɪk/             |
| • | 2. <b>Aspirated</b> | ◌ <sup>h</sup><br>(small /h/ above) | kiss     | /k <sup>h</sup> ɪs/ |
| • | 3. <b>Dental</b>    | ◌̪<br>(dental sign below)           | health   | /həɪ̪θ/             |
| • | 4. <b>Nasalized</b> | ◌̃<br>(tilde symbol above)          | man      | /mæ̃n/              |

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- 5. **Velarized** ~ (tilde symbol through) pill /p<sup>h</sup>ɪl<sup>h</sup>
- 6. **Syllabic n** , (small vertical line below) mitten /mɪʔnɪ
- In transcription we need detail of some modifications, co-articulation and secondary articulation and at time this overlapping of sound.
- For **detailed suprasegmental** features are in addition to small diacritics marks.
- Short symbols mainly focusing on: **supersegmental** features such as stress, syllable, tone, intonation and length etc
- **Aspiration** is a puff of noise made when a **consonantal constriction** is released and air is allowed to escape relatively freely (e.g., in English /p t k/ at the beginning of a syllable are aspirated).
- **Phonetically**, aspiration is the result of **the vocal cords** being widely parted at the time of the articulatory release.
- In some languages (such as English) **aspiration is allophonic** while in others (such as Urdu) it is **phonemic**.
- **Pronunciation teachers** used to make learners of English practice aspirated plosives by seeing if they could blow out a candle flame with the rush of air after p t k – this can, of course, lead to a rather **exaggerated pronunciation** (and superficial burns).
- A rather different articulation is used for the so-called **voiced aspirated plosives** found in many **Indian languages** (often spelt as ‘bh’, ‘dh’, ‘gh’)
- where after the release of the constriction the vocal folds vibrate to produce voicing, but are not firmly pressed together; the result is that a large amount of air escapes at the same time, producing a “breathy” quality.
- It is not necessarily only stops that are aspirated as both **unaspirated** and **aspirated** affricates also exist in Urdu.
- **Nasalization** is an **articulatory process** whereby a sound is made ‘nasal’ (when the air is passing through the nasal cavity) due its adjacent nasal sound (it is an articulatory influence of an adjacent nasal consonant, as in words like mat or hand).



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- A vowel can also be **nasalised** in words like man (when /a/ may be articulated with the soft palate lowered throughout), because of the **nasal consonants'** influence (this is called anticipatory coarticulation).
- Remember that there is a **difference between** a **'nasal'** and a **'nasalised'** sound.
- A sound is nasalized when the nasality comes from other sounds .
- whereas the 'nasal' term suggests that the nasality is an **essential identifying feature** of a sound (in Urdu there are many nasal sounds).
- A **'nasalized consonant'**, on the other hand, is a consonant which, though normally oral, is articulated in a nasal manner because of some adjacent (nasal) sound.
- In co-articulation, **velarisation** is a process whereby a constriction in the vocal tract is added to the primary constriction which gives a consonant its place of articulation.
- More specifically, velarisation is an example of **secondary articulation**.
- In the case of English "dark /l/", the /l/ phoneme is produced with its **usual primary constriction in the alveolar region** (try speaking this sound).
- It is like the back of the tongue is raised for an /u/ vowel sound creating a secondary (articulation) constriction.
- There are more examples, **life vs. file** (/laɪf/ /faɪl/) clap vs. talc (/klæp/ /tælk/).
- It is a very common **feature of Arabic** and is quite important and interesting for **acoustic analysis**.

**Lesson-13**

- ❖ Although **the RP accent of English** has **20 vowel sounds** (including monophthongs – short and long vowels and diphthongs) yet there is a discrepancy about the number of vowels in other varieties of English.
- ❖ the **vowels of English** can be transcribed in many different ways because **accents of English** differ greatly in **the vowels** they use, and because there is no one (single) right way of transcribing even a single accent of English.
- ❖ There are different sets of symbols used for **the transcription** of English vowels depending on **the accent of the language** and the reason for making the transcription.
- ❖ **The difference in English vowels** is not only related to the number of vowels but it is also found in the **'length'** and **'quality'** of vowel sounds.
- ❖ In order to fully understand the nature of English vowels, we need not only to examine various varieties of English but also the **vowel quality** and **vowel space**.

