Master of Arts (MA)

Linguistics

MAL -12

Phonetics and Phonology

SCHOOL OF HUMANITIES
TAMIL NADU OPEN UNIVERSITY

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TAMIL NADU OPEN UNIVERSITY
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No.577, Anna Salai, Saidapet, Chennai - 600 015. Tamil Nadu.

Professor K.Parthasarathy
Vice Chancellor

Date:10-02-2021

Message

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At this juncture, I assure that the Tamil Nadu Open University will always extend its constant academic supports from your admission to placement effectively.

I wish you the best of luck in all of your future endeavours!

(K. PARTHASARATHY)

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Phonetics and Phonology
(MAL-12)

UNITS 1-5

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Unit 1

Phonetics and Phonology

STRUCTURE

OVERVIEW

This Unit considers that speech sounds represent a combination of physical and linguistic elements and that these two aspects of sound structure are interdependent. Based on this premise, the Unit explores speech sounds both as physical entities (phonetics) and as linguistic units (phonology).

In viewing sounds as physical elements, the focus will be on articulatory description, i.e., how the speech sounds are made; what types of movements and configurations of the vocal tract are used to produce sounds in the world's languages, etc. In this part, the goal is to learn to produce, transcribe and describe in articulatory terms, many of the sounds known to occur in human languages. We will then analyze the phonological data from a wide range of languages, that is, regularities or patterns in sound distribution are extracted from the data set and then stated within a formal phonological framework.

For gaining greater insights into this Course, we suggest that you get a personal copy of Daniel Jones' Phonetics Dictionary. In the Course, we could provide only samples of sounds, but for an in depth understanding, you would certainly require this Dictionary.

LEARNING OBJECTIVES

After completing this Unit, you should be able to:

- Demonstrate the expertise in analyzing phonological phenomena.
- Share with others the basic theoretical concepts in phonology.
- Practise acoustic phonetics and sound analysis.

1.1 PHYSIOLOGICAL PHONETICS

Phonetics and phonology are worth studying for several reasons. One is that as all study of language, the study of phonology gives the readers insight into how the human mind works. Two more reasons are that the study of the phonetics of a foreign language gives them a much better ability both to hear and to correct mistakes that readers make, and also to teach pronunciation of the foreign language (in this case English) to others.

Phonetics is concerned with how sounds are produced; transmitted and perceived (readers will only look at the production of sounds). Phonology is concerned with how sounds function in relation to each other in a language. In other words, phonetics is about sounds of language, phonology about sound systems of language. Phonetics is a descriptive tool necessary to the study of the phonological aspects of a

language. As phonetics and phonology both deal with sounds, and as English spelling and English pronunciation are two very different things, it is important that readers keep in mind that they are not interested in letters here, but in sounds.

Phonetics

Phonetics – the study of the sounds that form human language – can be divided into three categories. The first type of phonetics, articulatory phonetics, examines the speech organs and processes by which humans produce sounds; the focus is on the speaker of language. The second type of phonetics, acoustic phonetics, focuses on the sound that is produced when a person speaks; the aim of acoustic phonetics is to understand the acoustic properties of speech, and how that speech is perceived by the listener's ears. The third one is auditory phonetics studies how the human ear perceives sounds and how the human brain recognizes and interprets them as distinctive units.

Articulatory phonetics is also known as physiological phonetics that deals with the motive processes, anatomical measurements, spirometric properties, muscle and membrane tone, and kinetic aspects of the production of speech and with related aspects of the reception of speech.

In phonetics and phonology, articulation is the movement of the tongue, lips, jaw, and other speech organs (the articulators) in order to make speech sounds.

Sound is produced simply by expelling air from the lungs. However, to vary the sound quality in a way that can be useful for speaking, two speech organs normally need to come close to each other to contact each other, so as to create an obstruction that shapes the air in a particular fashion. The point of maximum obstruction is known as the place of articulation, and the way in which the obstruction is formed and released is known as the manner of articulation. For example, when making a p sound, the two lips come together tightly, blocking the air for a little while and causing a buildup of air pressure. The lips are then released suddenly, leading to a burst of sound. The place of

articulation of this sound is therefore called bilabial, and the manner is called stop (also known as a plosive). Therefore, Articulatory phonetics is the branch of phonetics which studies the organs of speech and their use in producing speech sounds.

Articulation can be shown with magnetic resonance imaging to demonstrate how the tongue, lips and jaw move and the rise and fall of the soft palate. Such movement alters resonant properties of the vocal tract, and imposes a "time-varying formant structure" onto the speech signal. The study of articulation in making speech is called articulatory phonetics.

LEARNING ACTIVITY 1.1

Define the terms 'phonetics' and 'phonology'.

Note:

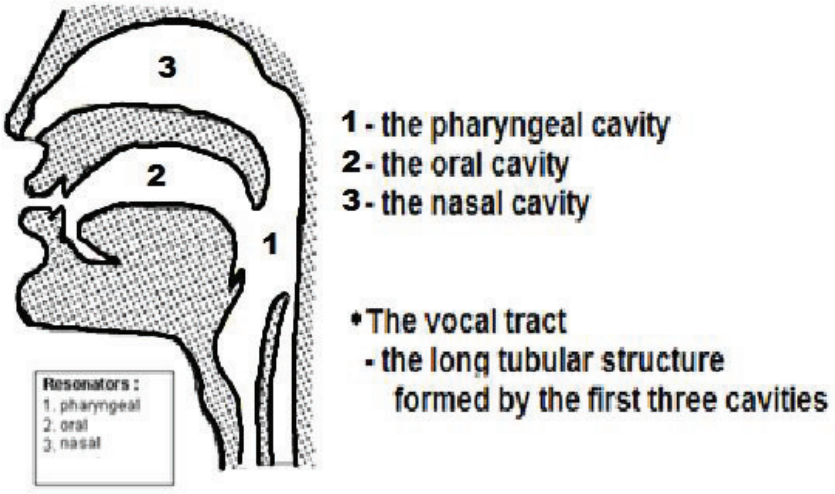
a) Write your answer in the space given below.
b) Check the answer with your academic counsellor.

1.2 ORGANS OF SPEECH

The various organs which are involved in the production of speech sounds are called speech organs (also known as vocal organs). The study of speech organs helps to determine the role of each organ in the

production of speech sounds. They include the lungs, the vocal folds, and most importantly the articulators, a pictorial representation of which is given below:

Articulators

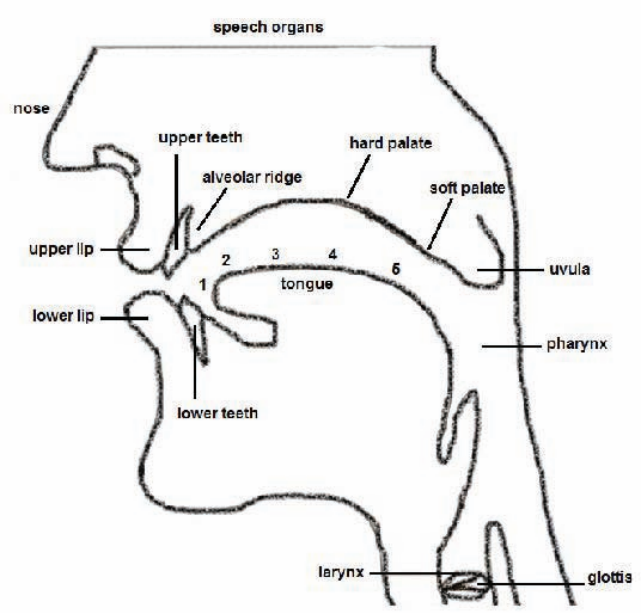


Active articulators

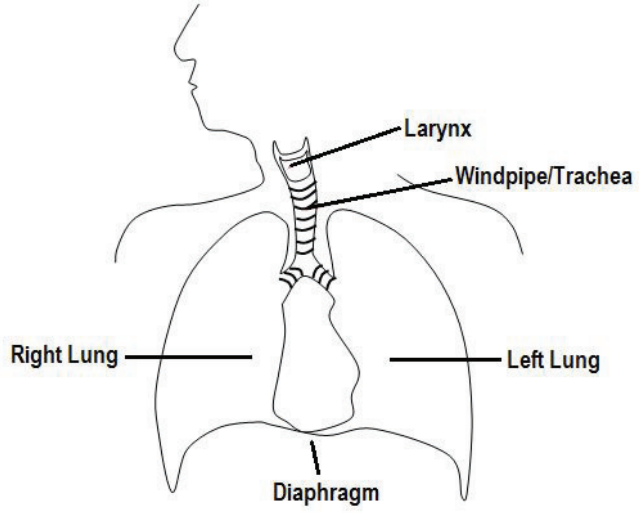
A part of the vocal tract which moves towards another (the passive articulator) to form a constriction during the articulation of a sound. Articulators which may be active are: upper lip, lower lip, tongue tip, tongue blade, tongue front, tongue back, tongue root, vocal folds.

Passive articulators

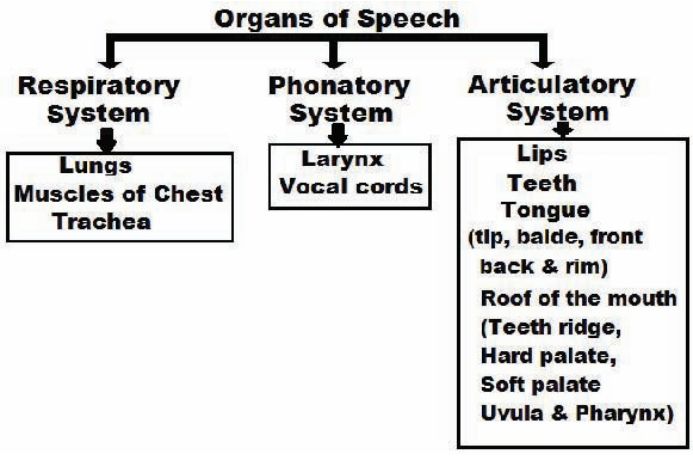
The passive articulator does little or no movement. It is the part of the place of articulation where the active articulator presses against: usually the upper jaw, upper teeth, roof of the mouth, or back of the throat (pharynx).



Let us now discuss the organs of speech. Before we describe each of the organs, do have a look at the pictorial representation below:



Now, let us discuss each of the organs of speech.



The lungs

Speech requires some sort of air source. We produce a majority of speech sounds by forcing air upwards from the lungs, an action that is used in normal breathing. To produce a speech, sound the outward moving airstream must be modified by manipulation of the larynx and articulators in the oral and nasal cavities. The central organs which involve during the production of speech sounds include: the lungs, larynx, and vocal tract (the oral cavity, nasal cavity, and pharynx). While each of these is used for normal physiological processes like in breathing and eating, they also function in the production of speech.

The airflow is by far the most vital requirement for producing speech sound, since all speech sounds are made with some movement of air. The lungs provide the energy source for the airflow. The lungs are the spongy respiratory organs situated inside the rib cage. They expand and contract as we breathe in and out air. The amount of air accumulated inside our lungs controls the pressure of the airflow.

Vocal Tract

The airway used in the production of speech, especially the passage above the larynx, including the pharynx, mouth, and nasal cavities.

Larynx

The larynx, ("voice box") which contains the vocal folds and the glottis more commonly known as the voice box or the Adam's apple, is crucial in the production and differentiation of speech sounds. The larynx is located at exactly the point where the throat divides between the trachea (the windpipe), which leads to the lungs, and the esophagus (the tube that carries food or drink to the stomach).

Over the larynx is a flap called the epiglottis that closes off the trachea when we swallow. This prevents the passage of food into the lungs. When the epiglottis is folded back out of the way, the parts of the larynx that are involved in speech production can be seen.

Vocal Folds

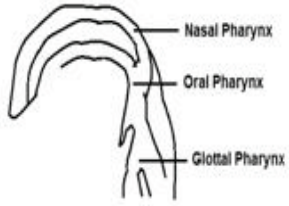
There are two thin sheets of tissue that stretch in a V-shaped fashion from the front to the back of the larynx. These are called the vocal folds. (You'll often hear vocal "cords," which is doesn't accurately convey the way the muscle works.) The space between the vocal folds is known as the glottis. The vocal folds can be positioned in different ways to create speech sounds.

Air passes through the vocal folds. If the vocal folds are open and air passes unobstructed, the vocal folds do not vibrate. Sounds produced this way are called **voiceless**. But if the vocal folds are held together and tense and air doesn't pass unobstructed, the sounds produced this way are call **voiced**.

Pharynx

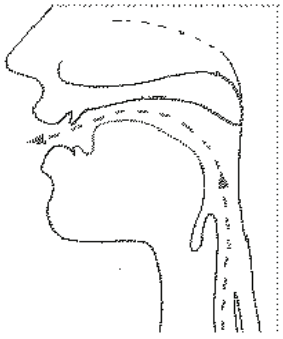
Pharynx is the cavity at the back of the mouth located between the larynx and the main oral cavity. It goes up from the larynx past the

mouth to the nasal cavity. It serves primarily as a tube connecting the larynx with the oral and nasal cavities. Pharynx can be divided into three parts: a) Glottal Pharynx; b) Oral Pharynx; c) Nasal Pharynx



Oral cavity

When the air passes up through the vocal folds, it is expelled through the mouth (oral cavity). The tongue, lips, teeth, and various regions of the mouth constitute points of articulation in the oral cavity. In oral sounds most air is expelled via the oral cavity (mouth). Typically the velum is raised at the back of the mouth to block the passage of air into the nasal cavity.



Alveolar ridge

A short distance behind the upper teeth which makes a change in the angle of the roof of the mouth is called Alveolar Ridge. Sounds which involve in the area between the upper teeth and the ridge are called alveolars.

Hard palate

The hard portion of the roof of the mouth is called Hard palate.

Soft palate/Velum

The soft portion of the roof of the mouth, lying behind the hard palate is known as Soft palate or Velum. The velum can also move: if it lowers, it creates an opening that allows air to flow out through the nose; if it stays raised, the opening is blocked, and no air can flow through the nose.

Uvula

The small, dangly thing at the back of the soft palate is known as Uvula.

Tongue body/Dorsum

The main part of the tongue, lying below the hard and soft palate is called Tongue body. The body, specifically the back part of the body ("dorsum", Latin for "back"), moves to make vowels and many consonants.

LEARNING ACTIVITY 1.2

Write a note on respiratory system involving in production of speech sounds.

Note:

a) Write your answer in the space given below.
b) Check the answer with your academic counsellor.

1.3 ARTICULATOR PHONETICS

Producing a consonant involves making the vocal tract narrower at some location which is called constriction. Generally, Consonant sounds are described by the following 3 aspects:

- Voicing, i.e., is the sound voiced or voiceless?
- Place of articulation, i.e., where is the sound constricted?
- Manner of articulation, i.e., how is the airstream constricted?

The tongue, lips, teeth, and various regions of the mouth constitute places of articulation in the oral cavity. This means that air coming from the lungs is constricted somehow to create consonant sounds.

1.3.1 Place of articulation

With regard to place of articulation, let us look at the following:

- **Bilabial** consonants are produced by creating a closure with both lips: /p, b, m/

- **Labiodental** (*lower lip and upper teeth*) Labiodental consonants are produced by raising the lower lip to the upper teeth. English has only fricative labiodentals, and no stops. /f, v/

- **Interdental** (tongue between the teeth, or just behind the upper teeth (also called "dental"). In English, the inter-dental consonants are also all fricatives.

- **Alveolar** (*tongue tip at the alveolar ridge, behind the top teeth*) English alveolar consonants are formed by raising the tip of the tongue to the alveolar ridge, which lies right behind the teeth. There are both fricatives and stops. /d, t, s, z, n/

- **Post-alveolar** the constriction is made immediately behind the alveolar ridge. The constriction can be made with either the tip or the blade of the tongue.

- **Palatal** the front or body of the tongue raised to the palatal region or the domed area at the roof of your mouth. /j/

- **Velar** the back of the tongue raised to the soft palate ("velum"), the area right behind the palate. As with bilabials, English has a limited range of velar consonants.

- **Retroflex** the tongue tip is curled backward in the mouth. English [ɹ] is a retroflex approximant -- the tongue tip is curled up toward the post-alveolar region (the area immediately behind the alveolar ridge).

- **Glottal** The glottis is the opening between the vocal folds. In an [h], this opening is narrow enough to create some turbulence in the air stream flowing past the vocal folds. For this reason, [h] is often classified as a glottal fricative.

1.3.2 Manner of articulation

The manner of articulation, as we mentioned earlier, describes how the tongue, lips, etc., are configured to produce the sound.

Consonants are organized into six categories based on the way air is constricted:

- **Stop** refers to complete closure, resulting in stoppage of the airflow
- **Affricate** referes to closure followed by frication (= stop + fricative)
- **Fricative** refers to narrow opening, air forced through
- **Nasal** refers to air allowed to pass through the nose (generally while blocked in mouth)
- **Liquid** refers to minimal constriction allowing air to pass freely
- **Glide** refers to minimal constriction corresponding to a vowel (thus also called "semi-vowel")

You may also like to note that

- **Stops**, also called **plosives**, are like little explosions of sound. They are made by obstructing the airstream completely in the oral cavity.
- **Fricatives** are made by forming a nearly complete obstruction of the vocal tract. The opening though which the air escapes is very small, and as a result a turbulent noise is produced.
- **Affricates** are made by briefly stopping the airstream completely and then releasing the articulators slightly so that frication noise is produced.
- **Nasals** are produced by lowering the velum and thus opening the nasal passage to the vocal tract. When the velum is raised against the back of the throat (also called the pharynx wall), no air can escape through the nasal passage. Sounds made with the velum raised are called oral sounds.
- **Approximants** In an approximant, the articulators involved in the constriction are further apart still than they are for a fricative. The articulators are still closer to each other than when the vocal tract is in its neutral position, but they are not even close enough to cause the air passing between them to become turbulent.
- **Laterals** tongue tip is touching the alveolar ridge (or perhaps your upper teeth), but this doesn't make a stop. Air is still flowing during the production of a sound because the side of your tongue has dropped down and left an opening. Sounds which involve airflow around the side of the tongue are called laterals

Now consider the English consonant chart given below:

PLACE / MANNER	Bilabial		Labio-Dental		Dental		Alveolar		Post-Alveolar		Palato Alveolar		Palatal		Velar		Glotal	
Plosive	p	b					t	d							k	g		
Affricate											tʃ	dʒ						
Fricative			f	v	θ	ð	s	z			ʃ	ʒ					h	
Nasal		m						n								ŋ		
Lateral								l										
Approximant/ Semi-Vowel		w								r				j				

LEARNING ACTIVITY 1.3

Define voiced and voiceless sounds in English.

Note:

a) Write your answer in the space given below.
b) Check the answer with your academic counsellor.

1.4 SOUND CLASSIFICATIONS

In this Section, we will look into the classifications of sound in English, which we will discuss in sub-sections 1.4.1 to 1.4.5.

1.4.1 Vocoids and vowels, contoids and consonants

Vocoids are phones in which the expiratory air passes freely out of the mouth, moving along the middle part of the back of the tongue. The

tongue position is (relatively) rather stable throughout the duration of the phone. According to Pike, A vocoid is a phonetic vowel and a contoid is a phonetic consonant. A sound which is both a phonetic vowel and a phonological vowel he called a "syllabic vocoid". A sound which is both a phonetic consonant and a phonological consonant, he called a "non-syllabic contoid".

"Sometimes, however, a phonetic vowel behaves phonologically like a consonant and then we have a non-syllabic vocoid, such as /j/ or /w/ in English. ([j] and [w] are vocoids according to Pike's strict phonetic definition.)" In other words, the "w" and "y" sounds in "wet" and "yet", for example, are non-syllabic vocoids. They are phonological consonants in these words because of the way they act. However, because there is no obstruction to the passage of air they are phonetic vowels.

Similarly, "English consonants are normally non-syllabic contoids. In the occasional cases where a phonetic consonant behaves as a phonological vowel we have a syllabic contoid. In English, /l/ and /n/ sometimes behave like this." The "en" and the "le" sounds in "sudden" and "muddle" are syllabic contoids. They are phonetic consonants but act as the centre of the syllable (they are the whole syllable) in these words thus they are phonological vowels.