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- ❖ **Quality** is a term used in auditory phonetics and phonology to refer to the characteristic resonance, or timbre of a sound, which is the result of the range of frequencies constituting the sound's identity.
- ❖ Variations in vowels are describable in terms of quality, (e.g. the distinction between [i] and [e] vowels etc.) would be called a **qualitative difference**.
- ❖ One of the major problems describing vowels is the difficulty to describe precisely the **tongue position** (during the production of a vowel) as people cannot determine appropriately for themselves where their tongues are.
- ❖ So it is important for you to remember that the terms we are using (for the description of vowels) are simply labels that describe how vowels sound in relation to one another.
- ❖ They are not absolute descriptions of the position of the body of the tongue.
- ❖ The reason is that it is perfectly possible to make a vowel sound that is halfway between a high vowel and a mid-vowel and even it is possible to make a vowel at any specified distance between any two other vowels.
- ❖ This is because of the fact that vowels form a continuum (try gliding from one vowel to another -from /æ/ in had to /i/ as in he (try to stay as long as possible on the sounds between them).
- ❖ The result you can see is the difference in vowel quality.
- ❖ Vowel sounds are tricky to be described phonetically accurately because they are points, or rather areas, within a continuous space.
- ❖ A language has a certain finite number of contrasting vowels, each of which may be represented with a discrete alphabetic symbol but phonetically each will correspond to a range of typical values, and between any two actual vowel sounds there is a gradient continuum which determines the dimensions of auditory vowel space.
- ❖ Phonetically, the four vowels [i, æ, the cardinal vowel system) give us something like the four corners of a space showing the auditory qualities (or possibilities) of auditory vowel space.
- ❖ Phoneticians often use terms like high, low, back, and front when they simply label the auditory qualities of vowels and do not describe tongue positions.
- ❖ Many of the American vowels are essentially different than those of British – and that is why it is a different English (compare Standard American Newscaster English with British English as spoken by BBC newscasters).

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- ❖ When you carefully listen to **American vowels** [i, , æ] as in words **head ,heed, hid,, had** (spoken by a native speaker of English) these vowels sound as if they differ by a series of equal steps.
- ❖ Even some **Eastern American** speakers would make a distinct **diphthong** in heed so that their [i] is really a glide (diphthong) starting from almost the same vowel as that in hid.
- ❖ Similarly, the **back vowels** also vary considerably in both forms of English (e.g., many **Californians** do not distinguish between the vowels in words **father and author**).
- ❖ Similarly, the **vowels [ , u]** as in **good and food** also vary considerably as they have a very **unrounded** vowel in good and a **rounded** but central vowel in food.
- ❖ In short, **American English** in ways is distinct from the **British English** and as the students of phonetics and phonology we should try to explore these differences.

**Lesson-14**

- ❖ **Diphthong** is a **single vowel** consisting of the features of **two vowels**.
- ❖ Its most important feature is **the glide** from one vowel quality to another one (so basically it is a glide).
- ❖ **The BBC accent of English** contains a large number (**eight in total**) of diphthongs including **three** ending at / (e , a , – as as in words bay, buy and boy), **two ending** /ʊ/ (əʊ, aʊ \_\_ at , a – as in words no and now) and **three ending at / / ( , e , as in words peer, pair and poor )**.
- ❖ There had been a point of difference whether a diphthong should **be treated as a single phoneme** (in its own right) or it is a combination **of two phonemes**.
- ❖ On the basis **of phonetic classification** of vowel sounds and manners of articulation, we need to compare diphthongs with monophthongs and triphthongs; - a **monophthong** is a vowel with no qualitative change in it - a **diphthong** is a vowel where there is a single (perceptual) noticeable change in quality during a syllable (as in English words beer, time and loud) - a **triphthong** is a vowel where two such changes can be heard.
- ❖ Diphthongs, or **‘gliding vowels’**, are usually classified into phonetic types depending on one of the two elements that is the more **sonorous**: ‘falling’ (or ‘descending’) diphthongs have the **first element stressed**.
- ❖ In the English examples: **‘rising’** (or ‘ascending’) diphthongs have the second element stressed.
- ❖ This term is used to describe some varieties of English (e.g., **American**) pronunciation in which the **/r/ phoneme** is found in all its **phonological** contexts.
- ❖ Remember that in **the BBC accent** of English, /r/ is only found **before vowels** (as in ‘red’ /red/, ‘around’ / ra nd/), but never before consonants or before a pause.
- ❖ **In rhotic** (e.g., some **American**) accents, on the other hand, /r/ may occur before consonants (as in ‘cart’ /ka:rt/) and before a pause (as in ‘car’ /k -rhotic, many accents of the **British Isles** are rhotic (including most of the **south and west of England, much of Wales, and all of Scotland and Ireland**).

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- ❖ Similarly, most speakers of American English speak with a rhotic accent, but there are **non-rhotic areas** including the **Boston area, lower-class New York and the Deep South**.
- ❖ From **English language teaching** point of view, **foreign learners** encounter a lot of difficulty in learning not to pronounce /r/ in the wrong places.
- ❖ A **vowel** may take one out of three forms: **stressed, unstressed and reduced**.
- ❖ Most of the time a vowel is **completely pronounced** when it is in a **stressed syllable** but the same vowel is different in quality (allophonic form) when it takes place in an unstressed syllable, and, of course, it is reduced to another form when it is in a **reduced syllable**.
- ❖ Remember that in most cases, various **reduced** vowels are taking the shape of **a schwa vowel /ə/**.
- ❖ The symbol /ə/ may be used to show many types of vowels with a central, reduced vowel quality.
- ❖ A vowel in an **unstressed syllable** does not necessarily have a **completely reduced** quality.
- ❖ All the English vowels can occur in unstressed syllables in their full, unreduced forms and not all but many of them can occur **in all possible three forms**.