1.4.2 Consonant sounds

A Consonant Sound is made by **blocking** air as it leaves the mouth. The tongue, lips & teeth and voice are used in different ways for each sound. Consider the charts below:

type of sound	sound	word-initial	word-final
PLOSIVE	/p/	**p**ark	sto**p**
Made by completely blocking the air in the mouth followed by an explosion of air..	/b/	**b**est	lo**b**
	/t/	**t**ime	migh**t**
	/d/	**d**one	pai**d**
	/k/	**c**art	la**k**e
	/g/	**g**uide	fla**g**

FRICATIVE Made by pushing the air through a gap in the mouth, creating a friction sound.	/f/	fine	knife
	/v/	van	leave
	/θ/	think	path
	/ð/	those	bathe
	/s/	sort	pass
	/z/	zone	cheese
	/ʃ/	ship	marsh
	/ʒ/	-	measure
AFFRICATE Plosive followed by fricative.	/tʃ/	chart	itch
	/dʒ/	giant	page
NASAL Made partly through the nose.	/m/	main	lime
	/n/	no	rain
	/ŋ/	-	sing
APPROXIMANT Imbetween a vowel and a consonant, as the air is not fully blocked.	/w/	wall	-
	/r/	right	-
	/j/	yes	-
	/l/ /ɬ/	like	fall
GLOTTAL Produced in the glottis.	/h/	hate	-
	/ʔ/	-	what

consonant sounds examples:

p pip, tip, pit
b bip, bit, tub
t ten, bat, tip
d dip, tide, kid
k cat, kite, pick
g God, get, gab
f fish, cafe, cough
θ thigh, thought, thick
ð this, them, that
s see, rest, sad
z zoo, zip, breeze
ʃ ship, sheep, shoe
ʒ measure, pleasure, treasure
h hen, help, health
tʃ church, search, chest
dʒ judge, joke, joke
m man, dam, tame
n nut, net, bent
ŋ sing, bring, ring
l let, ball, built
r ride, ring, drink
w wet, one, wed
j yet. European, university

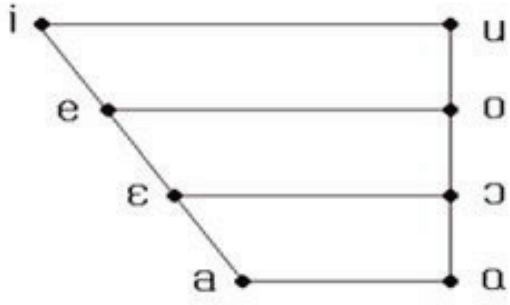
1.4.3 Vowel sounds

Unlike consonants, vowels are produced with relatively free passage of the air stream; the articulators do not touch and so do not significantly obstruct the flow of air from the lungs.

Cardinal vowels

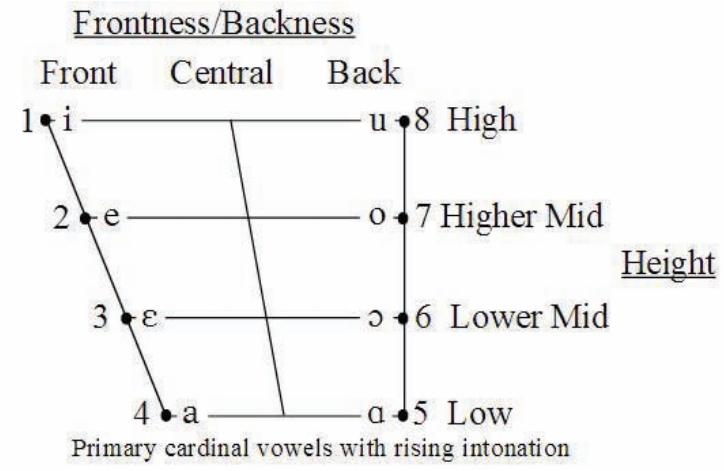
Cardinal vowels are devised by Daniel Jones. He proposes a set of eight reference vowels. Before reading, refer to the given picture.

Cardinal vowel diagram



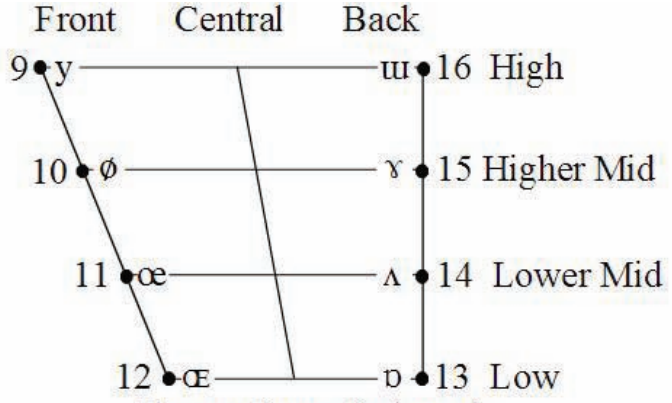
As you see in the picture, there are 2 “anchor points”, i.e., the highest, frontest possible vowel (referred to as Cardinal Vowel 1) and the lowest, backest possible vowel (referred to as Cardinal Vowel 5). The 6 remaining Cardinal Vowels are distributed at equal auditory intervals i.e., 3 along the front limit of the notional vowel space (Cardinal Vowels 2-4) and 3 along the back (Cardinal Vowels 6-8). In practice there is an implicit third anchor vowel, i.e., the highest, backest, most rounded vowel possible; also the three back Cardinal Vowels above Cardinal Vowels 5 have increasing degrees of rounding. A set of Secondary Cardinal Vowels with the same tongue positions but opposite values of lip rounding are also proposed, so that front rounded and back unrounded vowels can be referenced. Note that there are no Central Cardinal Vowels.

Pictorial samples are given below:



Primary cardinal vowels with rising intonation

The Secondary Cardinal Vowels are reference vowels with opposite lip position.



The secondary cardinal vowels

1.4.4 Monophthongs and diphthongs

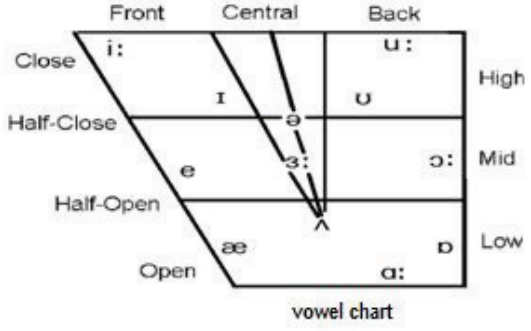
There are two types of vowels, monophthongs and diphthongs. Monophthongs remain qualitatively the same throughout their entire production. They are also called as pure vowels. Whereas diphthongs are vowels in which there is a change in quality. Diphthongs are vowel phonemes articulated with a glide from one vowel to another. The initial segment, the beginning portion of such a diphthong, is phonetically referred to as the on glide and its end portion as the off glide. Dipthongs are produced by saying two vowels sounds consecutively very quickly, making an articulatory movement form one vowel to another within a single syllable.

Changes in the position of the lips and tongue (and thus the jaw), result in changes to the shape of the oral cavity. To describe vowels, we use the position of the tongue and the shape of the lips.

- the tongue body can move up or down (tongue height)
- the tongue can move forward or back (tongue frontness/backness)
- the lips can be rounded or not (lip rounding)

Typically, we describe these movements in the following way:

Height	**Frontness**	**Lip Rounding**
high (close)	front	unrounded
mid-high (close-mid)	central	rounded
mid-low (open-mid)	back	
low (open)		



vowel chart

According to the height to which the tongue is raised we have:

1. **High Vowels:** are those in the production of which the tongue is high in the mouth. It is raised above its rest position.

2. **Mid Vowels:** are those made with the tongue neither high nor low in the Mouth.

3. **Low Vowels:** are those made with the tongue below its rest position.

According to the part of the tongue which is raised we have:

1. **Front Vowels:** are those in the production of which the front of the tongue is the highest point.

2. **Back Vowels:** are those in the production of which the back of the tongue is the highest point.

3. **Central Vowels:** are those made with neither the front nor the back of the tongue. The tongue is neither high nor low in the mouth when central vowels are produced.

According to the degree of lip rounding, we have:

1. **Rounded Vowels:** are those made with rounded lips. The corners of the lips are brought towards each other and the lips are pushed forwards.

2. **Unrounded Vowels:** are those made with the lips spread. The corners of the lips are moved away from each other as for a smile.

3. **Neutral Vowels:** are those made with the lips neither rounded nor spread.

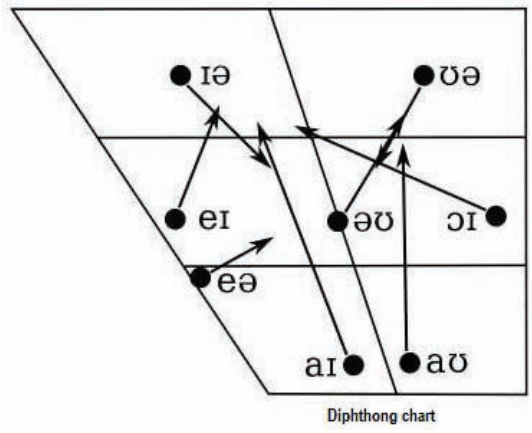
A diphthong is a more complex vowel sound. The word diphthong comes from the Latin word "diphthongus" and the Greek word "diphthongos," meaning "having two sounds."A diphthong is a speech sound that begins with one vowel sound and changes to another vowel sound in the same syllable. Diphthongs are very common in English, but vary greatly from region to region.

- Diphthong: Sounds which consist of a movement or glide from one vowel to another.
- Pure Vowel: A vowel which remains constant, it does not glide.
- Diphthongs have the same length as the long vowels.
- The first part (sound) is much longer and stronger than the second part. / aɪ/

For example, aɪ in the words 'eye' and 'ɪ ' consists of the 'a' vowel, and only in about the last quarter of the diphthong, does the glide to 'ɪ' becomes noticeable.

English has the following 8 diphthongs:

- **Centring diphthong**: 1. three (3) ending in 'ə' : ɪə, eə, □ə
- **Closing diphthong**: three (3) ending in 'ɪ': eɪ, aɪ, ɔɪ and two (2) ending in '□': ə□, a□



Diphthong chart

Examples:

1) Vowels

IPA Symbol	*As In*	*IPA Spelling*
|i|	me, thee, fee	|mi, ði, fi|
|ɪ|	gift, listen, shrill	|gɪft, lɪsən, ʃrɪl|
|ɛ|	wed, led, hair	|wɛd, lɛd, hɛə|
|æ|	sad, cat, manner	|sæd, kæt, mænə|
|ɑ|	father, hot	|fɑðə, hɑt|
|ɔ|	lawn, gone	|lɔn, gɔn|
|ʊ|	wool, full, took	|wʊl, fʊl, tʊk|
|u|	moon, soon	|mun, sun|
|ɜ|	mirth, learn, turn	|mɜθ, lɜn, tɜn|
|ə|	around, aloft, never	|əraʊnd, əlɔft, nɛvə|
|ʌ|	up, cup, abrupt, love, come	|ʌp, kʌp, əbrʌpt, lʌv, kʌm|
|o|	omit, obey, proceed	|omɪt, obɛɪ, prosid|

2) Diphthongs

- ɪə : beard, weird, fierce, ear, beer, tear
- eə: aired, cairn, scarce, bear, hair,
- □ə: moored, tour, lure, sure, pure
- eɪ : paid, pain, face, shade, age, wait, taste, paper
- aɪ: tide, time, nice, buy, bike, pie, eye, kite, fine
- ɔɪ: void, loin, voice, oil, boil, coin, toy, Roy
- ə□: load, home, most, bone, phone, boat, bowl
- a□: loud, gown, house, cow, bow, brow, grouse

1.4.5 Triphthongs

A triphthong is a glide from one vowel to another and the to a third, all produced rapidly and without interruption. For example, a careful pronunciation of the word 'hour' begins with a vowel quality similar to '□ː', goes on to '□' then ends in 'ə'. It says /a□ə/

Triphthong : 5 closing diphthongs with 'ə' added on the end.

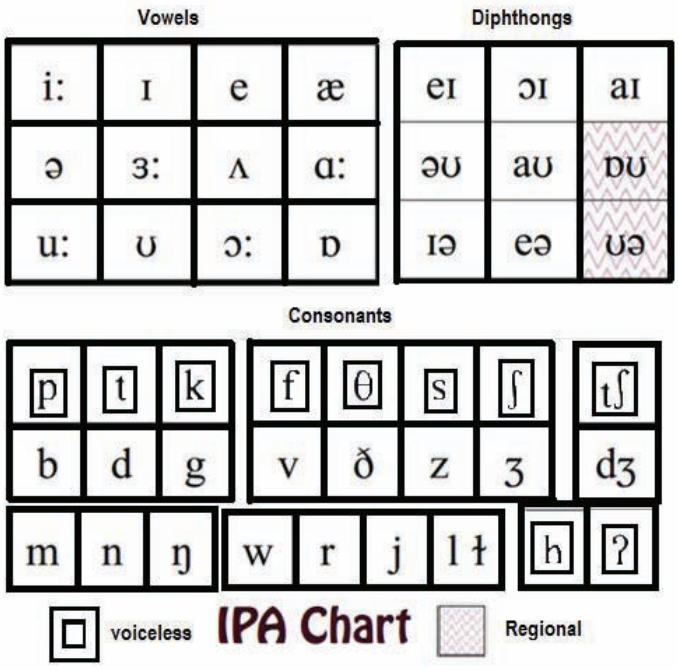
eɪ + ə = eɪə . as in layer, player

aɪ + ə = aɪə. as in lire, fire

ɔɪ + ə = ɔɪə, as in loyal, royal

ə□ + ə = əuə, as in lower, mower

a□ + ə = auə, as in power, hour.



Vowel sounds			Consonant sounds		
No.	**Symbol**	**Examples**	**No.**	**Symbol**	**Examples**
1	/iː/	feet /fiːt/ leap /liːp/	1	/p/	pen /pen/ peep /piːp/
2	/ɪ/	fit /fɪt/ lip /lɪp/	2	/b/	big /bɪg/ babe /beɪb/
3	/e/	men /men/ bed /bed/	3	/t/	ten /ten/ let /let/
4	/æ/	man /mæn/ bad /bæd/	4	/d/	den /den/ red /red/
5	/ʌ/	mud /mʌd/ nut /nʌt/	5	/k/	key /kiː/ cake /keɪk/
6	/ɑː/	fast /fɑːst/ pass /pɑːs/	6	/g/	get /get/ leg /leg/
7	/ɒ/	top /tɒp/ rock /rɒk/	7	/s/	see /siː/ guess /ges/
8	/ɔː/	fall /fɔːl/ lord /lɔːd/	8	/z/	zoo /zuː/ buzz /bʌz/
9	/ʊ/	book /bʊk/ foot /fʊt/	9	/ʃ/	shoe /ʃuː/ wish /wɪʃ/
10	/uː/	boot /buːt/ food /fuːd/	10	/ʒ/	measure /'meʒə/ treasure /'treʒə/
11	/ɜː/	girl /gɜːl/ bird /bɜːd/	11	/tʃ/	check /tʃek/ watch /wɒtʃ/
12	/ə/	a lot /ə'lɒt/ apart /ə'pɑːt/	12	/dʒ/	jet /dʒet/ judge /dʒʌdʒ/
13	/eɪ/	mail /meɪl/ May /meɪ/	13	/f/	fan /fæn/ laugh /lɑːf/
14	/aɪ/	fly /flaɪ/ buy /baɪ/	14	/v/	van /væn/ wave /weɪv/
15	/ɔɪ/	boy /bɔɪ/ boil /bɔɪl/	15	/w/	wet /wet/ wait /weɪt/
16	/aʊ/	cow /kaʊ/ house /haʊs/	16	/j/	yes /jes/ you /juː/
17	/əʊ/	sold /səʊld/ low /ləʊ/	17	/h/	hen /hen/ hat /hæt/
18	/ɪə/	beer /bɪə/ dear /dɪə/	18	/θ/	thin /θɪn/ thought /θɔːt/
19	/eə/	hair /heə/ rare /reə/	19	/ð/	then /ðen/ that /ðæt/
			20	/m/	men /men/ name /neɪm/
			21	/n/	no /nəʊ/ phone /fəʊn/
			22	/ŋ/	ring /rɪŋ/ sang /sæŋ/
			23	/l/	let /let/ tell /tel/
			24	/r/	rat /ræt/ read /riːd/

LEARNING ACTIVITY 1.4

How many diphthongs are there in English? Explain.

Note:

a) Write your answer in the space given below.
b) Check the answer with your academic counsellor.

1.5 INDIAN VARIATIONS IN SPEECH SOUNDS

Indian accents vary greatly. Most Indians lean toward a more 'vernacular', native-tinted, accent for their English speech; while few others speak English with an accent very close to a Standard British (Received Pronunciation) accent.

Vowels

In general, the Indian English has fewer peculiarities in its vowel sounds than the consonants, especially as spoken by native speakers of languages like Hindi, the vowel phoneme system having some similarities with that of English. Among the distinctive features of the vowel-sounds employed by some Indian English speakers:

- Many Indian English speakers do not make a clear distinction between /□/ and /□/. (See cot–caught merger.)

- Unlike British speakers, but like some Americans, some Indian speakers, especially in the South, often do not pronounce the rounded /□/ or /□/, and substitute /a/ instead. This makes not sound as [nat]. The phoneme /□/, if used, is only semi-rounded at the lips.[citation needed]. Similarly, in South India coffee will be pronounced kaafi, copy will be kaapi etc.

- Words such as class, staff and last would be pronounced with a back /a/ as in Southern British dialects, i.e., [kl□s], [st□f], and [l□st].

- Most Indians have the trap–bath split of Received Pronunciation but some Indians of the younger generation who try to imitate American English do not have this split. Though the trap-bath is prevalent in Indian English, it varies greatly. The distribution is somewhat similar to Australian English in Regional Indian English varieties, but it has a complete split in Cultivated Indian English and Standard Indian English varieties.

Consonants

Among the most distinctive features of consonants in Indian English are:

- Standard Hindi and most other vernaculars (except Punjabi, Marathi, Assamese & Bengali) do not differentiate between /v/ (voiced labiodental fricative) and /w/ (voiced labiovelar approximant). Instead, many Indians use a frictionless labio-dental approximant [□] for words with either sound, possibly in free variation with [v] and/or [w] depending upon region. Thus, wet and vet are often homophones.

- Related to the previous characteristic, many Indians prefer to pronounce words such as <flower> as [fla□(r)], as opposed to [fla□ə(r)], and <our> as [a□(r)], as opposed to [a□ə(r)]. This trait is present in dialects of British, South African, and Pakistani English, amongst others, albeit not in all American dialects.

- The voiceless plosives /p/, /t/, /k/ are always unaspirated in Indian English, (aspirated in cultivated form) whereas in RP, General American and most other English accents they are aspirated in word-initial or stressed syllables. Thus "pin" is pronounced [pɪn] in Indian English but [p□ɪn] in most other dialects. In native Indian languages (except in Dravidian languages such as Tamil), the distinction between aspirated and unaspirated plosives is phonemic, and the English stops are equated with the unaspirated rather than the aspirated phonemes of the local languages. The same is true of the voiceless postalveolar affricate /t□/.

- The alveolar stops English /d/, /t/ are often retroflex [□], [□], especially in the South of India. In Indian languages there are two entirely distinct sets of coronal plosives: one dental and the other retroflex. Native speakers of Indian languages prefer to pronounce the English alveolar plosives sound as more retroflex than dental, and the use of retroflex consonants is a common feature of Indian English. In the Devanagari script of Hindi, all alveolar plosives of English are transcribed as their retroflex counterparts. One good

reason for this is that unlike most other native Indian languages, Hindi does not have true retroflex plosives. The so-called retroflexes in Hindi are actually articulated as apical post-alveolar plosives, sometimes even with a tendency to come down to the alveolar region. So a Hindi speaker normally cannot distinguish the difference between their own apical post-alveolar plosives and English's alveolar plosives. However, languages such as Tamil have true retroflex plosives, wherein the articulation is done with the tongue curved upwards and backwards at the roof of the mouth. This also causes (in parts of Uttar Pradesh and Bihar) the /s/ preceding alveolar /t/ to allophonically change to [ʈ] (<stop> /st□p/ → /ʈ□ap/). Mostly in south India, some speakers allophonically further change the voiced retroflex plosives to voiced retroflex flap, and the nasal /n/ to a nasalised retroflex flap.

- Many speakers of Indian English do not use the voiced postalveolar fricative (/□/). Some Indians use /z/ or /d□/ instead, e.g. treasure /ˈtr□zəɹ/, and in the south Indian variants, with /ɻ/ as in <"sh'"ore>, e.g. treasure /ˈtr□əɻ/.

- All major native languages of India (except Bengali) lack the dental fricatives (/θ/ and /ð/; spelled with th). Usually, the aspirated voiceless dental plosive [t̪] is substituted for /θ/ in the north (it would be unaspirated in the south) and the unaspirated voiced dental plosive [d̪], or possibly the aspirated version [d̪ʱ], is substituted for /ð/. For example, "thin" would be realised as [t̪ɪn] instead of /θɪn/ for North Indian speakers, whereas it would be pronounced unaspirated in the south.

- South Indians tend to curl the tongue (retroflex accentuation) more for /l/ and /n/.

- Most Indian languages (except Urdu variety) lack the voiced alveolar fricative /z/. A significant portion of Indians thus, even though their native languages do have its nearest equivalent: the unvoiced /s/, often use the voiced palatal affricate (or post-alveolar) /d□/, just as with a Korean accent. This makes words such as <zero> and <rosy>

sound as [ɽiɾo] and [ɾoɽi] (the latter, especially in the North). This replacement is equally true for Persian and Arabic loanwords into Hindi. The probable reason is the confusion created by the use of the devanagari grapheme < ज > (for /dʒ/) with a dot beneath it to represent the loaned /z/ (as < ज़ >). This is common among people without formal English education.

- Many Indians with lower exposure to English also may pronounce /f/ as aspirated voiceless bilabial plosive [pʰ]. Again note that in Hindi (devanagari) the loaned /f/ from Persian and Arabic is written by putting a dot beneath the grapheme for native [pʰ] < फ >: < फ़ >. This substitution is rarer than that for [z], and in fact in many Hindi /f/ is used by native speakers instead of /pʰ/, or the two are used interchangeably.

- Inability to pronounce certain (especially word-initial) consonant clusters by people of rural backgrounds, as with some Spanish-speakers. This is usually dealt with by epenthesis. e.g., school /isˈkuːl/.

- Sometimes, Indian speakers interchange /s/ and /z/, especially when plurals are being formed, unlike speakers of other varieties of English, who use [s] for the pluralisation of words ending in a voiceless consonant, [z] for words ending in a voiced consonant or vowel, and [ɪz] for words ending in a sibilant.

- Again, in dialects like Bhojpuri, all instances of /ʃ/ are spoken like [s], a phenomenon which is also apparent in their English. Exactly the opposite is seen for many Bengalis.

- In case of the postalveolar affricates /tʃ/ /dʒ/, native languages like Hindi have corresponding affricates articulated from the palatal region, rather than postalveolar, and they have more of a stop component than fricative; this is reflected in their English.

- Whilst retaining /ŋ/ in the final position, many Indian speakers add the [□] sound after it when it occurs in the middle off a word. Hence /□riŋiŋ/ → /□riŋ□iŋ/ (ringing).

- Syllabic /l/, /m/ and /n/ are usually replaced by the VC clusters [əl], [əm] and [ən] (as in button /□bu□ən/), or if a high vowel precedes, by [il] (as in little /□li□il/). Syllable nuclei in words with the spelling er/re (a schwa in RP and an r-coloured schwa in GA) are also replaced VC clusters. e.g., metre, /□mi□tər/ → /□mi□ər/.

- Indian English uses clear [l] in all instances like Irish English whereas other varieties use clear [l] in syllable-initial positions and dark [l] (velarised-L) in coda and syllabic positions.

SUMMARY

This Unit considered speech sounds as representing a combination of physical and linguistic elements. It also considered that these two aspects of sound structure are interdependent. Based on this premise, the Unit explored speech sounds both as physical entities (phonetics) and as linguistic units (phonology). In discussing the physical elements, the Unit focused on articulatory description by considering the way the speech sounds are made; the movements and configurations of the vocal tract to produce sounds, etc. We said that this discussion would help us produce, transcribe and describe many of the human speech sounds. After discussing the physical elements of speech sounds thus, we also analysed the phonological data in terms of regularities or patterns in sound distribution.

Unit 2

Supra-Segmental Phonemes

STRUCTURE

OVERVIEW

In this Unit, we will discuss syllable, accent, stress and its types, intonation and tone.

The Unit will explain that a syllable, often considered the phonological building blocks of words, is a unit of organization for a sequence of speech sounds. In this context, we will explain the meaning of single syllable, two syllable, three syllable and polysyllable words. We will also discuss the various types of syllables and the ways of dividing a word into syllables as well as syllable structure. In the Unit, we will then explain accent and accent rules in English. We will close the Unit by discussing stress, i.e., the degree of emphasis given to a sound or syllable in speech, intonation and tone, i.e., the use of pitch in language to distinguish lexical or grammatical meaning.

LEARNING OBJECTIVES

After completing this Unit, you should be able to:

- Describe 'syllable' and its kinds.
- Describe how prominence is achieved through pitch accents.
- Explain the meaning of 'stress' and how it causes changes in prominence.
- Explain the main characteristics of intonation in English.
- Explain the meaning of tone language by giving an example.
- Perform pitch analyses of passages and sentences.

2.1 SYLLABLE

In phonetics, the smallest perceptible segment is called a 'phone'. In phonology, there is a subfield of segmental phonology that deals with the analysis of speech into phonemes (or segmental phonemes), which correspond fairly well to phonetic segments of the analysed speech.

The segmental phonemes of sign language (formally called 'cheremes') are visual movements of hands, face, and body. They occur in a distinct spatial and temporal order. The sign writing script represents the spatial order of the segments with a spatial cluster of graphemes. Other notations for sign language use a temporal order that implies a spatial order.

English supra-segmental features of pronunciation (ESFP), as key elements in developing effective communications, are regarded as critical aspects of language proficiency to be practiced markedly in language classrooms. They have pivotal roles in determining the utterance meaning, and change in some of these features can lead to change in meaning.

Phonemic particles that we have so far been considering such as vowels, consonants, diphthongs, etc. are called *segmental phonemes*. They contribute to the meaning of a speech segment.

Apart from this class of segmental phonemes, there is another class of particles that play equally important role. These are *supra-segmental Phonemes*. Features of stress, pitch, intonation, and juncture comprise this class, and are said to be 'overlaid' on the segmental units. It is difficult to imagine human communication without these features. They invariably accompany our speech and lend the additional dimension which is more immediately and directly understood. These features convey the speaker's identity, attitudes, emotional states and his/her evaluation of how he/she is being received. Often, in the totality of communicational situation, a listener does not pay so much attention to the words as he does to the rise and fall of pitch, volume of voice, stress and pauses, and so on. He understands the meaning by simply responding to these extra-linguistics indices.

A syllable is a unit of organization for a sequence of speech sounds. For example, the word water is composed of two syllables: *wa* and *ter*. A syllable is typically made up of a syllable nucleus (most often a vowel) with optional initial and final margins (typically, consonants).

Syllables are often considered the phonological "building blocks" of words. They can influence the rhythm of a language, its prosody, its poetic meter and its stress patterns.

A word that consists of a single syllable (like English *dog*) is called a monosyllable (and is said to be monosyllabic). Similar terms include disyllable (and disyllabic; also bisyllable and bisyllabic) for a word of two syllables; trisyllable (and trisyllabic) for a word of three syllables; and polysyllable (and polysyllabic), which may refer either to a word of more than three syllables or to any word of more than one syllable.

Here are examples of words:

- **Single syllable words (monosyllabic words): Examples include** p*e*n, m*a*n, p*i*g, c*u*p, h*a*t. In English, a vowel sound can be made of more than one vowel letter. So the following words have a single syllable as well: f*ee*t, m*oo*n, c*a*ke, h*a*ve, br*ea*k, b*ou*ght. All of these words contain only one vowel sound, and therefore a single syllable.

- **Two syllables (disyllabic words):** A word can have more than one syllable. The following words are examples of words with two syllables. Here are examples of words with 2 syllables. The different syllables are shown on the right, and they are separated with a space, e.g., garden: *gar-den*; hotel: *ho-tel*; consist: *con-sist;* object: *ob-ject*; focus: *fo-cus*.

- **Three syllables (trisyllabic words):** Examples of words with three syllables include September: *sep-tem-ber;* department: *de-part-ment;* telephone: *te-le-phone;* camera: *ca-mer-a;* Saturday: *sa-tur-day;* hamburger: *ham-bur-ger* and vitamin: *vi-ta-min*

- **Four syllables (poly-syllabic words):** Examples of words with four syllables include kindergarten: *kin-der-gar-ten;* information: *in-for-ma-tion;* January: *ja-nu-ar-y;* American: *A-mer-i-can* and discovery: *di-sco-ver-y*

Counting syllables

To find the number of syllables in a word, use the following steps:

1. Count the vowels in the word.
2. Subtract any silent vowels, (like the silent *e* at the end of a word, or the second vowel when two vowels are together in a syllable)
3. Subtract one vowel from every diphthong (diphthongs only count as one vowel sound.)
4. The number of vowels sounds left is the same as the number of syllables.

The number of syllables that you hear when you pronounce a word is the same as the number of vowels sounds heard. For example:

- The word *came* has 2 vowels, but the *e* is silent, leaving one vowel sound and one syllable.

- The word *outside* has 4 vowels, but the *e* is silent and the *ou* is a diphthong which counts as only one sound, so this word has only two vowel sounds and therefore, two syllables.

Kinds of syllables

There are six different kinds of syllables in English:

1. **Closed Syllables**: A closed syllable has one and only one vowel, and it ends in a consonant. Examples include *in, ask, truck, sock, stretch, twelfth,* and *on*.

Closed Syllables

VC	"am"	/æm/
VCC	"ant"	/ænt/
VCCC	"ants"	/ænts/
CVC	"man"	/mæn/
CVCC	"bond"	/b□nd/

2. **Open Syllables**: An open syllable has one and only one vowel, and that vowel occurs at the end of the syllable. Examples include *no, she, I, a,* and *spry*.

Open Syllables

V	"I"	/□e/
CV	"me"	/mi□/
CCV	"spy"	/sp□e/
CCCV	"spray"	/spræe/

3. **Silent-E Syllables**: A silent-e syllable ends in an e, has one and only one consonant before that e, and has one and only one vowel before that consonant. Examples include *ate, ice, tune, slope, strobe*, and *these*.

4. **Vowel Combination Syllables**: A vowel combination syllable has a cluster of two or three vowels or a vowel-consonant unit with a sound or sounds particular to that unit. Examples include *rain, day, see, veil, pie, piece, noise, toy, cue,* and *true*.

5. **Vowel-R Syllables**: A vowel-r syllable is one which includes one and only one vowel followed by an r, or one vowel followed by an r which is followed by a silent e, or a vowel combination

followed by an r. Examples include *car, or, care, ire, air*, and *deer*

6. **Consonant-L-E Syllables**: In these syllables, a consonant is followed by le. The vowel sound in these syllables is the schwa sound that occurs before the l. Examples include *-ble, -cle, -dle, -fle,* and *-gle*.

Ways of dividing words into syllables

There are four ways to split up a word into its syllables:

1. **Divide between two middle consonants:** Split up words that have two middle consonants. For example: *hap/pen, bas/ket, let/ter, sup/per, din/ner,* and ten/nis. The only exceptions are the consonant digraphs. Never split up consonant digraphs as they really represent only one sound. The exceptions are "th", "sh", "ph", "th", "ch", and "wh".

2. **Usually divide before a single middle consonant:** When there is only one syllable, you usually divide in front of it, as in: *"o/pen", "i/tem", "e/vil",* and *"re/port"*. The only exceptions are those times when the first syllable has an obvious short sound, as in *"cab/in"*.

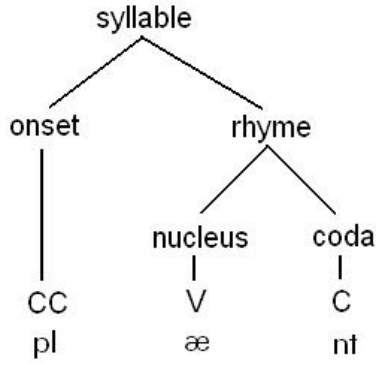
3. **Divide before the consonant before an "-le" syllable:** When you have a word that has the old-style spelling in which the *"-le"* sounds like *"-el",* divide before the consonant, before the *"-le"*. For example: *"a/ble", "fum/ble", "rub/ble" "mum/ble"* and *"thi/stle"*. The only exception to this are "ckle" words like *"tick/le"*.

4. **Divide off any compound words, ***prefixes, suffixes*** and roots which have vowel sounds:** Split off the parts of compound words like *"sports/car"* and *"house/boat"*. Divide off prefixes such at *"un/happy", "pre/paid",* or *"re/write"*. Also divide off suffixes as in the words *"farm/er", "teach/er", "hope/less"* and *"care/ful"*. In the word *"stop/ping",* the suffix is actually "-ping" because this word follows the rule that when you

add "-ing" to a word with one syllable, you double the last consonant and add the "-ing".

Syllable Structure

The syllable can be structured hierarchically into the following components:



In this example, the English word "plant" consists of a single CCVCC syllable. This syllable has been broken up into its onset (any consonants preceding the vowel) and its rhyme (all phonemes from the vowel to the end of the syllable).

The rhyme has been further divided into the nucleus, which in the vast majority of syllables is a vowel (the exceptions are syllabic consonants) and the coda, which are any consonants following the nucleus.

Some other examples include:

flounce: onset = **/fl/**
rhyme = **/aʊns/**
nucleus = **/aʊ/**
coda = **/ns/**

free: onset = **/fr/**
rhyme = **/i**ː**/**
nucleus = **/i**ː**/**
coda = zero

LEARNING ACTIVITY 2.1

What is a syllable?

Note:

a) Write your answer in the space given below.
b) Check the answer with your academic counsellor.

2.2 ACCENT

Accent (/□æk.sənt, □æk.s□nt/) is the phonetic prominence given to a particular syllable in a word, or to a particular word within a phrase. When this prominence is produced through greater dynamic force, typically signaled by a combination of amplitude (volume), syllable or vowel length, full articulation of the vowel, and a non-distinctive change in pitch, the result is called *stress accent*, *dynamic accent*, or simply *stress*. When it is produced through pitch alone, it is called *pitch accent* (although this term is often used with a somewhat different meaning; see below). When it is produced through length alone, it is called *quantitative accent*. English has stress accent.

A prominent syllable or word is said to be *accented* or *tonic*; the latter term does not imply that it carries phonemic tone. Other syllables or words are said to be *unaccented* or *atonic*. Syllables are frequently said to be in *pretonic* or *post-tonic* position; certain phonological rules apply specifically to such positions. For instance, in American English, /t/ and /d/ are flapped in post-tonic position.

English Accent Rules

There are ten English Accent Rules which are important to understand and apply to be able to correctly pronounce and spell English words, and these are listed below:

1. Each word with two or more syllables has one syllable whose vowel is accented, e.g., *for-gét*. Accents are very important to spelling rules. *Accented* means that the sound of that vowel is stressed (sounds louder than those vowels in other syllables).

2. A long word may have more than one accent. The vowel that is stressed more or most is called the *primary accent*. The primary accent is key to many of the spelling rules. A second accented vowel is called the *secondary* accent, e.g., *cón-ver-sá-tion*. Very long words can have even more stressed vowel sounds, but only one primary accent.

3. The primary accent is usually on the root before a double consonant, e.g., *for-gét-ting*.

4. Unaccented vowel sounds frequently have the soft /uh/ schwa sound, especially when there is only one letter in the syllable. All vowels can have the schwa sound, e.g., the '*a*' in *a-boút*.

5. The primary accent is usually on the first syllable in two-syllable words, e.g., *páy-ment*.

6. The primary accent is usually on the second syllable of two-syllable words that have a prefix in the first syllable and a root in the second syllable, e.g., *dis-tráct*.

7. For two-syllable words that act as both nouns and verbs, the primary accent is usually on the prefix (first syllable) of the noun and on the root (second syllable) of the verb, e.g., *pró-duce* as a noun; *pro-dúce* as a verb.

8. The primary accent is usually on the first syllable in three-syllable words, if that syllable is a root, e.g., *chár-ac-ter*.

9. The primary accent is usually on the second syllable in three-syllable words that are formed by a prefix-root-suffix, e.g., *in-vést-ment*.

10. The primary accent is usually on the second syllable in four-syllable words, e.g., *in-tél-li-gent*.

2.3 STRESS

In phonetics, a degree of emphasis is given a sound or syllable in speech. There are various ways in which stress manifests itself in the speech stream, and these depend to some extent on which language is being spoken. Stressed syllables are often louder than non-stressed syllables, and may have a higher or lower pitch. They may also sometimes be pronounced longer. There are sometimes differences in place or manner of articulation – in particular, vowels in unstressed syllables may have a more central (or "neutral") articulation, while those in stressed syllables have a more peripheral articulation. Stress involves a greater outlay of energy as the speaker expels air from the lung and articulates syllables.

Stress may be realized to varying degrees on different words in a sentence; sometimes the difference between the acoustic signals of stressed and unstressed syllables are minimal. So, stress is increased prominence (e.g. higher pitch, increased duration, increased loudness) associated with certain syllables (different languages have different cues to stress).

The strongest stress is primary stress, IPA ˈ e.g., 'about' [ˊəˈba□t], while the weaker stress(es) are secondary stress: e.g., 'manifestation' [ˌmanifəsˈteiˌən]. Stress is a property of syllables and not of sounds within a syllable and is usually culminative. That is, every word has one main stress, stressless words do not occur. Grammatical words such as articles, pronouns, prepositions, auxiliary verbs may be stressless.

2.3.1 Types of stress

In English, there are three types of stress, are these are:

1. **Syllable stress**: When one syllable in a word is pronounced louder and more clearly than adjacent syllables.
2. **Word stress**: When one word is pronounced louder and more clearly than adjacent words in a sentence.
3. **Phrase, clause or sentence stress**: When one phrase, clause or sentence is pronounced louder and more clearly than adjacent phrases, clauses or sentences in a paragraph.

Note that there are few words stressed on the second syllable. The examples include: a'bove, a'go, ca'nal, be'lieve, a'gain, re'ply, etc. There are some words which when used as nouns or adjectives are stressed on the first syllable, but when used as verbs are stressed on the second syllable. Consider the examples given here:

'absent (adj) - ab'sent, (v); ' conduct (n) - con'duct (v); ' decrease (n) - dec'rease (v) ' insult (n) - in'sult(v) ' object (n) - ob'ject(v) ' present(n) - pre'sent(v) ' rebel(n) - re'bel(v) ' subject (n) - sub'ject (v)

Words with weak prefixes are stressed on the root and not the prefix, e.g., a'borad, a'head, a'loud, be'low, be'side, re'duce, etc. And, words ending in –ion are stressed on the last syllable but one, e.g., appli'cation, compo'sition, determi'nation, qualifi'cation, etc.

Also note that content words are stressed. Content words include: nouns (e.g., Hari, Rajan, Soundar); normal verbs (e.g., run, build, shout); adjectives (e.g. beautiful, large, friendly) and adverbs (e.g., loudly, quickly, randomly). And, Function words are unstressed. Function words include determiners (e.g., a, an, the); auxiliary verbs (e.g., don't, can, was); conjunctions (e.g., and, but, as) and pronouns (e.g., he, she, us).

2.3.2 Word Stress

The stress placed on syllables within words is called word stress or lexical stress. Some languages have fixed stress, meaning that the stress on virtually any multisyllable word falls on a particular syllable, such as the first or the penultimate. Statements about the position of stress are sometimes affected by the fact that when a word is spoken in isolation, prosodic factors (see below) come into play, which do not apply when the word is spoken normally within a sentence. Consider the examples below:

1. My friend helped me for constructing my house.
2. 'My friend helped me for constructing my house.
3. My 'friend helped me for constructing my house.

If you look at these three sentences – first sentence gives general meaning of help given by your friend. In sentence 2 infers your friend not your brother's friend whereas, the third sentence gives entirely different meaning that is not your relatives except your friend only. Therefore, word stress is playing a vital role for understanding inner meaning or situation based contextual meaning of a particular word based on its stress.

2.4 INTONATION

In Linguistics, intonation is variation of spoken pitch that is not used to distinguish words; instead it is used for a range of functions such as indicating the attitudes and emotions of the speaker, signalling the difference between statements and questions, and between different types of questions, focusing attention on important elements of the spoken message and also helping to regulate conversational interaction. It contrasts with tone, in which pitch variation in some languages distinguishes words, either lexically or grammatically.

Intonation is often called the melody of language since it refers to the pattern of pitch changes that we use when we speak. By pitch changes

we mean the rise and fall of the voice in connected speech, consisting of different pitch changes.

Intonation is the musical feature of an utterance. Pitch changes on stressed syllables determine the intonation patterns of an utterance. It is actually the combination of stress and pitch variations. Intonation makes speech meaningful. English intonation adds the meaning of an utterance in two ways:

1. It shows the relationship of words within and between sentences;
2. It tells something about the feeling of the speaker

Basic intonation patterns

Most transcription conventions have been devised for describing one particular accent or language, and the specific conventions therefore need to be explained in the context of what is being described. However, for general purposes the International Phonetic Alphabet offers the two intonation marks shown in the box at the head of this article. Global rising and falling intonation are marked with a diagonal arrow rising left-to-right **[↗]** and falling left-to-right **[↘]**, respectively. When they go together, they can make a falling-rising tone.These may be written as part of a syllable, or separated with a space when they have a broader scope:

He found it on the street?
[hi□fa□nd ɪt | □n ðə ↗□st□i□t □]

Here the rising pitch on *street* indicates that the question hinges on that word, on where he found it, not whether he found it.