**Lesson-15**

- ❖ **Tense and Lax** are the labels of 'strong' and 'weak' given to **vowels** on the basis of their **behavior**.
- ❖ **Comparative features** of sound set up by **Jakobson and Halle** in their distinctive feature **theory of phonology** to show **variations** in the **manner of articulation** for vowels.
- ❖ **Lax sounds** are produced with **less** muscular effort and movement, and are relatively short and indistinct **vowel sounds**.
- ❖ **i, e, ɒ, æ, ʌ, ʊ, ə** vowels articulated near the **center of the vowel** area compared to **tense sounds** (e.g., u:, i:, ɜ:, a:, ɔə, iə).
- ❖ A **lax vowel** is said to be the one produced with relatively **little articulatory energy**.
- ❖ There is no established standard for **measuring articulatory energy**, this concept only has **meaning** if it is used in **relation to some other sounds** that are articulated with a comparatively **greater** amount of energy (the term tense is used for this).
- ❖ It is mainly **American phonologists** who use the **terms lax and tense** in describing **English vowels**.

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- ❖ The terms can also be used for **consonants** as equivalent to **fortis (tense) and lenis (lax)**, though this is **not** commonly done in present-day description.
- ❖ The terms used in the phonetic classification of **consonantal sounds** on the basis of their **manners of articulation**.
- ❖ **Fortis** refers to a sound made with a relatively **strong degree of muscular effort** and **breath force** compared with the other sound (**known as lenis**).
- ❖ The distinction between **tense and lax** is used for **vowels** on the similar lines.
- ❖ The labels '**strong**' and '**weak**' are sometimes used for the **contrast** involved, but these are more prone to **ambiguity**.
- ❖ These are the **voiceless consonants** ([p], [t], [f], [s], etc.) which tend to be produced with **fortis articulation** (their voiced counterparts being **relatively weak** i.e., **lenis**)
- ❖ When the voicing distinction is reduced, it is only the degree of **articulatory strength** which maintains a **contrast** between sounds.
- ❖ The term '**fortis**' is sometimes used loosely to refer **to strong vowel** articulation also, but this is not a standard practice.
- ❖ A given vowel is **longest** in an **open syllable**, **next longest** in a syllable **closed by a voiced consonant**, and **shortest** in a syllable **closed by a voiceless consonant** (e.g., compare sea, seed, seat or sigh, side, site).
- ❖ Vowels are **longer** in the **stressed syllables** (e.g., compare below and billow).
- ❖ Vowels are **longest** in **monosyllabic words**, **next longest** in words with **two syllables**, and **shortest** in the words with **more than two syllables** (e.g., speed, speedy, speedily).
- ❖ A **reduced vowel** may be **voiceless** when it is after a **voiceless stop** (and before a voiceless stop. Compare *potato* with *catastrophe*).
- ❖ Vowels are **nasalized** in syllables **closed by a nasal consonant** (e.g., /man/).
- ❖ Vowels are **retracted** before **syllable final** [l] (as in words *peel*, *pail*, *pal*).
- ❖ Compare your pronunciation of **/i:/** in heed and heel, of **/eɪ/** in paid and **pail**, and **[æ]** in pad and pal.

GRAND QUIZ

## Lesson-16

- ❖ There is a lot of difference between **words spoken in isolation** than in **a connected speech**.
- ❖ The **key difference** between **citation speech** (where a word is in its complete form) and **connected speech** is the **variable degree** of emphasis placed on different words in the connected speech.
- ❖ This “**degree of emphasis**” is probably related to **the amount of information** that a word conveys in a **particular utterance** (in conversation).
- ❖ The **citation speech/conversational speech** difference is particularly noticeable for the **closed class of words**.
- ❖ This class of words such as **determiners** (a, an, the), **conjunctions** (and, or), and **prepositions** (of, in, with)—the **grammatical words**—are very **rarely emphasized** in the connected speech
- ❖ Normal pronunciation in the connected speech is **quite different** from their citation speech forms.
- ❖ **Closed-class** words show a **strong form**, which occurs when the word is emphasized.
- ❖ *He wanted pie **and** ice cream, not pie **or** ice cream.* There is also a **weak form** which occurs when the word is in an unstressed position.
- ❖ **Words** can have **two** possible forms: **weak and strong**.
- ❖ One of the two possible pronunciations for a word in the **context of connected speech** is ‘**strong**’ and the other is ‘**weak**’.
- ❖ The ‘**strong**’ form is the result of a word being **stressed** (e.g., I want bacon and eggs vs. I want bacon **and** eggs – where the stress is on AND in order to emphasize it).
- ❖ The notion is also used for **syntactically** conditioned alternatives, such as your *book* vs. the book is *yours*.
- ❖ The **weak form** is that which is the result of a word being **unstressed** as in the **normal pronunciation** of OF in *cup of tea*, and in most other grammatical (closed form of) words.
- ❖ Several (**closed class/function**) words in English have **more than one weak form** (e.g. and [ænd] can be [ənd], [ən], [n]).