Yes, he found it on the street.
[↘j□s □hi □fa□nd ɪt | □n ðə ↘□st□i□t □]
How did you ever escape?
[↗□ha□ dɪdju□| □v□ | ə↘□skeɪp □]

Here, as is common with *wh-* questions, there is a rising intonation on the question word, and a falling intonation at the end of the question.

In many descriptions of English, the following intonation patterns are distinguished:

- *Rising Intonation* means the pitch of the voice rises over time [↗];
- *Falling Intonation* means that the pitch falls with time [↘];
- *Dipping* or *Fall-rise Intonation* falls and then rises [↘↗];
- *Peaking* or *Rise-fall Intonation* rises and then falls [↗↘].

a) -- Is ↗John in? -- No, John's ↘not in.

b) -- Is ↗John in? -- No, ↘John's ↘not in

"Is John is?" has rising intonation. The pitch of the voice goes up at the end of the utterance. The speaker is asking a question. "No, John's not in" in a) has falling intonation. The pitch of the voice goes down at the end of the utterance. The speaker is answering a question. "No, John's not in" in b) has falling-rising intonation. The pitch of the voice goes down first and then goes up at the end of the utterance. The speaker is answering a question with implication, such as: John's not in, but his wife/sister/brother is.

A few samples are given here to indicate typical intonation patterns.

Statements

We live in ↘MOScow.

She is ten years↘\OLD.

He doesn't have a ↘CAR.

I don't want to ↘CALL her.

I haven't read this ↘BOOK.

They left for London↘\YESterday.

I'd like a sandwich and a cup of ↘COFfee, please.

Special questions

Where do you↘ LIVE?

When did you ↘ CALL him?

How much↘ IS it?

What are you ↘ READing?

Commands

↘ STOP it! Sit ↘ DOWN.

Close your books and ↘ LISten.

Turn left at the ↘POST office.

Exclamatory sentences

How ↘NICE of you!

Hel ↘ LO! Good ↘ MORNing!

What a wonderful sur ↘ PRISE!

Alternative questions

Do you want ↗COFfee or ↘ TEA?

Did he visit ↗ BELgium or ↘ FRANCE last year?

Would you like to go for a ↗ WALK or would you rather stay ↘ HOME?

Meaning of falling intonation

Falling intonation is used for asking and giving information in normal, quiet, unemphatic style. At the same time, falling intonation conveys certain emotions, such as completion, finality, confidence. Falling intonation sounds more categorical, confident, and convincing than rising intonation.

You ↘ LIVE here, ↗ DON'T you? (The speaker thinks you live here but isn't sure and asks for confirmation.)

You ↘ LIVE here, ↘ DON'T you? (The speaker is sure and expects the answer "yes".)

Nice ↘ WEATHer,↗ ISN'T it? (The speaker thinks that the weather is nice but asks for your opinion and confirmation.)

Nice ↘ WEATHer, ↘ ISN'T it? (The speaker is sure the weather is nice and expects the answer "yes".)

Some more examples:

A: Glide / stress on important words:

1. He's a ↘**teacher.**
2. It's ↘ **dif**ficult for them.
3. She 'wants to ↘**jump.**

B: Fall on definite statements:

1. We 'bought a 'new ↘**house.**
2. They came 'back from ↘**France** yesterday.
3. I was 'very ↘**pleased.**

C: Fall in WH-question (= questions starting with a question word):

1. 'what did he ↘ **say**?
2. 'Who's over ↘**there**?
3. 'Where did ↘ **Rajan** go?

D: Rise in Yes/No questions:

1. Is 'that your ↗ **father**?
2. Would you 'like some ↗**tea**?
3. Does your 'friend ↗smoke?

E: Fall or rise in question tags:

A fall is used when the speaker expects confirmation. A rise is used when the speaker expresses an element of doubt.

1. They are ↘**Swedish**, ↘ **aren't** they?
2. They are ↘**Swedish**, ↗ **aren't** they?
3. He's ↘ **better**, ↘ **isn't** he?
4. He's ↘ **better**, ↗ **isn't** he?

F: Fall + rise in phrases where there is a 'but' in the air.

This pattern fall + rise is often used to send out other signals, too. In addition to reservation, it may for example express warning, and even irony.

She's ↘ ↗**nice**, (but 'not ↘**that** nice)

(Was it a good concert?) – The ↘**singer** was ↗**good**, (but the 'others were ↘**awful**).

G: Rise on incomplete phrases; rise on listing, except final item. Very often the use of a rise signals "more to come, haven't finished yet". A fall often indicates "end of message".

'When she 'came ↗**home**, she 'went 'straight to ↘**bed.**

They 'saw ↗**lions**, ↗**tigers,** ↗**foxes** and ↘elephants.

LEARNING ACTIVITY 2.2

State the meaningfulness of intonation in communication.

Note:

a) Write your answer in the space given below.
b) Check the answer with your academic counsellor.

2.5 TONE

Tone is the use of pitch in language to distinguish lexical or grammatical meaning – that is, to distinguish or to inflect words. All verbal languages use pitch to express emotional and other paralinguistic information and to convey emphasis, contrast, and other such features in what is called intonation, but not all languages use tones to distinguish words or their inflections, analogously to consonants and vowels. Languages that do have this feature are called tonal languages; the distinctive tone patterns of such a language are sometimes called tonemes /ˈtoʊniːm/, by analogy with *phoneme*.

Definition

Consider the ways 'tone' gets described variously by various people.

- To the linguist [or speech therapist] 'tone' means the quality of sound produced by the voice in uttering words.

- In a general sense, 'tone' is the attitude of the speaker or writer as revealed in the choice of vocabulary or the intonation of speech.
- This attitude might be immediately apparent — in tone of voice, for instance.
- It might on the other hand be a complex and subtle manner which takes time to establish — in an extended piece of writing, for instance.

In English, the intonation patterns are on groups of words. These groups can be called **tone groups**. Some books call them tone units, intonation groups, or sense groups.

An understanding of tone groups is crucial to understanding the difference between written and spoken language. In written language, the basic unit is the sentence; in spoken language, it is the tone group. We break up spoken language into tone groups because we need to breathe, and so there is a physical reason for this structure. But there is also the need to think; that is, tone groups also have a cognitive basis. While we are speaking one tone group, we are planning the next one, and so the tone group carries only one idea at a time. Thus the pace of the tone groups, and the information they convey, matches the speaker's thoughts.

There are two basic types of tones in tone languages, and they are

1. **Register tones** are measured by contrasts in the absolute pitch of different syllables. Register tones may be high, mid, or low.
2. **Contour tones** are tones involving a pitch shift upward or downward on a single syllable.

The tone group boundaries have been marked in the following passage (Note that it was delivered at a fast tempo, and so the tone groups are on average longer than in other styles of speech):

it's out on the full / watching Heffanan / he came across / he didn't try to take the ball / he just speculated it straight on out / but it must've been out / before he got there / because the line-out has been given / eight yards outside Belfast twenty-five / nineteen points to four / Belfast in front / fifteen minutes

remaining / and into the line-out / knocked down to Edmundson / can't control it this time /

The division of a sentence into tone groups can affect the meaning in some cases.

For example:

Do you take sugar?

/ I don't / no/ - Meaning: "I don't no".

/I don't no/ - Meaning: "I don't know".

The prince said the princess had been unfaithful.

/The prince said/ the princess had been unfaithful./

Meaning: The prince said (that) the princess had been unfaithful.

/ The prince / said the princess / had been unfaithful /

Meaning: "The prince," said the princess, "had been unfaithful."

SUMMARY

In this Unit, we discussed syllable, accent, stress and its types, intonation and tone. We said that a syllable is a unit of organization for a sequence of speech sounds, and it is often considered the phonological building blocks of words. We also explained that syllables can influence the rhythm of a language, its prosody, its poetic meter and its stress patterns. In this context we explained that a word that consists of a single syllable, two syllables and three syllables are respectively called a monosyllable, disyllable or bisyllable and trisyllable word. We also said a word of more than three syllables, or to any word of more than one syllable, is referred to as a polysyllable word. The Unit also discussed the types of syllables such as closed syllables, open syllables, silent-e syllables, vowel combination syllables, vowel-r syllables and consonant-l-e syllables.

In the context of how a word can be divided into syllables, we referred to the four main ways: divide between two middle consonants, divide before a single middle consonant, divide before the consonant before an '-le' syllable and divide off any compound words, prefixes, suffixes and roots which have vowel sounds.

We also touched upon syllable structure. We then took up for discussion accent and said that it gives the phonetic prominence to a particular syllable in a word, or to a particular word within a phrase. We also studied English accent rules. Then we considered stress as the degree of emphasis given to a sound or syllable in speech. The various ways in which stress manifests itself in the speech stream as well as the types of stress, syllable stress, word stress and clause/sentence stress were also looked into.

Later, we examined intonation, i.e., the variation of spoken pitch used for a range of functions such as indicating the attitudes and emotions of the speaker, signalling the difference between statements and questions, and between different types of questions, focusing attention on important elements of the spoken message and also helping to regulate conversational interaction. We also examined the basic intonation patterns. We closed the Unit with a discussion on tone, i.e., the use of pitch in language to distinguish lexical or grammatical meaning and the description of two tonal groups, i.e., register and contour.

Unit 3

Transcription

STRUCTURE

OVERVIEW

In this Unit, we will explain phonetic transcription with reference to English pronunciation. In this context, we will explain with examples how phonetic transcription will help us pronounce a word correctly without giving any scope for ambiguity. We will also touch upon Received Pronunciation (RP). In the Unit, we will consider the two types of transcription: broad and narrow. A short note on transliteration will close the Unit.

LEARNING OBJECTIVES

After completing this Unit, you should be able to:

- Use phonetic transcription effectively.
- Explain transliteration.

3.1 PHONETIC TRANSCRIPTION

The principal reason for using phonetic transcription is easily stated. When we transcribe a word or an utterance, we give a direct specification of its pronunciation. If ordinary spelling reliably indicated actual pronunciation,

phonetic transcription might be unnecessary; but often it does not. This is obvious when we consider a language such as English, whose spelling is blatantly irregular' or a language such as Chinese, with a non-alphabetic orthography, whose written form generally does not give any direct information about pronunciation (and of course this applies also to Chinese characters used in writing Japanese or Korean). But even in languages with so-called phonetic orthography, such as Swahili, Finnish or Korean han'gŭl, there may be sporadic mismatches between the sound and the spelling of words, while there are almost always phonetic characteristics of continuous speech that are not reflected in the orthography.

For the language learner, a passive acquaintance with phonetic transcription enables him or her to extract precise and explicit information on pronunciation from a dictionary, bilingual or monolingual. Without this information, a learner risks being misled either by an inadequately trained ear or by the dazzling effect of the ordinary spelling.

Nowadays learners of foreign languages ought to have ample opportunities of hearing the language spoken, and not just by their teacher and their fellow-pupils. Television, video tapes, cassettes and CDs give today's learners an advantage which earlier generations did not have. However, mere exposure to authentic language material, while it will certainly improve a learner's comprehension ability, is not sufficient to ensure a good productive command of the language or a good pronunciation. Almost everyone can benefit from explicit pronunciation teaching, in which the use of phonetic transcription has an important role.

A good dictionary gives information on a whole range of matters. As well as telling you what a word means (by translation or otherwise), it should at least give relevant information about its grammatical status and about its pronunciation.

There are various ways of giving information about pronunciation: respelling using orthographic conventions of the learner's language, respelling using orthographic conventions of the target language, or phonetic notation. All of these can be regarded as types of phonetic transcription, though they may well vary considerably in quality.

The easiest transcription system for the beginner is arguably a respelling using the orthographic conventions of the first language: for example, showing English pronunciation in a Korean-English bilingual dictionary by transcribing English pronunciation into han'gŭl, in a Japanese-English bilingual dictionary by transcribing it into katakana, or in a Turkish-English bilingual dictionary by writing it in Latin letters with Turkish spelling conventions. In its crudest form, this has the major drawback of treating English as if its sound system were the same as that of the learner's first language.

At the very least the transcription system will need to be made more elaborate, and therefore more complicated, by devising ways of symbolizing those sounds of English that are not found in Korean, Japanese, or Turkish respectively. Obvious examples of such sounds are the two th-sounds of English, the voiceless and voiced dental fricatives heard in thin and this respectively; or the vowel sound of the word nurse (no matter whether we take British RP or GenAm as our pronunciation model for English).

Respelling systems using English orthographic conventions are found mainly in monolingual dictionaries aimed at native speakers. Such systems are still generally in use in the United States, though I am gratified to say that in Britain they have quite recently been displaced by transcriptions using the International Phonetic Alphabet.

They have to contend with various awkward facts about traditional English spelling: for example, that there is no unambiguous way of spelling the diphthong sound /a□/ (as in mouth, now), because both 'ou' and 'ow', the obvious candidates, correspond to a different diphthong in soul, own (not to mention still other possibilities for ou exemplified in the words group, thought, could, cough, double, tourist, journey). There is no unambiguous way of showing the diphthongs of price, goat in traditional English spelling; so respelling systems have to resort to special symbols involving the letters i and o with a macron diacritic (ī, ō). We can be proud that EFL dictionaries have led the way in employing IPA notation, which is unambiguous and systematic.

Every beginner needs to learn, for example, that the 'w' in the English word 'write' has to be ignored. This word is pronounced identically with the much

less common word ‘rite’. We can show this by transcribing them: they are both transcribed phonetically as /raɪt/. Furthermore, there is yet another word pronounced in the same way: right. All three words are homophones.

Strangely enough, there are many native speakers of English to whom facts such as this are not self-evident. English people beginning the study of phonetics sometimes imagine that words such as write and wrong begin with a w-sound. Or they may believe that know ends with one (but not no). They are so dazzled by their knowledge of the spelling that they hold quite mistaken views about pronunciation. And there are learners of English as a foreign language who get equally misled by the spelling.

Learners of English have to contend with the ambiguity inherent in many spelling sequences. As you know, o plus consonant letter plus e usually corresponds to BrE /ə□/, AmE /o□/, as in home, nose, vote. But sometimes, as in love, come the vowel is /□/; and in move it is /u□/. Where the letter o denotes a short vowel, the sound is usually BrE /□/, AmE /□□/, as in lot, top. But in many other cases it is /□/, as in front, monkey. In the case of the combination or the sound is usually /□□/ (with or without a following r-sound depending on whether we are taking non-rhotic RP or rhotic GenAm as our model), as in north, short, core. But after the letter ‘w’, we find a quite different vowel sound — BrE /□□/, AmE /□□/ — in work, word, world, and in BrE another one again, /□/, in worry. In unstressed syllables the pronunciation is usually /ə, □/), as in minor, tractor and also in information, Oxford (even though many EFL learners wrongly believe these words are pronounced with /□□/ in the second syllable).

There are various “reading rules” (spelling-to-sound rules) to help the learner pass from the written form of an English word to the spoken form. But these rules are complicated and have many exceptions. In practice it is necessary to learn the pronunciation of many words individually.

Some English spellings are entirely ambiguous. If you see the spelling entrance, you will need the context to decide whether it denotes the way in, pronounced /□ɛntrəns/, or the verb meaning to fill with wonder and delight, to /ɪn□tr□□ns/. Other homographs (same spelling, different pronunciation and meaning) include bass, bow, buffet, does, gill, lead, live, minute, putting, read, resume, tear, tinged, wind, wound (Carney, 1994;

Cruttenden, 1994). As soon as we transcribe them, we show the difference in pronunciation.

There are also some tricky verb-noun and verb-adjective pairs. English has nearly a hundred words of the type conduct, digest, incense, object, pervert, where the same spelling is used for a verb, with final stress, and for the related noun, with initial stress. Associated with the stress difference there is often a difference in vowel quality, because of the phenomenon of vowel reduction.

Tiresomely, there are many other English disyllabic verb-noun pairs where both are pronounced alike, with no difference of stress: thus control, promise.

An important group of verb-adjective or verb-noun pairs are those ending in -ate. The verb separate is pronounced /ˈsepəreɪt/, as in the two friends separated at the crossroads. Here, as you observe, the suffix has a strong vowel, the diphthong /eɪ/. But the corresponding adjective, spelt identically, is usually pronounced /ˈseprət/, as in we want separate bills, or (as an adverb) in they left separately. Here the suffix has a weak vowel, in RP traditionally /ɪ/ but nowadays more usually /ə/. One consequence is that the structural description for the process I call compression is now met, so that the basic three syllables readily get reduced to two.

Similar considerations apply to many other words in -ate, including advocate, appropriate, delegate, intimate, moderate, subordinate. Notice that the main word stress remains in the same place in these cases. The same applies to words in which -ment is attached to a bound form, including compliment, document, increment, ornament: thus I paid her a complim/ə/nt; I complim/e/nted her on her excellent work.

Relevant here is the whole question of strong and weak forms of function words (see Cruttenden, 1994). Words such as of, can, them have a strong form with a strong vowel, /ɒv, kæn, ðem/, used mainly when accented, and a weak form with a weak vowel, /əv, kən, ðəm/, used otherwise. This alternation is not shown in spelling, but anyone who fails to apply it in casual speech sounds very un-native-like.

Facts of this kind are not revealed in ordinary spelling, but are immediately evident once we use a phonetic transcription.

Ideally, then, every learner should learn the correct pronunciation of a word at the same time as he incorporates it into his active vocabulary. Experience shows, however, that even advanced students often fail in this task. Fluent speakers of EFL may have an inaccurate impression of what the native-speaker pronunciation of a word is; the inevitable corollary is that their own oral production of it is flawed.

A useful exercise for more advanced learners is "doing transcription", i.e. transcribing an orthographic text, a passage of ordinary English prose, into phonetic symbols (normally, into a phonemic version, perhaps including intonation). In our phonetics classes at University College London we regularly make both our native-speaker and our EFL students of phonetics do this kind of exercise.

For ordinary weekly coursework the student can consult a pronouncing dictionary whenever needed. Under examination conditions, however, the exercise is done unseen, and the student must rely on memory alone. It is both revealing and depressing to see how many errors of transcription are made even by some quite advanced students. I take the following examples from one of our best Spanish-speaking MA Phonetics students, who speaks English fluently and idiomatically, as well as having an excellent grasp of phonetic theory. These are some of her errors in the transcription of English words in a recent examination:

	instead of	
weather	weəðə	ˈweðə
releasing	rɪˈliːzɪŋ	rɪˈliːsɪŋ
polluting	pəˈlʊtɪŋ	pəˈluːtɪŋ
nuclear	ˈnʊkljə	ˈnjuːkliə
chemicals	ˈkemɪkəls	ˈkemɪkəlz

The first of these words, in the British Received Pronunciation we teach as standard, ought to be transcribed /ˈweðə/. The student's use of /eə/ must be a false inference from the spelling. In fact, weather in RP is a homophone of whether. The only position in which orthographic ea

sometimes corresponds to phonetic /eə/ is when followed by r, as in bear, swear.

The distinction between /s/ and /z/ is difficult for learners who do not have that phonemic contrast in their mother tongue. Unlike please, which does contain /z/, release has /s/. In pollute and nuclear, the spelling suggests only /u□/, not /□/; perhaps the student was misled by familiarity with the spoken form of these words, in which however the relatively short duration of the vowel is caused by pre-fortis clipping (Wells, 1990), not by inherent shortness.

Even advanced students sometimes forget the phonetic rules for regular plural and past tense formation in English. Although spelt with s, the plural ending is pronounced /z/ if the preceding segment is voiced and non-sibilant. Clearly someone who thinks they are pronounced as transcribed above (wrongly) is not going to pronounce them correctly, and will have a noticeable foreign accent.

The phonemic principle allows us to use the same transcription symbol for all the variants of a given phoneme. We can write the same /t/ in English /t□p, st□p, l□t, r□tn, b□tl/, despite the clear differences in aspiration and type of release. We can write the same /a□/ in now, louder, mouth, outing, despite differences in the duration of the diphthong. These differences, though real, are a matter of conditioned variation, determined by phonetic context. Every language has its own phoneme system and its own rules for allophonic variation.

The simplicity principle tells us to use the simplest phonetic symbol consistent with the avoidance of ambiguity. Although a few languages distinguish between dental and alveolar plosives, most do not. Although a few distinguish between aspirated and unaspirated plosives, most do not. This means that it is acceptable to use the same symbol /t/ for a range of sound-types in different languages: in English for what is typically an aspirated alveolar, in French for an unaspirated dental, in Swedish for an aspirated dental, and in Dutch for an unaspirated alveolar. The alternative is an explosion of complicated symbols and dictionary entries full of difficult diacritics.

Until we have determined the phonemic structure of a language, we can produce only an impressionistic transcription depending on our familiarity with general-phonetic sound-types. Once we have worked out the phonemics, we can use a systematic transcription, which will be simpler. This is what is appropriate for dictionaries and language textbooks. When considering connected speech, however, we need to take account of the features of connected speech, of the phrase-level and sentence-level phonology: we can produce a "phonotypical" transcription of how we expect a given sentence to sound, or alternatively an impressionistic transcription of what was actually uttered on a given occasion. Each has its uses.