GRAND QUIZ

- ❖ **Stress** is a term used in phonetics to refer to the **degree of force** (for making it louder and longer) used in producing a syllable.
- ❖ The usual distinction is between **stressed and unstressed syllables**, the former being more **prominent** than the latter (and marked in transcription with a **raised vertical line**, [']).
- ❖ This prominence is usually due to **an increase in loudness** of the **stressed syllable**
- ❖ Increases in **length** and often **pitch** may also contribute to the overall **impression of prominence**.
- ❖ **Stressed syllables** are produced with **greater effort** (force) than **unstressed and stressed syllables** tend to be **longer** than the **unstressed**.
- ❖ Linguistic function, **stress** is often treated under **two** different headings: **word stress** (**lexical stress**) and **sentence stress** (**emphatic stress**).
- ❖ The analysis of the **degree of stress** has attracted a great deal of attention in the **middle decades** of the **twentieth century**.
- ❖ The point is how many **degrees of stress** need to be recognized in order to account for all such **contrasts**,
- ❖ The inter-relationships between **words** derived from a common root, such as *telegraph*, *telegraphic* and *telegraphy*.
- ❖ In the **American structuralist** tradition, **four** such degrees are usually distinguished, and analyzed as stress phonemes, namely (from strongest to weakest) (1) **'primary'**, (2) **'secondary'**, (3) **'tertiary'** and (4) **'weak'**
- ❖ These contrasts are demonstrable only on words in **isolation** as in the **compound elevator operator**.
- ❖ In phonological analysis, most of the experts only distinguish among three **degrees of stress** namely **'primary'**, **'secondary'** and **'weak'** or **'unstressed'** (e.g., ɪg., zæm.ɪ.'nei.jən).
- ❖ **Stress** is a large topic and despite the fact that it has been extensively studied for a very long time, there remain many **areas of disagreement or lack of understanding**.
- ❖ It is important to consider what factors make a **syllable count** as **stressed**.

GRAND QUIZ

- ❖ **Stress** is basically a **prominence of syllable** in terms of **loudness**, **length**, **pitch** and **quality** and all of them work together in order to make a **syllable stressed**.
- ❖ **Two** types of stress are important.
- ❖ Stress on a **syllable** within a word (the **lexical stress**) which changes the **grammatical category** of a word (compare **insult** with **insult**) and also change **meaning** among other things.
- ❖ **Stress** on a word or certain words in a **phrase or sentence**. This type of stress (on word(s) within sentences) is called **sentence level** or **prosodic stress**.
- ❖ A change or modification to **word level stress** in a sentence which is basically a change of **'beat'** on certain words in a sentence.
- ❖ We create **'rhythm'** in spoken language on the basis of **stress**. Analyze the following examples (stressed words are shown in bold): *Mary's younger brother wanted fifty chocolate peanuts.*
- ❖ what is happening here in this sentence is about the distinguishing degree of emphasis which is used for creating **contrast** in sentences or **lines of verse**.
- ❖ Why do we create this difference? This takes place in order **to differentiate** in environment – **superimposition of intonation (degree of prominence)** and it is also the **part** of the formality of a language.

**Lesson 17**

- ❖ **Sentence** rhythm is another feature of a connected speech.
- ❖ Actually, speech is perceived as a **sequence** of events in time, and the word **rhythm** is used to refer to the way events are distributed in time.
- ❖ Obvious example of vocal rhythms is **chanting** as part of games (for example, children calling words while skipping or cricket crowds calling their favorite team's name).
- ❖ In **conversational** speech, the sentence rhythm is a bit complicated, but it is clear that the timing of speech is not random.
- ❖ An extreme view (though a quite common one) is that English speech has a rhythm that allows us to divide it up into more or less equal intervals of time called **feet**,
- ❖ Each of which begins with a stressed syllable: this is called the **stress-timed rhythm hypothesis** (and languages are divided on the basis of this phenomenon into stress-timed and syllable-timed languages).
- ❖ Languages where the length of each syllable remains more or less the same as that of its neighbors whether or not it is stressed are called **syllable-timed languages**.