Consider the examples of phonetic transcription:

1. later /leɪtə/ 2. joke /dʒəʊk/ 3. heart /hɑːt/ 4. there /ðeə/
5. doubt /daʊt/ 6. work /wɜːk/ 7. shut /ʃʌt/ 8. think /θɪŋk/
9. pool /puːl/ 10. bought /bɔːt/ 11. *flood* /flʌd/ 12. *mother* /mʌðə/
13. *country* /kʌntrɪː/ 14. feelings /fɪːlɪŋz/ 15. thing /θɪŋ/ 16. major /meɪdʒə/
17. forget /fəget/ 18. whose /huːz/

Difficult vowel combinations:

u: /ʌ/ – *bun*, /ʊ/ – *put*, /ɪ/ – *busy*, /e/ – *bury*, /uː/ – rude, /juː/ – *huge*, /ə/ – *focus*, /ɜː/ – *burn*.

ea: /ɪː/ – *beach*, /e/ – *bread*, /eɪ/ – *break*, /eə/ – *bear*, /ɪə/ – dear.

oa: /əʊ/ – *road*, /ɔː/ – *broad*.

ow: /aʊ/ – *now*, /əʊ/ – *know*, /ɒ/ – *knowledge*.

ough: /əʊ/ – *though*, /uː/ – *through*, /ɔː/ – *bought*, /aʊ/ – *drought*, /ɒf/ – *cough*, /ʌf/ – *enough*. /ə/ – *borough*.

augh: /ɔː/ – *taught*, /ɑːf/ – *laugh*.

Difficult consonant combinations:

ch: /k/ – *character*, /tʃ/ – *choice*, /ʃ/ – *chef*, /Ø/ – *yacht*.

cc: /ks/ – *success*, /k/ – *account*, /tʃ/ – *cappuccino*.

gn: /n/ – *sign*, /gn/ – *recognise*.

ng: /ŋ/ – *sing*, /*ŋg*/ – finger, /*ndʒ*/ – danger.

LEARNING ACTIVITY 3.1

State why we need phonetic transcription.

Note:

a) Write your answer in the space given below.
b) Check the answer with your academic counsellor.

3.2 BROAD AND NARROW TRANSCRIPTION

Phonetic transcription may aim to transcribe the phonology of a language, or it may be used to go further and specify the precise phonetic realisation. In all systems of transcription we may therefore distinguish between broad transcription and narrow transcription. Broad transcription indicates only the most noticeable phonetic features of an utterance, whereas narrow transcription encodes more information about the phonetic variations of the specific allophones in the utterance. The difference between broad and

narrow is a continuum. One particular form of a broad transcription is a phonemic transcription, which disregards all allophonic difference, and, as the name implies, is not really a phonetic transcription at all, but a representation of phonemic structure.

For example, one particular pronunciation of the English word little may be transcribed using the IPA as /ˈlɪtəl/ or [ˈlɪɾɬ]; the broad, phonemic transcription, placed between slashes, indicates merely that the word ends with phoneme /l/, but the narrow, allophonic transcription, placed between square brackets, indicates that this final /l/ ([ɬ]) is dark (velarized).

The advantage of the narrow transcription is that it can help learners to get exactly the right sound, and allows linguists to make detailed analyses of language variation. The disadvantage is that a narrow transcription is rarely representative of all speakers of a language. Most Americans and Australians would pronounce the /t/ of little as a tap [ɾ]. Some people in southern England would say /t/ as [ʔ] (a glottal stop) and/or the second /l/ as [w] or something similar. A further disadvantage in less technical contexts is that narrow transcription involves a larger number of symbols that may be unfamiliar to non-specialists.

The advantage of the broad transcription is that it usually allows statements to be made which apply across a more diverse language community. It is thus more appropriate for the pronunciation data in foreign language dictionaries, which may discuss phonetic details in the preface but rarely give them for each entry. A rule of thumb in many linguistics contexts is therefore to use a narrow transcription when it is necessary for the point being made, but a broad transcription whenever possible.

Broad transcription is what we do to write the phonemes of a particular person's dialect. Narrow transcription is what we do to write the exact pronunciation of that dialect or a particular speaker of the dialect.

Let's look at an example. "*I went to the store and bought a nice bottle of wine.*"

If the transcription is broadly done in general American dialect, it would read:

/aɪ wɪnt tə ðə stɔɹ ənd bɑt ə naɪs bɑɾəv waɪn/

Never mind if you don't understand some of the symbols above. The point is that the transcription above is broad transcription and is the rough estimate of how a General American speaker would say this sentence.

Now let's compare this sentence to a narrow transcription of my pronunciation:

/aːɪ w□nt tə ðə st□□ ən b□?t ə næɪs b□□□ə waːɪn/

There are a lot more quirks and variations in the second transcription. You'll also notice an interesting marking — [ː]. This is an example of "diacritic." Basically we use little markings like this if we need to express something in IPA that can't be described with the regular notation. In the sentence above, for example, [ː] is used after [a] to indicate that that vowel is "long," or pronounced for a longer duration than we normally would.

3.3 TRANSLITERATION

Systematic transliteration is a mapping from one system of writing into another, typically grapheme to grapheme. Most transliteration systems are one-to-one, so a reader who knows the system can reconstruct the original spelling.

Transliteration is opposed to transcription, which maps the sounds of one language into a writing system. Still, most systems of transliteration map the letters of the source script to letters pronounced similarly in the target script, for some specific pair of source and target language. If the relations between letters and sounds are similar in both languages, a transliteration may be very close to a transcription. In practice, there are some mixed transliteration/transcription systems that transliterate a part of the original script and transcribe the rest.

For many script pairs, there is one or more standard transliteration systems. However, unsystematic transliteration is common. There is also another type of transliteration that is not full, but partial or quasi. A source word can be transliterated by first identifying all the applicable prefix and suffix segments based on the letters in the source word. All of these segments, in combination constitute a list of potential partial

transliterations. So a partial transliteration can include only prefix or only suffix segments. A partial transliteration will also include some unmapped letters of the source word, namely those letters between the end of the prefix and the beginning of the suffix. The partial transliteration can be "filled in" by applying additional segment maps. Applying the segment maps can produce additional transliterations if more than one segment mapping applies to a particular combination of characters in the source word.

Transliteration has its own challenges. A simple example of difficulties in transliteration is the voiceless uvular plosive used in Arabic and other languages. It is pronounced approximately like English [k], except that the tongue makes contact not on the soft palate but on the uvula. Pronunciation varies between different languages, and different dialects of the same language. The consonant is sometimes transliterated into "g", sometimes "k", and sometimes "q" in English. Another example is the Russian letter "X" (kha). It is pronounced as the voiceless velar fricative /x/, like the Scottish pronunciation of 9ch0 in "loch". This sound is not present in most forms of English, and is often transliterated as "kh", as in Nikita Khrushchev. Many languages have phonemic sounds, such as click consonants, which are quite unlike any phoneme in the language into which they are being transliterated.

LEARNING ACTIVITY 3.2

Write the phonetic transcription of the following:

i) She sells sea shells on the sea shore.

ii) Thirty-three thrilling thespians thought throughout Thursday.

iii) I wish to wash my Irish wristwatch.

iv) In Hertford, Hereford and Hampshire, hurricanes hardly ever happen.

v) A skunk sat on a stump

Note:

a) Write your answer in the space given below.
b) Check the answer with your academic counsellor.

SUMMARY

In this Unit, we explained phonetic transcription with reference to English pronunciation, and in that context, explained with several examples how phonetic transcription would help us pronounce English words correctly without giving the listener any scope for misinterpretation. In the course of the discussion, we also touched upon Received Pronunciation (RP). Having discussed phonetic transcription at a reasonable length, we looked into its types such as broad and narrow transcription. We closed the Unit by giving a short note on transliteration.

Unit 4

Phonetics and Phonology

STRUCTURE

OVERVIEW

In this Unit, we will be discussing the relationships between phonetics and phonology, i.e., the two sub-disciplines of Linguistics that deal with sound. As we have mentioned elsewhere in the Course, phonetics provides objective ways of describing and analysing the range of sounds human beings use in their languages and it does not relate to any particular language, while phonology concerns with the sound patterns of particular languages. The Unit also looks into language variations with reference to sound clusters, etc. We will then touch upon phonemes and allophones. Towards the end of the Unit, we will discuss

the redundant and contrastive features language with reference to speech sounds or phones.

LEARNING OBJECTIVES

After completing this Unit, you should be able to:

- Explain the relationship between phonetics and phonology.
- Discuss language variation with examples.
- Describe phonetic patterns.
- Discuss contrastive features with examples.

4.1 THE PHONETICS AND PHONOLOGY RELATIONSHIP

Although our species has the scientific name Homo sapiens, i.e., 'thinking human', it has often been suggested that an even more appropriate name would be Homo loquens, or 'speaking human'. Many species have sound based signaling systems, and can communicate with other members of the same species on various topics of mutual interest, like approaching danger or where the next meal is coming from. Most humans (leaving aside for now native users of sign languages) also use sounds for linguistic signaling; but the structure of the human vocal organs allows a particularly wide range of sounds to be used, and they are also put together in an extraordinarily sophisticated way.

There are two sub-disciplines in Linguistics which deal with sound, namely, phonetics and phonology.

Phonetics provides objective ways of describing and analysing the range of sounds human beings use in their languages. More specifically, articulatory phonetics identifies precisely which speech organs and muscles are involved in producing the different sounds of the world's languages. Those sounds are then transmitted from the speaker to the hearer, and acoustic and auditory phonetics focus on the physics of speech, as it travels through the air in the form of sound waves, and the effect those waves have on a hearer's ears and brain. It follows that

phonetics has strong associations with anatomy, physiology, physics and neurology.

However, although knowing what sounds we can in principle make and use is part of understanding what makes us human, each person grows up learning and speaking only a particular human language or languages, and each language only makes use of a subset of the full range of possible, producible and distinguishable sounds. When we turn to the characteristics of the English sound system that make it specifically English, and different from French or Welsh or Quechua, we move into the domain of phonology, which is the language-specific selection and organization of sounds to signal meanings. Phonologists are interested in the sound patterns of particular languages, and in what speakers and hearers need to know, and children need to learn, to be speakers of those languages: in that sense, it is close to psychology.

Our phonological knowledge is not something we can necessarily access and talk about in detail: we often have intuitions about language without knowing where they come from, or exactly how to express them. But the knowledge is certainly there. For instance, speakers of English will tend to agree that the word 'snil' is a possible but non-existent word, whereas *fnil is not possible (as the asterisk conventionally shows). In the usual linguistic terms, snil is an accidental gap in the vocabulary, while *fnil is a systematic gap, which results from the rules of the English sound system.

However, English speakers are not consciously aware of those rules, and are highly unlikely to tell a linguist asking about those words that the absence of *fnil reflects the unacceptability of word-initial consonant sequences, or clusters, with [fn-] in English: the more likely answer is that snil 'sounds all right' (and if you're lucky, your informant will produce similar words like sniff or snip to back up her argument), but that *fnil 'just sounds wrong'. It is the job of the phonologist to express generalizations of this sort in precise terms: after all, just because knowledge is not conscious, this does not mean it is unreal, unimportant or not worth understanding.

When you run downstairs, you don't consciously think 'left gluteus maximus, left foot, right arm; right gluteus maximus, right foot, left arm' on each pair of steps. In fact, you're unlikely to make any conscious decisions at all, below the level of wanting to go downstairs in the first place; and relatively few people will know the names of the muscles involved. In fact, becoming consciously aware of the individual activities involved is quite likely to disrupt the overall process: think about what you're doing, and you finish the descent nose-first. All of this is very reminiscent of our everyday use of spoken language.

We decide to speak, and what about, but the nuts and bolts of speech production are beyond our conscious reach; and thinking deliberately about what we are saying, and how we are saying it, is likely to cause self-consciousness and hesitation, interrupting the flow of fluent speech rather than improving matters. Both language and mobility (crawling, walking, running downstairs) emerge in developing children by similar combinations of mental and physical maturation, internal abilities, and input from the outside world.

As we go along, what we have learned becomes easy, fluent and automatic; we only become dimly aware of what complexity lies behind our actions when we realise we have made a speech error, or see and hear a child struggling to say a word or take a step. Phonologists, like anatomists and physiologists, aim to help us understand the nature of that underlying complexity, and to describe fully and formally what we know in a particular domain, but don't know we know.

The relationship between phonetics and phonology is a complex one, but we might initially approach phonology as narrowed-down phonetics. In this sense, phonetics supplies an embarrassment of riches, providing much more information than speakers seem to use or need: all those speakers, and every utterance different! Phonology, on the other hand, involves a reduction to the essential information, to what speakers and hearers think they are saying and hearing.

4.2 VARIATION

The discussion so far may suggest a rather straightforward dichotomy: phonetics is universal, while phonology is language-specific. But things are not quite that simple.

First, phonologists also attempt to distinguish those patterns which are characteristic of a single language and simply reflect its history, from other languages where a more universal motivation is at issue. In the case of the absence of *fnil, or more generally the absence of word-initial [fn-] clusters, we are dealing with a fact of modern English. It is perfectly possible to produce this combination of sounds; there are words in many languages, including Norwegian 'fnise' to mean 'giggle', or 'fnugg' meaning 'speck', which begin with just that cluster; and indeed, it was quite normal in earlier periods of English – sneeze, for example, has the Old English ancestor 'fne͞san', while Old English 'fnæd' meant 'hem, edge, fringe'; but it is not part of the inventory of sound combinations which English speakers learn and use today.

The same goes for other initial clusters, such as [kn-]. This again was common in Old English, as in 'cna͞wan' 'to know', and survives into Modern English spelling, though it is now simply pronounced [n]; again, [kn-] is also perfectly normal in other languages, including German, where we find 'knabe' (boy), 'knie' (knee), etc.

On the other hand, if you say the words intemperate and incoherent to yourself as naturally as you can, and concentrate on the first consonant written n, you may observe that this signals two different sounds. In intemperate, the front of your tongue moves up behind your top front teeth for the n, and stays there for the t; but in incoherent, you are producing the sound usually indicated by ing in English spelling, with your tongue raised much further back in the mouth, since that's where it's going for the following [k] (spelled c).

Processes of assimilation like this involve two sounds close together in a word becoming closer together in terms of pronunciation, making life easier for the speaker by reducing vocal tract gymnastics. Assimilation

is an everyday occurrence in every human language; and it is particularly common for nasal sounds, like the ones spelled n here, to assimilate to following consonants. Explaining universal tendencies like this one will involve an alliance of phonology and phonetics: so phonologists are interested in universals too.

However, phonological differences also exist below the level of the language: frequently, two people think of themselves as speakers of the same language, but vary in their usage (sometimes some would say tomayto, while others say tomahto). This is not just an automatic, phonetic matter: in some cases a single speaker will always use one variant, but in others, individuals will use different variants on different occasions. It also has nothing to do with the physical characteristics of the different speakers, or the different environments in which they may find themselves, although this was a common belief in the days before Linguists adopted a rigorous scientific methodology.

Thus, Thomas Low Nichols, a nineteenth-century commentator on American English, speculates that 'I know of no physiological reason why a Yankee should talk through his nose, unless he got in the habit of shutting his mouth to keep out the cold fogs and drizzling north-easters of Massachusetts Bay'. There is a natural tendency for geographically distant accents to become more different; the same tendency has led the various Romance languages, such as Italian, Spanish, Romanian and French, to diverge from their common ancestor, Latin. In addition, speakers often wish, again subconsciously, to declare their allegiance to a particular area or social group by using the language of that group; these accent differences can be powerful social markers, on which we judge and are judged.

Furthermore, although there are agreed conventions, which form the basis of the phonology of languages and of accents, those conventions can be subverted in various ways, just as is the case for other areas of human behaviour. In short, even phonologically speaking, there is more than one English – indeed, on one level, there are as many Englishes as there are people who say they speak English. Providing an adequate and accurate phonological description is therefore a challenge: on the one hand, a single system for English would be too abstract, and would

conceal many meaningful differences between speakers; on the other, a speaker-by-speaker account would be too detailed, and neglect what unifies speakers and allows them to recognise one another as using the same system.

Therefore, Phonetics deals with the production of speech sounds by humans, often without prior knowledge of the language being spoken. Phonology is about patterns of sounds, especially different patterns of sounds in different languages, or within each language, different patterns of sounds in different positions in words etc.

4.3 PHONOLOGY: GRAMMAR OF PHONETIC PATTERNS

A given sound has a different function or status in the sound patterns of different languages. Consider the following in this context:

- The consonant cluster /st/ is OK at the beginning, middle or end of words in English.
- At beginnings of words, /str/ is OK in English, but /ftr/ or /ʃtr/ are not (they are ungrammatical).
- /ʃtr/ is OK in the middle of words, however, e.g. in "ashtray".
- /ʃtr/ is OK at the beginnings of words in German, though, and /ftr/ is OK word-initially in Russian, but not in English or German.

For example, a glottal stop [ʔ] occurs in both English and Arabic. In English, at the beginning of a word, the glottal stop is a just way of beginning vowels, and does not occur with consonants. In the middle or at the end of a word, the glottal stop is one possible pronunciation of /t/ as in, for example, ‘pat’ [paʔ]. And, in Arabic, the glottal stop is a consonant sound like any other, e.g., /k/, /t/ etc.

Phonemes and allophones

The vowels in the English words "cool", "whose" and "moon" are all similar but slightly different. They are three variants or allophones of the /u/ phoneme. The different variants are dependent on the different contexts in which they occur. Likewise, the consonant phoneme /k/ has different variant pronunciations in different contexts. Compare:

keep /kip/	The place of articulation is fronter in the mouth	[k$_{+}$^{h}]
cart /kɑt/	The place of articulation is not so front in the mouth	[k^{h}]
coot /kut/	The place of articulation is backer, and the lips are rounded	[k^{hw}]
see**k** /sik/	There is less aspiration than in initial position	[k˴]
s**c**oop/skup/	There is no aspiration after /s/	[k]

These are all examples of variants according to position (contextual variants). There are also variants between speakers and dialects. For example, "toad" may be pronounced [tëUd] in high-register RP, [toUd] or [toɪd] in the North. All of them are different pronunciations of the same sequence of phonemes. But these differences can lead to confusion: [toUd] is "toad" in one dialect, but may be "told" in another.

Phonological systems

Phonology is not just (or even mainly) concerned with categories or objects (such as consonants, vowels, phonemes, allophones, etc.) but is also crucially about relations. For example, the English stops and fricatives can be grouped into related pairs which differ in voicing and (for the stops) aspiration:

Voiceless/ aspirated	p^{h}	t^{h}	k^{h}	f	s	θ	ʃ	h
Voiced/ aspirated	b	D	g	g	z	ð	□	

Patterns lead to expectations: we expect the voiceless fricative [h] to be paired with a voiced [ɦ], but we do not find this sound as a distinctive phoneme in English. And in fact /h/ functions differently from the other voiceless fricatives (it has a different distribution in words etc.) So even though [h] is *phonetically* classed as a voiceless fricative, it is phonologically quite different from /f/, /s/, /θ/ and /ʃ/.

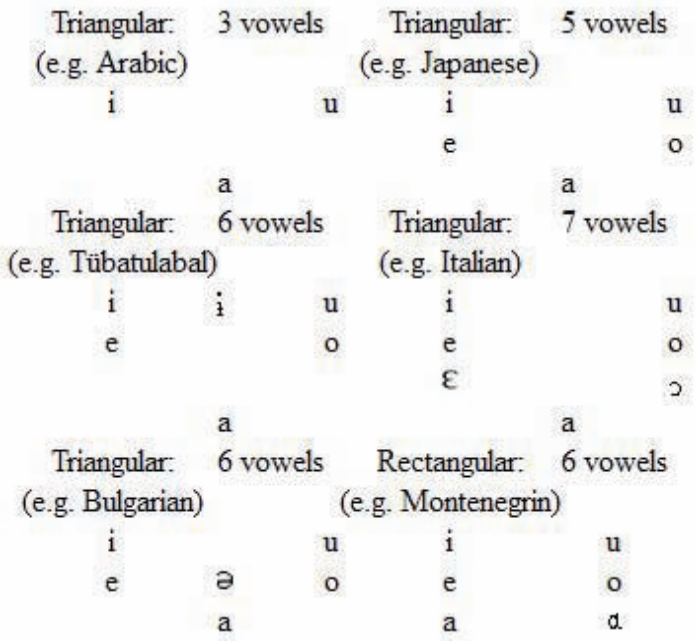
Different patterns are found in other languages. In Classical Greek a three-way distinction was made between stops:

Voiceless/aspirated	pʰ	tʰ	kʰ
Voiced/unaspirated	p	t	k
Voiced (and unaspirted)	b	d	g

In Hindi-Urdu a four-way pattern is found, at five places of articulation:

Voiceless/ Aspirated	pʰ	tʰ	ʈʰ	cʰ	kʰ
Voiceless / unaspirated	p	t	ʈ	c	K
Voiced / unaspirated	b	d	etc.	ɟ	ɡ
Breathy voiced ("voiced aspirates")	bɦ	dɦ	etc.	ɟɦ	ɡɦ

Shapes of vowel systems: some common examples:



Phonology as interpretation of phonetic patterns: Fang (Bantu: Cameroon, Gabon, Equatorial Guinea)

Fang	English	Fang	English
1) etfˣəʃ	*shoulder*	7) təm	*branch*
2) ŋgvˣbi, ŋgvəbi	*hippopotamus*	8) bikəq	*back teeth*
3) ndvˣ(ə)	*dam*	9) elən	*water tortoise*
4) kfəl	*tortoise*	10) ᵑᵐfəq	*bag*
5) ŋkfˣə	*salt*	11) tʃəŋ	*neck*
6) ŋkɔl	*rope*	12) osən	*squirrel*

LEARNING ACTIVITY 4.1

Explain the relationship between phonology and phonetics

Note:

a) Write your answer in the space given below.
b) Check the answer with your academic counsellor.