GRAND QUIZ

- ❖ Most evidence from the study of real speech suggests that such rhythms only exist in a very careful and **controlled** speech, but it appears from psychological research that
- ❖ listeners' brains tend to hear timing regularities even where there is little or **no physical regularity** found.
- ❖ **Intonation** refers (very) simply to the variations in the pitch of a speaker's voice (f0) used to convey or alter meaning but in its broader and more popular sense intonation covers much of the same field as '**prosody**' where variations in such things as voice quality, tempo and loudness are included.
- ❖ It is **certainly** possible to analyze pitch movement (or its acoustic counterpart, fundamental frequency) and find regular patterns that can be described and **tabulated**.
- ❖ Some experts look for an underlying basic **pitch** melody (or a small number of melodies) and then describe the factors that cause deviations from these basic melodies.
- ❖ On the other hand, there are experts who have tried to break down these pitch patterns into small constituent units such as "**pitch phonemes**" and "**pitch morphemes**".
- ❖ The approach most widely used in Britain takes the **tone** unit as its basic unit and looks at the different pitch possibilities of the various components of the tone unit (the pre-head, head, tonic syllable/nucleus, tail, etc.).
- ❖ **Intonation** is said to convey emotions and attitudes. Other linguistic functions have also been claimed (e.g., grammatical structure and new information – the effect of prominence).
- ❖ Interesting relationships exist in English between intonation and **grammar**; for example, in a few extreme cases a perceived difference in grammatical meaning may depend on the **pitch movement**.
- ❖ 'Intonation' is **pitch variation** at sentence level and it could be described in terms of intonational phrase.
- ❖ In order to describe intonation, we need to analyze the role of a '**stressed syllable**' (i.e., pitch change of one syllable) which further creates a major change 'tonic accent' (marked with an asterisk) to create the pitch peak in an intonational phrase.
- ❖ As the part of suprasegmental phonology, intonation refers to the distinctive use of patterns of **pitch, or melody**.
- ❖ In some approaches, **pitch patterns** are described as contours and analyzed in terms of levels of pitch as pitch phonemes and morphemes;
- ❖ **Intonation** performs several functions in a language –
- ❖ The marking of sentence, clause and other boundaries, and the contrast between some **grammatical structures**,
- ❖ Questions and statements, may be made using **intonation**.
- ❖ Although '**tone**' as a word has a very wide range of meanings and uses in ordinary languages,
- ❖ In typical 'tone' languages, the linguistic function of tone is to change the meaning of a **word**.
- ❖ In other (non-tonal) languages, tone forms the **central part of intonation**,
- ❖ In the case of tone languages, it is usual to identify tones as being a property of **individual syllables**,

**GRAND QUIZ**

- ❖ In some approaches, the **pitch patterns** are described as contours and are further analyzed in terms of levels of pitch **as pitch phonemes and morphemes**.
- ❖ In others, the **patterns are** described as tone units or tone groups, analyzed further as contrasts of nuclear tone, tonicity, etc.
- ❖ The **three** variables of target tone is (1) pitch range, (2) height and (3) direction are generally distinguished.
- ❖ One of the most recently developed methods is called the '**tone and break indices**' (ToBI).
- ❖ ToBI is used for the description of intonation (H/L) representing pitch changes and showing **pitch accent**

**Lesson-18**

- ❖ All human speech sounds are **produced** by making the air move (in oral and nasal cavity) thus creating the airstream.
- ❖ Most commonly, the air is moved **outwards** from the body
- ❖ In other words, 'airstream' is a term used in phonetics for a **physiological process** which provides a source of energy capable of being used in speech sound production.
- ❖ The most common is when the air is moved inwards or outwards by initiating air movement involving '**lungs**' (the **pulmonic airstream**), which is used for producing the majority of human speech sounds.
- ❖ The 'glottalic' airstream mechanism, as its name suggests, uses the **movement of the glottis** - the aperture **between the vocal folds** as the source of energy.
- ❖ The third one is the '**velaric**' **airstream mechanism** which involves an airflow produced by a movement of the back of the tongue against the velum.
- ❖ **Pulmonic airstream mechanism** is the most commonly used mechanism for speech production by human beings.
- ❖ Almost all the sounds we produce in speaking are created with the help of air **compressed** by the lungs.
- ❖ The pulmonic airstream may be **ingressive** (as in breathing in)
- ❖ For **speaking practically**, pulmonic airstream is always egressive (speech sounds are produced while pushing the air out).
- ❖ Under this system, the respiratory muscles set the air in **motion**.
- ❖ Lungs – the sponge like tissues – contained within air cage called the **diaphragm** – contract and enlarge lung cavity thus creating the egressive – ingressive actions.
- ❖ A glottalic airstream is produced by making a **tight closure** of the vocal folds and then moving the larynx up or down thus raising of the larynx pushes the air outwards causing an **egressive glottalic airstream**.
- ❖ Similarly, while lowering, the larynx pulls air into the vocal tract and it is called an **ingressive glottalic airstream**.
- ❖ Sounds of this type found in human language are called **ejective or implosive** respectively.
- ❖ **Glottalization** as a process is used for any articulation involving a simultaneous glottal constriction (e.g., a glottal stop).
- ❖ Air is compressed in the mouth or pharynx above the glottal closure, and released while the breath.