4.4 REDUNDANT AND CONTRASTIVE FEATURES

Every language consists of speech sounds called phones. These different sounds do not all have the same status in the system of English phonology. The occurance of certain phonetic features is entirely predictable, as is the case in English with *voicing in sonorants, nasality of vowels, or length in vowels*. Features whose presence is entirely predictable based on the phonetic environment are called

redundant phonetic features. Contrasts involving a redundant feature cannot be used to signal a change in meaning. Adding or removing a redundant, predictable feature results merely in a mispronunciation, not in a new meaning. In a broad phonetic transcription, redundant features can be ignored, and only the elements of pronunciation that are important for distinguishing meaning listed.

The occurrence of other sounds and features in a particular language is not predictable based on phonetic context. In English, for example, voicing in obstruents is never predictable: *pat/bat/ tip/dip/ girl/curl*; the contrast between fricatives and stops is also not predictable: *send/tend*. Or the difference between central and lateral in liquids: *red/led; ball/bar*. Such features are called distinctive, or contrastive, phonetic features. Phonetic features whose presence or absence can alter meaning are called phonemic features. The presence of a phonemic feature is not predictable according to phonetic context. Adding or subtracting a phonemic feature normally results in a change of meaning as well as in a change in pronunciation.

4.4.1 Complementary and contrastive distribution

Phonetic features that are redundant in one language can be phonemic in the other. The two phones [r] and [l] are present in English and Korean but play an entirely different phonological role in each language. They are phonemically different in English, always signaling a difference in meaning: *list/wrist war/wall*. In Korean, [r] is word initial and [l] is syllable final: rupi *ruby*; mul *water*.

The two sounds never contrast to produce a difference in meaning. In English the two sounds are in contrastive distribution; in Korean they are in complementary distribution. Similarly, features that are redundant in English may be phonemic in another language: aspiration in English and Mandarin Chinese: k^{h}a~n (to see) vs. ka~n (trunk, stem); t^{h}a# (pagoda) vs. ta# (beat, strike); p^{h}i@ng (a sound) vs. pi@ng (soldiers, army).

4.4.2 Phonemic analysis

How does a linguist determine which phonetic features in a given language are phonemic and which are not?

First, a phonetic inventory of speech sounds must be carried out. One needs to determine which speech sounds are present in a particular language in the first place. A linguist studying English for the first time, for instance, will soon discover that English has *aspirated p, unaspirated p* and *non-released p*, but no *glottalized p, implosive p,* or *pharygealized p*. The first stage of phonological analysis simply involves an exhaustive phonetic analysis.

Second, having determined which speech sounds occur in a particular language, the linguist must determine whether or not the phonetic difference between these sounds is redundant or phonemic. Phonology is concerned with determining which speech sounds contrast with one another to produce differences in meaning and which speech sounds are in complementary distribution and never produce meaninful contrasts. To find which sounds are redundant and which are phonemic, linguists usually try to find a pair of words with different meanings that differ formally by only a single sound. A pair of words which are distinguished by a difference in only one sound is called a minimal pair: *pit/sit cat/cought; law/raw*.

In the case of a minimal pair, the two contrasting sounds are obviously capable of distinguishing meaning, so the difference between them is phonemic. The linguist will find that some speech sounds in a given language help form many minimal pairs, others only a few. The number of minimal pairs involving a particular sound is called the functional yield of that sound. There are 429 minimal pairs involving English sound [d] and only 32 involving [D]. Some sounds contrast directly with one another in only a few minimal pairs: *ether/either, thigh/thy, dilution/delusion, Confucian/ confusion*.

A third phase of phonological analysis is to try to remove from consideration all redundant phonetic features and focus only on the distinctive, phonemic features. The most widely employed means of

accomplishing this is to group together all the sounds that actually occur in a language into contrastive sets called phonemes. For example, sounds which are in complementary distribution, such as the English sounds *p, ph, non-released p*, are treated as a single phonological unit, or phoneme, their redundant phonetic differences ignored.

The actual phones that act as positional variants of one and the same phoneme are called allophones of that phoneme; thus, the three English p's are allophones of a single phoneme. The phoneme is an abstract unit. We don't hear or pronounce the phonemes of a language; we hear and pronounce their allophones.

The question then arises as to how to symbolize such an abstraction as the phoneme that is manifested as the three English p's. Since there are two ways of looking at the sound system of language: one phonetic and the other phonemic, there are also two types of transcriptions. The one we have been using up till now is a narrow transcription intended to portray as much phonetic information as possible. This type is called phonetic transcription and is enclosed in square brackets. The same IPA symbols can be used in phonetic transcription to transcribe any language of the world. Thus the phonetic symbol [l] represents the same sound in English and Korean.

The other type of transcription is called phonemic transcription and is enclosed in slanted brackets. Phonemic transcription ignores any redundant phonetic detail in a language and only portrays the distinctive and meaningful phonetic differences. Phonemic transcription represents phonemes, not the sounds as they are actually spoken.

4.4.3 Choosing phonemic symbols

What symbol is chosen from among the phonetic symbols for the individual allophones is up to the linguist performing the phonological analysis and depends on several factors. Some phonemes have the same or nearly the same pronunciation in every phonetic environment, as is true of English [s], [m]. In such cases, the symbol for the phone

can also be used as the symbol for the phoneme. If there is only one surface manifestation of a phoneme, then the phonetic symbol for that sound becomed the phonemic symbol, as well. If a phoneme is composed of several phonetically distinct allophones, however, then any of the following may be done:

a) diacritics are removed from allophone symbols, simplifying the sound.
b) the phonetic symbol for one of the allophones may be co-opted to stand for all the allophones (carrot instead of schwa, or o instead of O)
c) the most common letter of the alphabet is chosen (t/T)
d) some compromise letter is chosen., perhaps not even a symbol from the phonetic alphabet (capital R for l/r in Korean).

Obviously, the process of choosing a phonemic symbol is somewhat arbitrary and up to whatever linguist is performing the analysis. Phonemic symbols are a type of phonetic shorthand that with specific value for one and only a single language; they are not universal like the symbols of the phonetic alphabet.

Thus, the value of symbols used in phonemic transcription is idiosyncratic and differs from language to language. Phonemic transcription depends upon the interrelationship of sounds in each particular language, whereas phonetic transcription depends simply on the pronunciation of each individual sound regardless of its function in the sound system of the given language.

A phonetic symbol stands for one and the same sound regardless of language, but a phonemic symbol often stands for any one of several actual sounds. For example, the phonetic symbol [l] stands for the same sound in the phonetic transcription of English and Korean. A phonemic symbol such as /l/ usually stands for quite different collections of sounds in different languages. English, for example, has a phoneme that could be represented as /l/ with two different separate surface manifestation: *velarized or non-velarized l*; In phonetic transcription these two l-sounds would be written each with their own separate symbol. In phonemic transcription they would both be written

with the same symbol /l/. In Korean the phonemic symbol /l/ would represent the allophones [r] and [l].

Remember that phonetic transcription, enclosed in square brackets, attempts to express as much phonetic detail as possible, redundant or otherwise; phonemic transcription does not mark redundant features, but rather is intended to represent only those phonetic details of a given language that are distinctive. Phonemic transcription, therefore, uses phonetic symbols in a way unique to each particular language. The phonemic symbols chosen in your handout are essentially the same sounds used in phonetic transcription minus the diacritical marks.

4.4.4 Contrasts

Phonemics is the study of the patterns expressed by phonemes. There is a discovery procedure for discovering phonemes. In contrast where a change in one sound produces a change in meaning is established with the help of *minimal pairs*. Phonemic contrast is the property that allows the discrimination of distinctive speech elements of a language and the accompanying ability of a listener to distinguish meaning. A phonemic feature is called contrastive, if it ensures a phonetic contrast for two otherwise similar phonemes. For example, vowel length may be contrastive in some languages and allophonic in others. For example,

English: 'pay' [pʰei] contrasts with 'bay' [bei] --- Hence |p| and |b| are phonemes.
Hindi: [pəl] 'momenet'; [pʰəl] 'fruit'
Tamil: [əvəl] 'flakes'; [əvə] 'girl'; [məNəm] – 'mind'; [mə□əm] – 'fragrance'

Sub-minimal pairs can be used to establish contrasts. For example:

Hindi: [bəl] 'strength'; [bhəla] 'good'
Tamil: [pa:gu] 'sugar syrup'; [pa:ku] 'betal nut'
Contrasts can be shown in any one position or in all positions. 'Once a phoneme, always a phoneme'. is a general principle.
Tamil: [kaðu] 'scream'; [ði:] 'fire'

Telugu: [gudi] ‘temple’; [mu:gə] ‘dumb’
|ð| and |g| contrast in word-initial and medial positions. Even if they do not contrast in final position, |ð| and |g| are phonemes.

4.4.5 Neutralization

English has many examples of phoneme neutralization. This refers to the environment in which the contrast between phonemes is neutralized. Many of the examples of phoneme neutralization involve vowels but consonants also undergo neutralization.

The English words "hat," "hot" and "hut" have three vowel phonemes. The first word has a low front vowel, the second a low back vowel and the third a mid central one. However, in word final position, this phonemic contrast is neutralized. In the words "sofa," "drama" and "opera," all three words have either a high or low mid central unrounded vowel. This unstressed vowel is very common in English.

The words "hit" and "heat" have the lax high front unrounded and tense high front unrounded vowels. In word final position, this contrast is also neutralized. In the words "baby" and "happy," only the tense vowel occurs. In a few dialects of English such as many of northern England, only the lax vowel occurs word-finally.

The words "pull" and "pool" also exemplify the contrast between lax and tense. In "pull," the high back rounded vowel is lax while in "pool" it is tense. In word-final position, however, only the tense vowel occurs. This is the case in the words "do" and "blue."

The contrast between lax and tense vowels also occurs in "let" and "late." In word-final position, only the tense vowel occurs as in "play" and "they."

The words "hit," "cup" and "ten" have different vowels. However, before the rhotic approximant, this contrast is neutralized. The vowels of "fir," "fur" and "fern" are the same. The notable exception to this rule is

certain dialects of Scotland and Ireland in which the contrast is preserved.

The liquids "l" and "r" contrast in many positions such as in "clue," "crew," "call" and "car." However, this is not the case after the voiceless alveolar plosive. In this case, only the rhotic appears as in "train" and "true."

In the English of many speakers such as those of Canada and the United States, the contrast between the voiced and voiceless alveolar plosives is neutralized between a stressed vowel and an unstressed one. The words "medal" and "metal" and "ladder" and "latter" cannot be distinguished by pronunciation alone. This is another example of phoneme neutralization.

Phoneme neutralization is a common process in the languages of the world. English is one language which provides many examples of this phonological process. Many of the English phonemes which undergo neutralization are vowels and they often undergo neutralization in unstressed word-final position.

4.4.6 Functional load

In linguistics and especially phonology, functional load (also referred to as phonemic load) refers to the importance of certain features in making distinctions in a language. In other words, a high functional load will make it hard to guess the identity of a phoneme in context when the phoneme has not been heard.

The term "functional load" goes back to the days of the Prague School; references to it can be found in the work of Vilem Mathesius in 1929. Its most vocal advocate was André Martinet, a historical linguist who claimed it was a factor in the likelihood of a phonological merger.

The first suggested measurement for functional load was the number of minimal pairs, but this does not take into account word frequency and is difficult to generalize beyond binary phonemic oppositions. Charles

Hockett proposed an information theoretic definition in 1955, which has since been generalized. Now, given a large text corpus, one can compute the functional load of any phonological contrast including distinctive features, supra-segmentals, and distinctions between groups of phonemes. For instance, the functional load of tones in Standard Chinese is as high as that of vowels i.e. the information lost when all tones sound alike is as much as that lost when all vowels sound alike.

Martinet predicted that perceptually similar pairs of phonemes with low functional load would merge. This has not been proved empirically; indeed, all empirical tests have come out against it e.g. /n/ merged with /l/ in Cantonese in word-initial position in the late 20th century despite the fact that of all consonants in binary opposition to /n/, only the /n/-/m/ opposition had a higher functional load than the /n/-/l/ opposition.

English vowels, for example, have a very high functional load. There are innumerable sets of words distinguished just by their vowels, such as pin, pen, pan, pun, pain, pine. Voicing is similar, as can be seen in pat - bad, sue - zoo. Speakers who do not control these differences make it very difficult for others to understand them.

However, although voicing is generally important in English, the voicing difference between the two fricatives written ⟨th⟩, /θ, ð/, has a very low functional load: it is difficult to find meaningful distinctions dependent solely on this difference. One of the few examples is thigh vs. thy although the two can be distinguished from context alone. Similar is the difference of /d□/ (written ⟨j⟩, ⟨ge⟩, etc.) versus /□/ (resulting from /z + j/, or the ⟨j⟩, ⟨ge⟩, etc. in some recent French loanwords), as in virgin vs. version. The difference between the two ⟨ng⟩ sounds, [ŋ, ŋ□], found in singer and finger, is so unimportant that it makes no practical difference if one mixes them up, and some dialects pronounce the sounds the same in both words. The functional load is nearly zero—-not surprising since the phoneme /ŋ/ originated as a coalescence of [ŋ□] when word-final.

An ongoing example would be the merger of the AIR and EAR vowels in New Zealand English. The phonetic similarity between words like here

and hare does not seem to hamper oral communication in any major way as long as the context is provided. Therefore, those vowels have low functional load in New Zealand English despite their high frequency of occurrences in that dialect.

The notion of FL is the function of a phonemic system is to keep the utterances of a language apart. Some contrasts between the phonemes in a system apparently do more of this job than others. For instance, in English there are hundreds of pairs of words that differ only in that one has /p/ where the other has /b/ (pat: bat, nipple: nibble, cap: cab), but only a very few are kept apart by /□/ versus /□/ (for some speakers mesher: measure; for some Asher: azure; for some Aleutian: allusion). Presumably, then, the contrast between /p/ and /b/ does more work even in complete utterances than does that between /□/ and /□/. At least, it is easier to coin a pair of whole utterances such as "Don't take that cap": "Don't take that cab" than it is to find one for /□/ and /□/, simply because there are more minimally different words of the first type.

Another possible approach is to observe actual instances of lost of contrasts. For example, almost all varieties of American English have lost the contrast between /t/ and /d/ after a stressed vowel, so that such pairs as 'matter' and 'madder', 'latter' and 'ladder', 'sweetish' and 'swedish' have become completely homophonous. To a speaker of British English, this particular coalescence is one of the most striking features of the "slurred" speech of Americans. Yet American English is clearly viable without the contrast. Now, if we could meaningfully quantify the functional load carried by this particular contrast before it was lost, we would know, at least, that 'that' much load is 'not' enough to prevent a coalescence, because, in fact, it didn't.

LEARNING ACTIVITY 4.2

What is aspiration in phonology?

Note:

a) Write your answer in the space given below.
b) Check the answer with your academic counsellor.

SUMMARY

In this Unit, we discussed the relationships between the two sub-disciplines of Linguistics that deal with sound, i.e., phonetics and phonology. In this context, we explained that phonetics provids objective ways of describing and analysing the range of sounds human beings use in their languages without reference to any particular language, while phonology concerns with the sound patterns of particular languages. In the Unit, we also looked into language variations with reference to sound clusters, etc., with examples. Later, we touched upon phonemes and allophones. We closed the Unit by discussing the redundant and contrastive features language with reference to speech sounds or phones. In this context, we said features whose presence is entirely predictable, based on the phonetic environment, were redundant phonetic features. We also said that contrasts involving a redundant feature cannot be used to signal a change in meaning: all it could result in was a mispronunciation.

Unit 5

Prosodic Phonology

STRUCTURE

OVERVIEW

We will begin this Unit by discussing phoneme which as we mentioned earlier is a basic unit of phonology, which is a combination of phonemes to form meaningful units such as words or morphemes. Phonemics is the study of phonemes in their various aspects, i.e., their establishment, description, occurrence, arrangement, etc. We will also study the two major types of phoneme, vowels and consonants, as well as minimal pair, i.e., pairs of words which differ in one sound only and have different meanings, in the context of demonstrating the independent, contrastive nature of a phoneme. We will then explain allophones which are the linguistically non-significant variants of each phoneme. Allophones are sounds, while a phoneme is a set of such sounds. In other words, a phoneme may be realized by more than one speech sound and the selection of each variant is usually conditioned by the phonetic environment of the phoneme. Occasionally, allophone selection is not conditioned but may vary from person to person and occasion to occasion.

We will also touch upon the main six phonemic principles such as contrastive distribution, free variation, phonetic similarity, complementary distribution, pattern congruity and principle of economy. We will close the Unit by discussing phonological hierarchy and speech act.

LEARNING OBJECTIVES

After completing this Unit, you should be able to:

- Discuss phonemes and allophones with examples.
- Explain phonetic similarity.
- Discuss phonemic principles and phonological hierarchy.
- Explain speech act.

5.1 PHONEME

Like many other languages, English has a wide variation in pronunciation historically as well as in terms of dialect. In general,

however, the regional dialects of English share a largely similar (but not identical) phonological system.

Phonological analysis of English often concentrates on or uses, as a reference point, one or more of the prestige or standard accents, such as Received Pronunciation for England, General American for the United States, and General Australian for Australia. Nevertheless, many other dialects of English are spoken, which do not necessarily descend from any of these standardized accents. Information about these standardized accents functions only as a limited guide to all of English phonology, which one can later expand upon once one becomes more familiar with some of the many other dialects of English that are spoken.

Phonemics is the study of phonemes in their various aspects, i.e., their establishment, description, occurrence, arrangement, etc. Phonemes fall under two categories:

- segmental or linear phonemes
- supra-segmental or non-linear phonemes

The term phoneme (from the Greek: φώνημα, phōnēma, 'a sound uttered') was reportedly first used by A. Dufriche Desgenettes in 1873, but it referred only to a speech sound. The term phoneme as an abstraction was developed by the Polish Linguist Jan Niecisław Baudouin de Courtenay and his student Mikołaj Kruszewski during 1875 – 1895.

When the importance of the phoneme became widely accepted, in the 1930's and 40's, many attempts were made to develop scientific ways of establishing the phonemes of a language and listing each phoneme's allophones; this was known as phonemics. Nowadays, little importance is given to this type of analysis, and it is considered a minor branch of phonology, except for the practical purpose of devising writing systems for previously unwritten languages.

A phoneme is a basic unit of a language's phonology, which is combined with other phonemes to form meaningful units such as words or

morphemes. The phoneme can be described as “the smallest distinctive or contrastive linguistic unit in the sound system of a language which may bring about a change of meaning". It is important to remember that phonemes are abstract, idealised sounds that are never pronounced and never heard. Actual, concrete speech sounds can be regarded as the realization of phonemes by individual speakers, and are referred to as phones [from Greek ‘phone’, 'voice']. The phone, then, is a concept used in phonetics.

A phoneme is a single ‘unit’ of sound that has meaning in any language. There are 44 phonemes in English (in the standard British model), each one representing a different sound a person can make. Since there are only 26 letters in the alphabet, sometimes letter combinations need to be used to make a phoneme. A letter can also represent different phonemes. For example,

chef = /□ef/
choir = /kwaɪə/
cheese = /t□i:z/

The "ch" letter combination has three different pronunciations, which are represented by three different phonemes: /□/, /k/ and /t□/. Of course, this is confusing when you need to learn new words, but unfortunately, we are stuck with a strange spelling system in English. You really just need to learn the pronunciation of every new word, along with its meaning. Unlike other languages, English spelling is not phonetic.

Phonetic symbols which represent phonemes are enclosed in slashes, //. Strictly speaking, they are then phonemic* symbols, rather than phonetic symbols, but unfortunately this terminological distinction is not always observed. Phones, the true phonetic symbols, occur in square brackets, [ ].