**GRAND QUIZ**

- ❖ A further category of sounds involving a glottalic airstream mechanism is known as **implosive**.
- ❖ Speech sounds are made by **sucking** the air (see airstream).
- ❖ Consonants produced with this mechanism are called **clicks**.
- ❖ These sounds have a distinctive role in some languages such as **Zulu**.
- ❖ There are **three** possible mechanisms involved in human speech production.
- ❖ The ingressive glottalic consonants (often called implosives) and egressive ones (ejectives) are found in many **non-European languages**.
- ❖ On the other hand, click sounds (ingressive velaric) are much rarer, but occur in a number of **southern African languages such as Nàamá, Xhosa (or Hausa) and Zulu**.
- ❖ Speakers of other languages including English use click sounds for non-linguistic communication as in the case of the “tut-tut” (equal to the American “tsktsk”) known as the sounds of **disapproval**.
- ❖ The position of larynx (**sound box**) and the vocal folds inside larynx are very important in the description of speech sounds.

**Lesson 19**

- ❖ ‘Phonation’ is a technical term used for describing the forms of vibration of the **vocal folds**.
- ❖ The **glottis** can assume a number of shapes e.g. voiced, voiceless, murmuring and creaky positions.
- ❖ The process of phonation is also known as **‘voicing’** and **laryngeal activity**.
- ❖ Some phoneticians also include the **modifications** in phonation.
- ❖ During the phonation process, the air passes between the **vocal folds**.
- ❖ If a narrow opening is made between the vocal folds, **friction noise** can result.
- ❖ **Voiceless** when the folds are open apart and the air passing through the glottis freely (**/t/ or /p/**).
- ❖ **Voiced** when the folds are tight together and there is vibration during the air passage through the glottis (e.g., **/b/ or /d/**).
- ❖ **Creaky voice** when there is a slight opening in the front and the arytenoid cartilages are tight together, so that the vocal folds can vibrate only at the anterior end.
- ❖ **Breathy or murmuring** sound when the vocal folds are apart but they are vibrating a breathy voice is like a whisper except voice.
- ❖ There are sounds which may be **voiced or voiceless** such as **fricatives and plosives**.
- ❖ A **glottal stop** is only an **allophonic variation** and is used in RP before /p, t, k/.
- ❖ The symbol for a **glottal stop** is like a **question mark [ʔ]**.

**Lesson 20**

**GRAND QUIZ**

- ❖ The **timing of the voicing** in relation to the **consonant articulation** is also very important.
- ❖ This delay (**lag**), has been the subject of much experimental investigation which has led to the development of a scientific measure of voice timing called **voice onset time (or VOT)**.
- ❖ In order to understand VOT, the **three types of plosive sounds** are to be explained.
- ❖ It also provides an important **insight** regarding the **perception of VOT** by bilingual learners.
- ❖ The **Navajo** aspirated stops have a very large VOT value that is quite exceptional (**150 MS**).
- ❖ The normal value for the VOT of English **stressed initial /p/** would be between **50 and 60 MS**.
- ❖ Simple **unaspirated voiceless** stops have a **voice onset time** at or near **zero**.
- ❖ The second possibility is when voice onset time is greater than zero called a positive VOT.
- ❖ The third possibility is when voiced stops have a VOT noticeably **less than zero** called "**negative VOT**".

**Lesson-21**

- ❖ In **phonetics and phonology**, **speech sounds** (segments) using basic units of **contrast** are defined as **gestures** – they are treated as the abstract characterizations of articulatory events with an intrinsic time dimension.
- ❖ **Sounds (segments)** are used to describe the **phonological structure** of **specific languages** and account for **phonological variation**.
- ❖ **Sounds** are the underlying units which are **represented by classes** of **functionally** equivalent **movement patterns (gestures)**.
- ❖ To review the **speech sounds** involving their gestural movements and the **purpose** is to enhance the ability of the experts to describe **unfamiliar sounds** is to clarify the **variation** between **varieties** among **various languages** and **language families**.
- ❖ Sounds are treated as **gestures** rather than **exact locations and manners**.
- ❖ The **traditional terms** which are used for all the **places of articulation** are not just names for **particular locations** but should be thought of as names for **articulatory targets**.
- ❖ A large number of **non-English sounds** are to be found in **Iranian and African languages**.
- ❖ **Different types of targets** are considered as how each **place of articulation** is used in English and in other languages for making **stops, nasals, and fricatives** and treating them all as **articulatory targets**.
- ❖ **Bilabial gesture** – very common in English (e.g., **stops and nasal: p, b, m**).

GRAND QUIZ

- ❖ In some languages (such as **Ewe of West Africa**), **bilabial fricatives** contrast with **labiodental fricatives**.
- ❖ The **symbols** for the **voiceless and voiced bilabial fricatives** are [ɸβ]. These sounds are **pronounced by** bringing the **two lips** nearly
- ❖ **Labiodental fricatives** – many languages (including English) have the **labiodental fricatives** [f, v].
- ❖ No language has **labiodental stops or nasals** except as **allophones** of the corresponding **bilabial sounds**.
- ❖ A **labiodental nasal**, [m̥], may occur when /m/ occurs before /f/, as in **emphasis or symphony**.
- ❖ **Dental sounds** are present **both** in **British and American English**, e.g. dental fricatives [θ, ð].
- ❖ There are **no dental stops, nasals, or laterals** except **allophonically** realized as in **eighth, tenth, wealth**).
- ❖ Many speakers of **French, Italian, and other languages** (such as Urdu, Pashto and Sindhi) typically have **dental stops** such as [t̪ d̪].
- ❖ There is a great deal of **individual variation** in **dental stops** in the **pronunciation** of these consonants.
- ❖ **Alveolar** are very common targets and stops, nasals, and fricatives all occur in English and in many other languages at **alveolar as a target of articulatory gestures** (e.g., t, d, n, l, r., etc.).
- ❖ **Retroflex** is very common sound in many Pakistani languages which is made by **curling the tip of the tongue** up and back so that the **tongue tip moves** during the retroflex sounds such as [ɳ, ɳ̌, ɳ̍, t̪, ť̪, t̪̍].
- ❖ **Retroflex sounds** are also the feature of **Indian English**.
- ❖ **Palato-alveolar** and **palatal** are also possible **articulatory gestures** commonly found in world languages.
- ❖ **Velar sounds** found in **Urdu and other Pakistani languages** need to be mentioned here including [x, ɣ] which are **velar fricatives**.

**GRAND QUIZ**

- ❖ The gestures for **pharyngeal** (such as Arabic pharyngeal fricative [ʕ]) and **epiglottal sounds** (such as **epiglottal fricative** [ʕ]) involve **pulling the root of the tongue or the epiglottis back** toward the back wall of the **pharynx**.

| Description                  | Symbol         | Language                        |
|------------------------------|----------------|---------------------------------|
| 1. Voiced                    | b              | English and other languages     |
| 2. Voiceless unaspirated     | p              | -do-                            |
| 3. Aspirated languages       | p <sup>h</sup> | Sindhi and many other Pakistani |
| 4. Murmured (breathy)        | b <sup>h</sup> | Sindhi                          |
| 5. Implosive                 | ɓ              | Sindhi                          |
| 6. Laryngealized (creaky)    | ɓ̥             | Hausa                           |
| 7. Ejective                  | k'             | Hausa                           |
| 8. Nasal release             | dn             | Russian                         |
| 9. Prenasalized              | nd             | Swahili                         |
| 10. Lateral release          | tɬ             | Navajo                          |
| 11. Ejective lateral release | tɬ'            | Navajo                          |
| 12. Affricate                | ts             | German                          |
| 13. Ejective affricate       | ts'            | Navajo                          |

- ❖ **Nasal manners of articulation** are commonly found in the **languages of the world**.
- ❖ Nasal can also occur **voiced or voiceless** (for example, in Burmese, Ukrainian and French)
- ❖ In **English** and other most languages **nasals** are **voiced**.
- ❖ **Voiceless nasals** are comparatively rare, they are **symbolized** simply by adding the **voiceless diacritic** [̥] under the symbol for the voiced sound.
- ❖ There are **no special symbols** for **voiceless nasals** and it is **written as /m̥/** - a combination of the letter for the **voiced bilabial nasal** and a **diacritic** indicating **voicelessness**.
- ❖ **Fricative** as an articulatory gesture may be divided into **voiced or voiceless** sounds but we can also subdivide fricatives in accordance with other aspects of the gestures that produce them.

**GRAND QUIZ**

- ❖ Some authorities have divided **fricatives into sounds** such as [s], in which the **tongue is grooved** so that the **airstream comes out** through a **narrow channel**, and those such as [θ], in which the **tongue is flat** and forms a **wide slit** through which the **air flows**.
- ❖ A better way of **dividing fricatives** is to **separate them** into **groups** on a purely **auditory basis**.
- ❖ English **voiceless fricatives** [f, θ, s, ʃ].
- ❖ [s, ʃ] differ from [f, θ]. The same kind of difference occurs between the **voiced fricatives** [z, ʒ] and [v, ð].
- ❖ The **fricatives** [s, z, ʒ, ʃ] are called **sibilant sounds**. They have more **acoustic energy**—that is, **greater loudness**—at a **higher pitch** than the other fricative sounds.