If we want to establish what phonemes there are in a sound system, also called a phonemic system or phoneme inventory, we need to find pairs of words that differ in meaning and in only-one sound. Linguists do this, for example, when they record a previously unknown language. Each of the two contrasting sounds in such a minimal pair is a distinct phoneme.

Other fundamental concepts used in phonemic analysis of this sort are complementary distribution, free variation, distinctive feature and allophone.

5.1.1 Types of Phoneme

There are two major types of phoneme: vowels and consonants.

Vowels

Basically, a vowel is any "open" sound where there is no obstruction or "blocking" caused by the teeth, tongue, lips, palate or other articulators. In the English alphabet, there are 5 vowels: A, E, I, O, U. But there are many more vowel sounds in the English language. For example, the /e/ vowel sound is usually represented by the letter "E". But when you put two "E" letters together, like in "speed" (/spi:d/), you get a long vowel sound: /i:/.

Single vowel

A single vowel sound is any vowel that is not a diphthong, and it can be short or long.

Short vowels

This is the list of the short vowels in standard (RP) English:

/ɪ/ as in ship
/□/ as in book
/e/ as in egg
/æ/ as in cat
/□/ as in cup
/□/ as in hot

Schwa - /ə/

The schwa is a special type of short vowel. It is a very "weak" sound that is never stressed. This means you often find the schwa in words with more than one syllable, e.g., mother: /'mʌðə/, America: /ə'merɪkə/

Long vowels

In the British English phonemic chart, long vowels are easy to recognise, because they have a colon ("**:**") symbol after them. Some long vowels are basically longer versions of short vowels (like /ɪ/ and /i:/).
Long vowels in English:

/i:/ as in sheep
/u:/ as in boot
/ɜ:/ as in learn
/ɔ:/ as in door
/ɑ:/ as in car

Diphthongs

A diphthong is a two vowel sounds, one after the other. There is movement or "glide" between the two parts of the sound. For example, to say the /eɪ/ dipthong, like in the word "cake" (/keɪk/) first say /e/, then say /ɪ/ without stopping. Your mouth will move from the /e/ shape to the /ɪ/ shape. This is the "glide".

Diphthongs of English:

/ɪə/ as in beer
/eɪ/ as in same
/ʊə/ as in tour
/ɔɪ/ as in coin
/əʊ/ as in nose
/eə/ as in hair
/aɪ/ as in fly
/aʊ/ as in house

Consonants

Consonants are sounds where there is obstruction or "blocking" of the airflow caused by your lips (/m/), teeth (/θ/), tongue (/l/), palate (/ŋ/) or even deep down in your larynx (/h/). The two major categories of consonants are voiced and unvoiced consonants.

Voiced Consonants

Voiced consonants make sound using the vibration of your vocal folds in your larynx - the "voice box". You can tell if a consonant is voiced in a couple of ways:

1. Put your finger on your throat when you say it. If you feel vibration, it is voiced.
2. Put your fingers in your ears when you say it. If you can still "hear" the consonant through the vibrations in your neck and head, it is voiced.

Voiced consonants in English:

/b/ as in ball
/d/ as in dog
/□ / as in joke
/g/ as in good
/v/ as in van
/ð/ as in that
/z/ as in zoo
/□/ as in vision
/m/ as in mouth
/n/ as in no
/ŋ/ as in thing
/l/ as in love
/r/ as in right
/w/ as in why
/j/ as in you

Unvoiced consonants

Unvoiced consonants do not use this vibration. Instead they make sound using the movement of air through your teeth, tongue, lips and other articulators. Unvoiced consonants in English:

/p/ as in pea
/t/ as in tea
/□/ as in cheap
/k/ as in coffee
/f/ as in fat
/θ/ as in thin
/s/ as in see
/□/ as in she
/h/ as in he

5.1.2. Minimal pairs

In establishing the *set of phonemes of a language*, it is usual to demonstrate the independent, contrastive nature of a phoneme by citing *pairs of words which differ in one sound only and have different meanings*. Thus, in *BBC English* 'fairy' / feərɪ/ and 'fairly'/ feəlɪ/ make a minimal pair and prove that /r/ and /l/ are separate, contrasting phonemes; the same cannot be done in, for example, Japanese since that language does not have distinct /r/ and /l/ phonemes.

Correspondence between letters and phonemes

Phonemes are considered to be the basis for *alphabetic writing systems*. In such systems the written symbols (graphemes) represent, in principle, the phonemes of the language being written. However, changes in the spoken language are often not accompanied by changes in the established orthography.

The correspondence between spelling and pronunciation in a given language may be highly distorted; this is the case with English, for example. The correspondence between symbols and phonemes in

alphabetic writing systems is not necessarily a one-to-one correspondence. A phoneme might be represented by a combination of two or more letters (digraph, trigraph, etc.), like <sh> in English or <sch> in German (both representing phonemes /ʃ/).

LEARNING ACTIVITY 5.1

Define the term 'phoneme'

Note:

a) Write your answer in the space given below.
b) Check the answer with your academic counsellor.

5.2 ALLOPHONES

The term 'allophone' was coined by Benjamin Lee Whorf in the 1940s. In doing so, he placed a cornerstone in consolidating early phoneme theory. The term was popularised by G. L. Trager and Bernard Bloch in a 1941 paper on English phonology and went on to become part of standard usage within the American structuralist tradition.

Allophones are the linguistically non-significant variants of each phoneme. In other words, a phoneme may be realized by more than one speech sound and the selection of each variant is usually conditioned by the phonetic environment of the phoneme. Occasionally, allophone selection is not conditioned but may vary from person to person and occasion to occasion (i.e., free variation).

A phoneme is a set of allophones or individual non-contrastive speech segments. Allophones are sounds, whilst a phoneme is a set of such sounds. For example, [p□] (as in *pin*) and [p] (as in *spin*) are allophones for the phoneme /p/ in the English language. Although a phoneme's allophones are all alternative pronunciations for a phoneme, the specific allophone selected in a given situation is often predictable. Changing the allophone used by native speakers for a given phoneme in a specific context usually will not change the meaning of a word but the result may sound non-native or unintelligible.

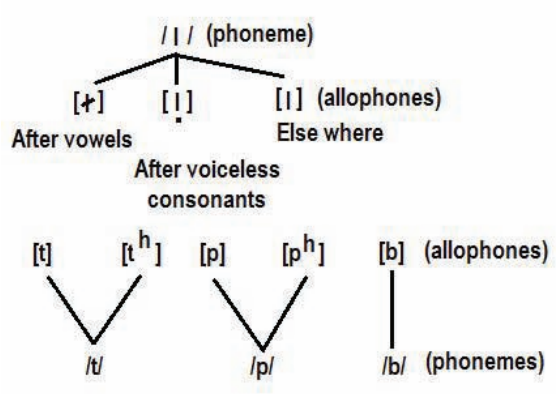
Allophones are usually relatively similar sounds which are in mutually exclusive or complementary distribution (C.D.). The C.D. of two phones means that the two phones can never be found in the same environment (i.e., the same environment in the senses of position in the word and the identity of adjacent phonemes). If two sounds are phonetically similar and they are in C.D. then they can be assumed to be allophones of the same phoneme.

For example, in many languages voiced and voiceless stops with the same place of articulation do not contrast linguistically but are rather two phonetic realizations of a single phoneme (ie. /p/= [p,b], /t/=[t,d], and /k/=[k,□]). In other words, voicing is not contrastive (at least for stops) and the selection of the appropriate allophone is in some contexts fully conditioned by phonetic context (eg. word medially and depending upon the voicing of adjacent consonants), and is in some contexts either partially conditioned or even completely unconditioned (e.g., word initially, where in some dialects of a language the voiceless allophone is preferred, in others the voiced allophone is preferred, and in others the choice of allophone is a matter of individual choice).

Some French speakers choose to use the alveolar trill [r] when in the village and the more prestigious uvular trill [ʀ] when in Paris. Such a choice is made for sociological reasons.

An allophone can therefore be defined as one realization of a phoneme among others. Like phones, allophones are enclosed within square brackets, [ ], because they represent a concrete utterance. The terms phone and allophone, then, pertain to phonetics because they are

related to parole or performance, and the term phoneme pertains to phonology because it is related to langue or competence.



5.2.1 Allophonic variation in English consonants

Allophonic rules express context-dependent variation in the narrow phonetic transcription associated with a phonetic unit

Same word may have different pronunciation

in different styles (e.g., careful vs. casual).

in different phonetic environments

We would like to uncover general principles about how gestures are organized in a particular language (e.g., English), from which these specific rules follow as particular instances.

5.2.2 Allophones of plosive consonants

Plosive are 'difficult' consonants, they take more effort to articulate than other classes of consonants. Because in the pronunciation of a plosive, you will remember, there is a complete obstruction. Their allophones can be classified in the following categories.

Aspirated and unaspirated Voiceless Plosives /p, t, k/

Aspiration is an interval of air heard between the end of the plosive and the following vowel. It is represented by the symbol [ʰ]. Only voiceless plosives may be aspirated. Aspiration may be strong or weak, depending on the context.

- Strong aspiration: Voiceless plosives are strongly aspirated in initial stressed position. Example: ***p**en, po**t**ato*: [pʰen], /pəˈteɪtəʊ/ or /pəˈtʰeitəʊ/.

EXCEPTIONS:

(a) when /p, t, k/ are preceded by /s/. Example: *pain* vs. *Spain*; [pʰeɪn], [speɪn].

(b) when they are followed by /l, r, w, j/. In this case, /l, r, w, j/ are devoiced. Examples: *play, cry, tune.*

- Weak aspiration: Voiceless plosives are weakly aspirated in unstressed syllables and in final position. Examples *po**t**, **t**omorrow*: /ˈpɒt/, /təˈmɒrəʊ/.

Devoicing of voiced plosives

Voiced plosives are /b, d, g/. When these voiced consonants are in final position AND followed by silence (that is, at the end on an utterance) they normally lose their voicing, that is they become devoiced.

For instance, the phrase 'a black ba**g**' sounds something like 'a back ba**k**'; that is, the voiced velar plosive /g/ sounds like a *voiceless* velar /k/. The explanation is that /g/ has lost its voicing, has been DEVOICED. The symbol used to indicate devoicing is [◌̥]

Examples: 'my bag',	'some food',	'a lab'
[maɪ ˈbæg̊]	[səm ˈfu:d̥]	[ə ˈlæb̥]

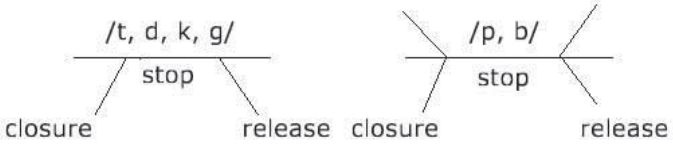
Non-audible release of plosives

You will remember that a plosive consonant (/p, t, k, b, d, g/) is articulated in three stages:

- closure stage: the articulators are approaching
- stop stage: the articulators from a complete obstruction

- release stage: the air is let out abruptly

It can be represented in an articulator diagram:



The third stage, the release, may be realized in different ways, depending on the consonant that follows:

- **Audible release of plosives**: This happens when the plosive is fully articulated and the sound is heard without any problem. The three stages of the articulation of the plosive are realized (closure, stop, and release).

- **Unreleased plosives**: When a plosive (/p, t, k, b, d, g/) is followed by another plosive or an affricate ('ch' sound **/ʧ/** and 'j' sound **/ʤ/)** the first plosive is unreleased. This means that you don't hear the release of the first plosive.

  Examples: "looked" [lʊkˀ̚t]
  "that chair" [ðætˀ̚ʧeə]

- **Nasal** release of plosives**:** It takes a place when the plosive is followed by a homorganic nasal consonant. Homorganic means that they share the same place of articulation.

Plosive	Nasal	Place	Example	Transcription
/p, b/ +	/m/	[bilabial]	"cheapmeat"	[ˈʧiːpˀ̚ˌmiːt]
/t, d/ +	/n/	[alveolar]	"written"	[ˈrɪtˀ̚n]
/k, g/ +	/ŋ/	[velar]	"organ"	[ˈɔːgˀ̚ŋ]

- **Lateral** release of plosives: The release of the plosive is produced laterally when /t/ or /d/ are followed by /l/.

Plosive	+	Lateral	Place	Example	Transcription
/t, d/	+	/l/	[alveolar]	"hardly"	[ˈhɑːdˀ̚li]

Other variants in BrE and AmE: **glottal stop** and **tap**

- **Glottal** stop: The glottal stop is represented by the symbol [ʔ]. This sound is a kind of 'catch in the throat'; it is a plosive consonant articulated in glottis (the vocal folds are firmly pressed together. It is used in different ways in British English (BrE) and American English (AmE)

British English

(a) [ʔ] replaces /t/ in word final position: "a bit more" [ə ˈbɪʔ ˈmɔ:]
This is very informal, but common in places of England like London. Even Prince Charles does it!

(b) [ʔ] reinforces /t/ in word final position: "bit" [bɪʔt]

American English

The glottal stop [ʔ] replaces /t/ when it is followed by a syllabic /n/. This is very common and most Americans pronounce a glottal stop in the following words:

"button" [ˈbʌʔn] "kitten" [ˈkɪʔn] " sentence" [ˈsenʔns]

- **Tap**: In American English, the alveolar plosives /t, d/ are replaced by an alveolar tap or flap /ɾ/ when they are between vowels, the first vowel being normally stressed. Examples:

"lady"	[ˈleɪɾi]
"writer"	[ˈraɪɾər]
"rider"	[ˈraɪɾər]
"laid an egg "	[ˈleɪɾəneg]
"university"	[ə ˌju:nɪ ˈvɜ:sɪɾi]

5.2.3 Devoicing of voiced fricatives

The voiced fricatives represent the 'eth' sound /ð/. Just like voiced plosives, when these voiced fricatives are in final position and followed by silence (that is, at the end on an utterance) they normally lose their voicing, that is they become devoiced. The symbol for devoicing is [˳]. Consider the examples given below:

"your eyes" [jɔ:r'aɪz̥] "make me live" ['meɪkmi 'li:v̥]
"and breathe" [ənd 'bri:ð̥]

5.2.4 Devoicing of the voiced affricate /d͡ʒ/

Like the voiced plosives and fricatives, when the voiced affricate /d͡ʒ/ is in final position and followed by silence (that is, at the end on an utterance) it normally loses its voicing, that is, it becomes devoiced. This is represented with the symbol [d͡ʒ̊]. Examples:

"large" [lɑ:d͡ʒ̊] "page" [pʰeɪd͡ʒ̊]

5.2.5 Allophones of nasal consonants

The alveolar nasal /n/ is affected by the consonant that follows it; it tends to take the place of articulation of the consonant that follows it. We have the following three allophones for this consonant:

/n/ followed by a **bilabial** consonant: it becomes bilabial, e.g.,
"in part" [ɪm 'pʰɑ·t]

/n/ followed by a **velar** consonant: it becomes velar, e.g.,
"in coma" [ɪŋ 'kʰəumə]

/n/ followed by a **dental** consonant: it becomes dental, e.g.,
"in theory" [iṇ 'θɪəri]

Syllabic n

Syllabic consonants occur only in unstressed syllables. In English, when the unstressed vowel schwa / ə / is followed by /n/ in the same syllable, the vowel schwa is not heard, and the nasal consonant becomes syllabic, the symbol for this allophone of /n/ is [n]. Consider the example below:

Examples: "mission" ['mɪʃn̩], "heaven" ['hevn̩], "prison" ['pr̩ɪzn̩]

LEARNING ACTIVITY 5.2

What are allophones?

Note:

a) Write your answer in the space given below.
b) Check the answer with your academic counsellor.

5.3 PHONETIC SIMILARITY

Allophones must be phonetically similar to each other. In analysis, this means you can assume that highly dissimilar sounds are separate phonemes (even if they are in complementary distribution). For this reason no attempt is made to find minimal pairs which contrast vowels with consonants. Exactly what can be considered phonetically similar may vary somewhat from language family to language family and so the notion of phonetic similarity can seem to be quite unclear at times.

Sounds can be phonetically similar from both articulatory and auditory points of view and for this reason one often finds a pair of sounds that vary greatly in their place of articulation but are sufficiently similar auditorily to be considered phonetically similar (eg. [h] and [ç] are voiceless fricatives which are distant in terms of glottal and palatal places of articulation, but which nevertheless are sufficiently similar auditorily to be allophones of a single phoneme in some languages such as Japanese).

In English, /h/ and /ŋ/ are in complementary distribution. The sound /h/ only ever occurs at the beginning of a syllable (head, heart, enhance, perhaps) whilst /ŋ/ only ever occurs at the end of a syllable (sing, singer, finger). They are, however, so dissimilar that no one regards them as allophones of the one phoneme. They vary in place and manner of articulation, as well as voicing. Further the places of articulation (velar vs glottal) are quite remote from each other and /h/ is oral whilst /ŋ/ is nasal.

It states that the allophones of a phoneme have phonetic similarity. It follows that if two sounds are phonetically entirely dissimilar, they can never be allophones of the same phoneme in any language. But the reverse of it is not true. If two sounds have phonetic similarity they may or may not be allophones of the same phoneme.

Consider the sounds [p] and [b]. These two sounds are phonetically similar because both are plosives and both are bilabial voiceless and voiced respectively. The only difference between these two sounds is that [p] is voiceless and [b] is voiced. Therefore, these two sounds may or may not be allophones of the same phoneme in a language but they have phonetic similarity.

5.4 PHONEMIC PRINCIPLES

A phonetic transcription indicates the sounds of an utterance in detail. If a non-English speaker who doesn't know any English wants to utter a sentence, he would like to record the sentence as faithfully as he could by indicating as many details as possible. For example, he wouldn't know that [l] and [s] (e.g., kill/kiss) belong to the same phoneme in English. Once having recorded a number of utterances, he can make a list of the speech sounds of English. After listing out, he would make a phonemic analysis which would involve assigning the phones to phoneme using certain principles.

The structuralists formulated some clearly defined criteria for this purpose – for 'discovering' the phonemes of a language. The main six principles are:

- Contrastive distribution
- Free variation
- Phonetic similarity
- Complementary distribution
- Pattern congruity
- Principle of Economy

The above six principles are formulated as procedures for deciding in favour of:

1. belong to different phonemes (or)
2. are allophones of the same phoneme.

Post-Bloomfiledians operate with the notions of contrastive and non-contrastive, which originally stem from the concept of distribution but are ultimately coloured by semantic implications.

5.4.1 Contrastive distribution

Sounds which occur in an identical context are said to be in *contrastive distribution*, or to be contrastive with respect to each other, or to contrast with each other. Such sounds are said to be *allophones* of different phonemes. For example, [p^h] and [m], which occur in an identical context in the English words *pit* and *mitt*, are allophones of two different phonemes, /p/ and /m/.

- Two sounds are in contrastive distribution if they aren't in complementary distribution.
- The contexts in which two such sounds can occur are not mutually exclusive.
- A minimal pair is a pair of two words that differ in just one sound, i.e. you can turn one word into the other by replacing just one sound.
- If two sounds distinguish a minimal pair, they must be in contrastive distribution.

- Sounds that are in contrastive distribution can distinguish words.
- Sounds that are in complementary distribution with each other can never be the difference between two words, since they could never occur in the same place in a word.

5.4.2 Free variation

Not all sounds of a language are necessarily distinctive sounds. Compare the English and American pronunciations of "dance". Although there are different sounds in the pair, the meaning does not change. Thus, [‘a’ as in barn] and [‘a’ as in pat] are not phonemes in this case. We call this phenomenon free variation**.** The two sounds can be referred to as allophones. These sounds are merely variations in pronunciation of the same phoneme and do not change the meaning of the word. Free variation can be found in various dialects of the same language. In this case, the different pronunciations of words throughout a country do not change the meaning of those words. Examples include the following:

- The phoneme /z/ in zeal can be realised as a voiceless, or devoiced, allophone when whispered, or as a voiced allophone when pronounced ‘normally’.
- The phoneme /t/ in butter can be realised as a glottal stop [ʔ], by speakers of some non-standard British accents, but the same speakers may realise the phoneme as [t] when they aim at a more standard pronunciation.
- Vocalic phonemes in free variation include /i:/ and /e/as the initial sound in the words economics and evolution, and /i:/ and /ai/ as the initial sound in either.

5.4.3 Complementary distribution

If two (phonetically similar) sounds are in complementary distribution, they are allophones of the same phoneme. For example,

- Voiceless aspirated stops occur only at the beginning of a syllable.
- Voiceless unaspirated stops occur only elsewhere.

This is called complementary distribution. Two classes of sounds are in complementary distribution if there is a context such that one class only occurs there and the other class can't occur there.

Consider the following words with respect to the plosive sounds /p,t, and k/. Put your hand in front of your mouth and pronounce the words. Do you feel a difference?

***p**ill s**p**ill **t**ill s**t**ill **k**ill s**k**ill*

Did you realize, that there is a burst or puff of air after the /p/ in *pill, till,* and *kill*, that is absent in *spill, still,* and *skill*? The feature that makes the difference between the plosive sounds in pill, till, kill and spill, still, skill is called aspiration (the period between the release of the closure of a consonant and the start of the vocal cord activity for the vowel that comes after it. This period is usually felt as a puff of air.)

Aspirated and unaspirated allophones are one example of complementary distribution: where the one (e.g. the aspirated p) occurs, the other cannot occur. Aspirated [aspirated p], as you can see in this example, occurs only at the beginning of words: [aspirated p] and [p as in pit] are only allophones of the same phoneme /p/.

The word "complementary" actually refers to the fact that the contexts in which the allophones of a phoneme appear can never be the same and they cover the whole range of possible environments in which the sound can occur.

LEARNING ACTIVITY 5.3

Write a short note on the principles of phonemes.

Note:

a) Write your answer in the space given below.
b) Check the answer with your academic counsellor.

5.4.4 Pattern congruity and economy

The principle of pattern congruity can be states as there is usually a pattern in the way sounds are organized in a language. It provides another ground for arguing against phonemic theory. Consider for example, the following words from Blanktu:

[see]	'go'	[se:s]	'run'
[buk]	'little'	[bu:k]	'softly'
[mo:l]	'cat'	[mol]	'black'
[mat]	'boy	[ma:t]	'table'

Now these words show that [e] and [e:], [a] and [a:], [o] and [o:] and [u] and [u:] belong to different phonemes. Though, these sounds are separate phonemes, they are minimal pairs. They are based on pattern congruity because there is a pattern of short/long vowel contrast in the language.

Speakers especially use economy in their articulation, which tends to result in phonetic reduction of speech forms. We have in vowel reduction, cluster reduction, lenition, and elision. After some time a

change may become widely accepted (it becomes a regular sound change) and may end up treated as a standard. For instance: going to [□o□.ɪnt□] → gonna [□□nə], with examples of both vowel reduction [□] → [ə] and elision [nt] → [n], [o□.ɪ] → [□].

5.5 PHONOLOGICAL HIERARCHY

Consider the hierarchy of prosodic phonology listed below:

1. Utterance
2. Phonological phrase (P-phrase), also known as: Major phrase/Intermediate phrase
3. Accentual phrase, also known as: Minor phrase
4. Clitic group
5. Phonological word (P-word, ω), sometimes also called the prosodic word
6. Foot (F, φ)
7. Syllable (σ)
8. Mora (μ)
9. Segment (phoneme)
10. Feature

5.5.1 Utterance

In spoken language analysis an utterance is the smallest unit of speech. It is a continuous piece of speech beginning and ending with a clear pause. In the case of oral languages, it is generally but not always bounded by silence. Utterances do not exist in written language, only their representations do. It can be represented and delineated in written language in many ways as given below:

- An utterance is a natural unit of speech bounded by breaths or pauses.
- An utterance is a complete unit of talk, bounded by the speaker's silence.

According to philosopher, Mikhail Bakhtin, there are four accepted properties that utterances should have, and these are.

1. **Boundaries:** All utterances must be bounded by a "change of speech subject". This usually means, as previously mentioned, that they are bounded by silence.
2. **Responsivity or dialogicity:** The utterance must be either responding/following a previous utterance or generating dialogue.
3. **Finalization:** An utterance must have a clear ending, and only occurs if the speaker has said everything he or she wishes to say.
4. **Generic form:** The choice of the speech genre is determined based on the specific circumstances and sphere in which the dialogue occurs.

Utterance does not have a precise linguistic definition. Phonetically an utterance is a unit of speech bounded by silence. In dialogue, each turn by a speaker may be considered an utterance.

Linguists sometimes use utterance to simply refer to a unit of speech under study. The corresponding unit in written language is text. Unlike a sentence (which is supposed to be grammatically correct because its meaning is conveyed through words and syntactical structure), an utterance may lack grammatical correctness: part of its meaning may be conveyed through non-verbal elements –prosody, body language, gestures, facial expression. Besides, the meaning of an utterance depends on situational context. For example,

(1) A. We are invited to the party.
B. Lovely! (pleasure)
(2) C. They made it clear we are not welcome.
D. Lovely. (displeasure/sarcasm)

Text is a coherent sequence of utterances which presents a speaker's ideas on a particular topic. In connected speech, the features of the suprasegmental level – *speech melody, stress, rhythm, tempo, pauses, timbre* – work together. They are superimposed on

sequences of sounds (segments), which is why these features are called suprasegmental.

5.5.2 Intonational phrase (I-phrase)

An intonational phrase, which is also known as full intonational phrase**,** is a phonological unit with the following properties:

(i) it is the largest phonological unit into which an utterance can be divided,
(ii) it has a specifiable intonational structure including a single most prominent point (the nucleus), and it matches up in some way with syntactic and discourse structure.

In phonetics, an *intonation phrase* is a stretch (or chunk) of spoken material that has its own intonation pattern (or *tune*). It is also called an *intonation group, phonological phrase, tone unit*, or *tone group*. The intonation phrase (*IP*) is the basic unit of intonation. In phonetic analysis, the vertical bar symbol (|) is used to represent the boundary between two intonation phrases.

Intonational phrasing in English can have a meaning-distinguishing function. Consider utterances (a) and (b):

(a) He washed and fed the dog.
(b) He washed | and fed the dog.

If the intonation phrase *'He washed and fed the dog'* is produced as one intonation phrase, its meaning is that a person both washed and fed a dog. Conversely, if the same utterance is produced as a sequence of two intonation phrases with an *intonation boundary* after *washed* (indicated by the symbol |), the meaning of the utterance changes into 'someone who washed himself and fed a dog.

- Pitch movements associated to the segmental stream (speaker depending)

- The acoustic manifestation of intonation is fundamental frequency which is perceived by listener as pitch.

Articulatory phonetics (Production point of view)	⟶	Acoustic phonetics (Transmission point of view)	⟶	Auditory phonetics (Reception point of view)

Intonation can also be defined as the use of the pitch in order to provide linguistic information. There are different types of languages:

- **Tone languages:** pitch is lexical resource, changes in intonation produce differences in meaning at word level (Chinese).
- **Pitch-accent languages:** syllables of a word are pronounced with a different pitch or accent (Japanese).
- **Intonation languages:** changes in intonation have a change in meaning at sentence level (English, Spanish)

Grammatical function of intonation

The intonation is used to signal the syntactic or grammatical structure. The listener is better able to recognise the grammar and syntactic structure by using the information contained in the intonation (placement of boundaries between phrases, clauses or sentences, the difference between questions and statements and the use of grammatical subordination).

- *She dressed and fed the baby* (the baby was dressed and fed)
- *She dressed | and fed the baby* (she dressed herself and then fed the baby)

Accentual information

Main function of intonation is distribution of accents among stressed syllables in order to emphasize what need to be perceived as the most significant word.

|Paul is `very |tall
Paul is |very |tall ((Paul and not another one)

Discourse function

The study of the intonation related to the context. It means to convey what is new and what in old or known. What is old is unaccented.
Usually the main accent is in the last lexical word in the sentence:
My name is **Bond**
When the speaker said something after that, what he thinks is old or known is unaccented and the new is accented:
My name is **Bond**. **James** Bond
If somebody says you *|Thank you*, and you reply Thank *|you*, you must to change the pattern of intonation (in the first one *Thank* is accented, in the second one *you* is accented).

Attitudinal function

Intonation is used to convey attitude, emotions or feelings. This adds a special kind of 'meaning' to spoken language.
Sociolinguistic function
Intonation gives the clue a) where somebody comes from; b) his social level; c) sex, age, personality; d) individual features (idiosyncrasy).

Notation system of intonation

The notation system of intonation involves:

- Interlinear notation: A succession of dots (one for each syllable) between two parallel lines represents the tune (melodic curve)
- Tonetic stress marks: Diacritics signs placed before the syllable.

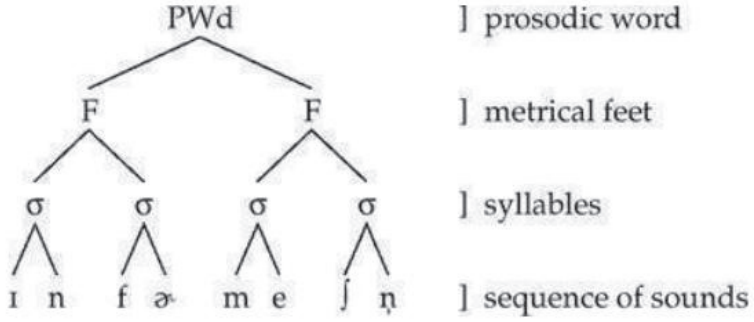
American linguistic has other means as the number system.

The division of the speech into the intonational units (word groups, tone units or intonational phrases) is called tonality. Usually they coincide with syntactic units.

I didn't know that Peter left the country = 1 unit
I didn't know | *that Peter left the country* = 2 units
I didn't know | *that Peter* | *left the country* = 3 units

5.5.3 Structure above the segment level

The sound structure of a word (a unit which can be defined on several linguistic levels, including morphologically and phonologically) includes not only the sequence of sounds (made up in turn of bundles of distinctive features, as discussed in earlier section), but also entails the hierarchical grouping of these sounds. Let's take the English word information as an example which we can use as a reference point:



This word consists of a sequence of sounds ɪ-n-f-ə-m-e-ʃ-n̩.These sounds are grouped into sequences of consonants and vowels, known as syllables (σ).

Most speakers of English would agree that this form consists of four syllables broken up as ɪ-n-f-ə-m-e-ʃ-n̩. Consonants and vowels are grouped into syllables in non-arbitrary ways, with a vowel forming the core or **nucleus** (such as [me], and consonant or consonants preceding (**onset**, such as [**m**e]) or following (**coda**, such as [**in**]). In the final syllable [ʃn̩], the nucleus is n̩, which is a syllabic nasal, serving the role of a vowel. These syllables are in turn organized into stress groupings (ɪn-fə) (mé-ʃn̩).

The third syllable is the most prominent (primary stress, indicated with a ’) and the first also has some prominence (secondary stress, indicated with a ‘). These patterns of prominence can be accounted for by grouping the syllables together into units known as metrical feet (F). Finally the feet are grouped together into the Prosodic Word (PWd). The Prosodic Word often has the same shape as what we would define morphologically as a word, but not necessarily. There are, for example, grammatical words, which we take to be words morphologically, but which can't stand on their own phonologically, such as a, or the. The syllables, feet, and prosodic words are together the prosodic structure of a word. Words in turn can be grouped into higher levels of prosodic structure as well.

5.5.4 Syllable structure

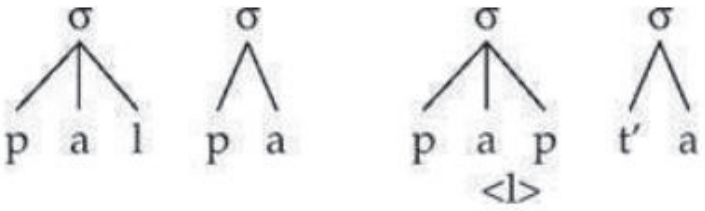
Many processes result in the insertion or deletion of a segment. This is often due to the influence of syllable structure. Sometimes a cluster of consonants occurs and sometimes one of the members of the cluster is deleted. This is an example of what we call an alternation where the same morpheme varies in its realization, conditioned by some aspect of the sound system (in this case the allowable syllable structure). The result is an alternation between the presence of a consonant and zero in morphologically related forms. ([t’] represents a voiceless alveolar stop with a stronger articulation than a plain voiceless stop.)

Consonant □ Zero alternations in –orean clusters

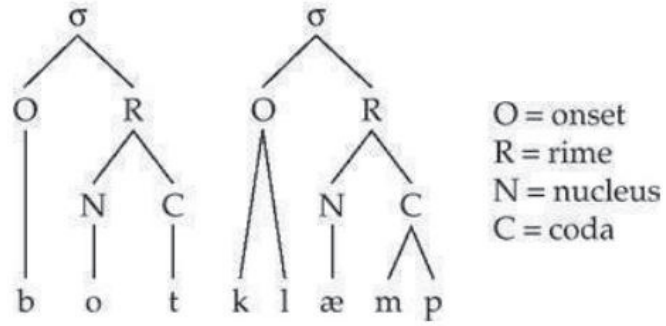
root	*+ vowel initial suffix* **-a** nominalizing suffix	*+ consonant initial suffix* **-t’a** infinitive
/palp/ “tread on”	palp + a “treading on”	pap + t’a “to tread on”
/salm/ “boil”	salm + a “boiling”	sam + t’a “to boil”

The basic syllable structure in Korean is (C)V(C). The underlying clusters (/lp/ and /lm/ are allowed to surface before a vowel initial suffix, since the second member of the cluster can be syllabified as the onset of the second syllable, producing palpa and salma. But when the root occurs before a consonant initial suffix (verbs cannot occur without some kind of suffix), the first consonant of the cluster, in the cases illustrated here /l/, is deleted, producing papt'a and samt'a. (In other cases, it is the second consonant which is deleted.) The syllabification of

forms with vowel initial and consonant initial suffixes respectively is shown below for /palp/ (where < > indicates a segment not incorporated into the syllabic structure):



In addition, the syllable is often argued to be divided into subparts. Evidence for this comes from the fact that co-occurrence restrictions hold on the consonants preceding the core of a syllable, as well as following, but not generally across the subparts of the syllable. One general approach to the internal organization of the syllable is as shown below, where the substructure of boat and clamp are illustrated:



5.5.5 Features and segmenthood

There is also good evidence that segments are made up of smaller units and that a more insightful discussion of sound patterning is possible, if we make reference to these smaller units. We have an intuition that [p, b] are more similar than [l, b]. This is because the former shares more sound properties than the latter. These sound properties are called distinctive features. The notion of distinctive features grows out of the work of Trubetzkoy, Jakobson, and others (see Anderson 1985 for an excellent survey of the history of phonology). While numerous specific systems have been proposed, most current systems have evolved from that proposed by Chomsky and Halle (1968). Most approaches to phonology assume some kind of feature system and take the features to

be the smallest building blocks of phonology. Segments thus consist of bundles of features, or feature matrices, as exemplified below:

feature matrices

b	ɪ	l
+consonantal	−consonantal	+consonantal
−continuant	+high	−continuant
−sonorant	−back	+sonorant
−nasal	−tense	−nasal
labial		coronal
		lateral

There are many interesting and important issues about the status of features. First there is much debate about an adequate specific set of features which can account for all the occurring sounds in the languages of the world. Additionally there are issues such as the number of values that characterize particular features. There are some features which clearly define two classes, for example [±sonorant], where [+sonorant] defines the class of so no rants and [-sonorant] defines the class of obstruents. Such features are appropriately characterized as two-valued or binary.

In the case of other features, their presence or absence seems sufficient, that is, they are single-valued or privative; for example this is argued to be the case for [nasal]. Finally other parameters, such as vowel height or sonority seem to have multiple values. Such dimensions are often treated with two or more binary features (e.g. [±high] and [±low] to capture three vowel heights,

$$[\text{i}] = \begin{bmatrix} +\text{high} \\ -\text{low} \end{bmatrix}, \quad [\text{e}] = \begin{bmatrix} -\text{high} \\ -\text{low} \end{bmatrix}, \quad [\text{æ}] = \begin{bmatrix} -\text{high} \\ +\text{low} \end{bmatrix}),$$

but some researchers argue that multivalued features should be incorporated directly into the system.

LEARNING ACTIVITY 5.4

What is an utterance?

Note:

a) Write your answer in the space given below.
b) Check the answer with your academic counsellor.

5.6 SPEECH ACT

A theory of language based on J. L. Austin's How to Do Things with Words (second edition, 1975), the major premise of which is that language is as much, if not more, a mode of action as it is a means of conveying information. As John Searle puts it, "All linguistic communication involves linguistic acts. The unit of linguistic communication is not, as has generally been supposed, the symbol, word, or sentence, or even the token of the symbol, word, or sentence, but rather the production or issuance of the symbol or word or sentence in the performance of a speech act." Meaning, then, should be regarded as a species within the genus intending-to-communicate, since language itself is highly complex, rule-governed intentional behavior.

A theory of language is part of a theory of action. The basic emphasis of speech act theory is on what an utterer (U) means by his utterance (x) rather than what x means in a language (L). As H.P. Grice notes, "meaning is a kind of intending," and the hearer's or reader's recognition that the speaker or writer means something by x is part of

the meaning of x. In contrast to the assumptions of structuralism (a theory that privileges langue, the system, over parole, the speech act), speech act theory holds that the investigation of structure always presupposes something about meanings, language use, and extralinguistic functions.

In *How to Do Things with Words*, Austin commences by enunciating a reasonably clear-cut distinction between constative and performative utterances. According to him, an utterance is constative if it describes or reports some state of affairs such that one could say its correspondence with the facts is either true or false. Performatives, on the other hand, "do not 'describe' or 'report' or constate anything at all, are not 'true' or 'false.' . . . The uttering of the sentence is, or is part of the doing of an action, which again would not normally be described as saying something.

"Marrying, betting, bequeathing, umpiring, passing sentence, christening, knighting, blessing, firing, baptizing, bidding, and so forth involve performatives. The attitude of the person performing the linguistic act -- his thoughts, feelings, or intentions -- is of paramount importance. Whereas the constative utterance is true or false, the performative utterance is felicitous or infelicitous, sincere or insincere, authentic or inauthentic, well invoked or misinvoked. An "I do" at a marriage ceremony is insincere and misinvoked if the utterer is already married and has no intention of abiding by the conditions of the contract.

Austin divides the linguistic act into three components. First, there is the locutionary act, "the act of 'saying' something." Second, there is the illocutionary act, "the performance of an act in saying something as opposed to the performance of an act of saying something." Third, there is the perlocutionary act, for "saying something will often, or even normally, produce certain consequential effects upon the feelings, thoughts, or actions of the audience, of the speaker, or of other persons."

In other words, a locutionary act has meaning; it produces an understandable utterance. An illocutionary act has force; it is informed with a certain tone, attitude, feeling, motive, or intention. A perlocutionary act has consequence; it has an effect upon the addressee. In performing a locutionary act we shall also be performing such an act as:

- asking or answering a question;
- giving some information or an assurance or a warning;
- announcing a verdict or an intention;
- pronouncing sentence;
- making an appointment or an appeal or a criticism;
- making an identification or giving a description; and the numerous like.

A locutionary act has to do with the simple act of a speaker saying something, i.e. the act of producing a meaningful linguistic expression. It consists of three sub-acts. They are

(i) a phonic act of producing an utterance-inscription, (ii) a phatic act of composing a particular linguistic expression in a particular language, and (iii) a rhetic act of contextualizing the utterance-inscription.

The first of these three sub-acts is concerned with the physical act of producing a certain sequence of vocal sounds (in the case of a spoken language), which is also called a phonetic act, or a set of written symbols (in the case of a written language). The second refers to the act of constructing a well-formed string of sounds and/or symbols, be it a word, phrase, sentence, or discourse, in a particular language. These two sub-acts are grouped by the American philosopher John Searle as performing an utterance act. The third sub-act is responsible for tasks such as assigning reference, resolving deixis, and disambiguating the utterance-inscription. This is referred to as a propositional act by Searle.

Steven Davis notes that an illocutionary act can be made explicit by the use of a performative verb formula. For example, if a speaker says, 'I'll be there' and it is unclear whether it is a promise that has been made

the speaker can make it explicit by saying 'I promise that I'll be there'" ("Anti-Individualism and Speech-Act Theory" in Foundations of Speech Act Theory, 1994).

In addition, as Daniel R. Boisvert observes, we can use sentences to "warn, congratulate, complain, predict, command, apologize, inquire, explain, describe, request, bet, marry, and adjourn, to list just a few specific kinds of illocutionary act" ("Expressivism, Nondeclarative, and Success-Conditional Semantics" in *Having It Both Ways*, 2014).

The distinction between the illocutionary act and the perlocutionary act is important. Ruth M. Kempson says that the perlocutionary act is the consequent effect on the hearer which the speaker intends should follow from his utterance.

SUMMARY

We began this Unit by discussing phoneme, i.e., the basic unit of phonology, which we said was a combination of phonemes to form meaningful units such as words or morphemes. In this context, we introduced phonemics as the study of phonemes in their various aspects, i.e., their establishment, description, occurrence, arrangement, etc. We also studied vowels and consonants as the two major types of phoneme. Later we took up for discussion minimal pair, i.e., pairs of words which differ in one sound only and have different meanings. We also explained allophones as sounds, a set of which making a phoneme. We touched upon such phonemic principles as contrastive distribution, free variation, phonetic similarity, complementary distribution, pattern congruity and principle of economy. We closed the Unit by discussing phonological hierarchy and speech act.

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