**Lesson-22**

- ❖ In **approximants**, **trills**, **taps** and **flaps** are also commonly found with **different articulatory gestures** in the world languages.
- ❖ **Trills**, **taps**, **flaps** vary in terms of the **nature of the sounds** (such as making it a usual **/r/** **approximant** or unusual **rhotic approximate** [ɹ] found in American English and in terms of the **length of the sound** (some making it a short trill, other a long one).

|                                        |   |                 |
|----------------------------------------|---|-----------------|
| Voiced alveolar trill                  | r | Spanish         |
| Voiced alveolar tap                    | ɾ | Spanish         |
| Voiced retroflex flap                  | ɽ | Hausa           |
| Voiced alveolar approximant            | ɹ | English         |
| Voiced alveolar fricative trill        | ɻ | Czech           |
| Voiced uvular trill                    | R | French          |
| Voiced uvular fricative or approximant | ʁ | Parisian French |
| Voiced bilabial trill                  | β | Kele            |
| Voiced labiodental flap                | * | Margi           |

- ❖ The **central–lateral opposition** can be applied to all these manners of articulation producing a **lateral stop** and a **lateral fricative** as well as a **lateral approximant**, which is by far the most common form of **lateral sound**.

GRAND QUIZ

- ❖ English **lateral phoneme** in **British English**, is /l/ with allophones [l] as in led [lɛd] and [ɫ] as in bell [bɛɫ].
- ❖ In **American English** [l] has more **velarization** than is typically heard in British English [l].
- ❖ In **all forms of English**, the air flows freely without **audible friction**, making this sound a **voiced alveolar lateral approximant**.
- ❖ /l/ may be compared with the **sound [ɹ] in red [rɛd]**, which is for many people a **voiced alveolar central approximant**.
- ❖ **Laterals** are usually **presumed** to be **voiced approximants** **unless a specific statement to the contrary is made**.
- ❖ A number of sounds share various features of **speech production** in which the underlying units are represented by classes of functionally equivalent **movement patterns** (gestures).
- ❖ A **particular gesture** gradually increases its influence on the shape of the **vocal tract** thus making many sounds similar in terms of **articulatory features**.
- ❖ **Speech segments** are modeled as **sets of gestures** that have their own **intrinsic temporal structure** allowing them to **overlap** one way or the other.
- ❖ We studied **13 types of stop sounds** (i.e., b, p, p<sup>h</sup>, b<sup>h</sup>, ɸ, k', dn, nd, tɫ, tɫ', ts, ts')
- ❖ **Nine types** of trill, tap and flap (together one category of approximants) sounds (i.e., r, ɾ, ɽ, ɹ, ɻ, ʙ, \*) with a range of similarities in terms of their articulatory gestures.
- ❖ The **articulatory gestures** for **consonants** have a wide range of possibilities of **similar sounds** in world languages.
- ❖ **Matrix of features** specifying a **particular characteristic** of a **segment** and relating that particular characteristic to other **similar sounds** has made possible a range of **similar sounds** to be classified in the **same class of segments**.
- ❖ An **'oral gesture'** would specify all **supraglottal characteristics** (such as place and manner of articulation), and a **'laryngeal gesture'** would specify characteristics of **phonation**.
- ❖ The **notion** is particularly used in dependency phonology, where **'categorical', 'articulatory' and 'initiatory'** gestures are distinguished.



**GRAND QUIZ**

- ❖ Gestures, in turn, are analyzed into **subgestures**; for example, the **initiatory gesture** is analyzed into the **subgestures of glottal stricture, airstream direction and airstream source**.
- ❖ While discussing the articulatory gestures for **consonants**, it may be remembered that the case of **consonants is even more complicated (than vowels)**.
- ❖ A wide **range of sounds** are put together **to classify** them mainly on the basis of the characteristics of their **primary articulation**.
- ❖ Sounds may also be taken together on the basis of their **secondary articulation** (e.g., **added lip rounding**).

Articulatory gestures for the **major categories of consonant sounds** in the following table:

| <b>TABLE 7.8</b> Manners of articulation. |                                                                                                  |                  |
|-------------------------------------------|--------------------------------------------------------------------------------------------------|------------------|
| <b>Phonetic Term</b>                      | <b>Brief Description</b>                                                                         | <b>Symbols</b>   |
| Nasal (stop)                              | Soft palate lowered so that air flows out through the nose; complete closure of two articulators | m, n, ŋ, etc.    |
| (Oral) stop                               | Soft palate raised, forming a velic closure; complete closure of two articulators                | p, b, t, etc.    |
| Fricative                                 | Narrowing of two articulators so as to produce a turbulent airstream                             | f, v, θ, etc.    |
| Approximant                               | Approximation of two articulators without producing a turbulent airstream                        | w, j, l, ɹ, etc. |
| Trill                                     | An articulator set in vibration by the airstream                                                 | r, R, B          |
| Tap                                       | Tongue tip hitting the roof of the mouth; a single movement in a trill                           | ɾ                |
| Flap                                      | One articulator striking another in passing                                                      | ɾ, ɺ             |
| Lateral                                   | With a central obstruction, so that air passes out at the side                                   | l, ɭ, ʎ, ʟ, ʡ, ʢ |
| Central                                   | Articulated so that air passes out the center                                                    | s, ʃ, w, etc.    |