
UNIT-1 INTRODUCTION TO PHONETICS & PHONOLOGY, IPA CHART

Structure

- 1.0 Objectives
- 1.1 Introduction
- 1.2 What is Phonetics?
- 1.3 Importance of Phonetics
- 1.4 Branches of Phonetics
 - 1.4.1 Articulatory phonetics
 - 1.4.2. The manner of articulation
 - 1.4.3 Acoustic phonetics
 - 1.4.4 Auditory phonetics
- 1.5 Necessary Phonetics to be acquired
- 1.6 Let's Sum-up
- 1.7 Key Terms
- 1.8 Check your Progress
- 1.9 References & Further Readings
- 1.10 Key to evaluate your progress

1.0 OBJECTIVES

An understanding of phonetics

- To develop speaking skills
- To guide students in identifying each sound
- To create a desire to look up dictionary with pronunciation
- To educate students about sound system

1.1 INTRODUCTION

Phonetics deals with the study of human speech sounds and their properties- articulatory, auditory and acoustic-in a spoken language. Phonology, on the other hand, is concerned with the selection and organization of sounds in a particular language. The study of both phonetics and phonology helps one to understand the sound system and the way sounds are organized. Each of the sounds can be assigned a symbol and all the symbols (for sounds) are contained in the International Phonetic Alphabet (IPA).

Phonetics (derived from the Greek word phone meaning sound/voice) is a key part of linguistics and it has three distinct types: Articulatory Phonetics, Acoustic Phonetics

and Auditory Phonetics. The real sound delivered, for example, a basic vowel or consonant sound is called the phone. Closely linked with Phonetics is another part of Linguistics known as Phonology which manages the manner in which speech sounds act specifically dialects or in dialects for the most part. This focuses on the manner languages use contrasts between sounds so as to pass on contrasts of importance between words.

All hypotheses of phonology hold that spoken language can be separated into a string of sound units (phonemes). A phoneme is the smallest unit of the sound of a language. It recognizes a single word from another in a given language. This implies that changing a phoneme in a word creates another word that has an alternate meaning. In the pair of words 'cat' and 'bat', the distinctive sounds /k/ and /b/ are the two phonemes. The phoneme is a theoretical term (a speech sound as it exists in the mind of the speaker) and it is explicit to a specific language.

A phoneme may have a few allophones related sounds that are unmistakable however don't change the importance of a word when they are exchanged. The sounds compared to the letter "t" in the English words 'tea' and 'trip' are not the same. The situation of the tongue is somewhat unique, which causes a distinction in sound perceptible by an instrument, for example, a speech spectrograph. In this way the [t] in 'tea' and the [t] in 'trip' are allophones of the phoneme /t/.

Phonology is the connection between Phonetics and the rest of Linguistics. Just by contemplating both the phonetics and the phonology of English is it conceivable to obtain a full comprehension of the utilization of sounds in English speech. It is known as the Pronunciation which may have distinctive 'highlights'. Articulation can differ with societies, locales and speakers, yet there are two significant standard assortments in English elocution: British English and American English. Inside British English and American English, there is likewise an assortment of accents. Some of them have gotten more consideration than others from phoneticians and phonologists. These are Received Pronunciation (RP) and General American (GA). RP is a type of pronunciation to express the English language, sometimes characterized as the "educated spoken English of south eastern England". RP is near BBC English and is used in the pronunciation scheme of most of the dictionaries.

1.2. WHAT IS PHONETICS?

Phonetics deals with human speech sounds. It is derived from the Greek word phone which means voice or sound and is concerned with the production, transmission, and reception of speech sounds produced by humans. In other words, phonetics deals with only the sounds used as a means of communication. It does not, in fact, study all the human sounds primarily because human organs are capable of producing an infinite number of sounds.

While phonetics deals with the study of speech sound in general, phonology is concerned with the selection and organization of sounds or phonemes in a particular language. Phonemes are, in effect, any of the perceptually distinct units of sound in a specified language that distinguishes one word from another, for example, /p/, /b/, /d/, /t/ in the English words ‘pen’, ‘ban’, ‘den’, and ‘ten’ respectively.

In other words, a phoneme is a sound or a group of different sounds perceived to have the same function by speakers of the language or dialect in question. It is the smallest unit of speech distinguishing one word or a word element from another, e.g., the element /p/ in ‘tap’ separates the word from ‘tab’, ‘tag’, and ‘tan’. The English phoneme /k/, for example, occurs in words such as ‘can’, ‘khaki’, ‘quality’, ‘pickle’, ‘soccer’, ‘trekking’, ‘stomach’, etc. While speaking, we combine phonemes to form words. For example, the words ‘hen’ and ‘while’ have three phonemes each: /h/, /e/ & /n/ and /w/, /aɪ/ & /l/ respectively in spite of the fact that they contain three and five letters each. But the word ‘went’ or ‘bulk’ has four phonemes (and four letters too) each: /w/, /e/, /n/ & /t/, and /b/, /ʌ/, /l/ & /k/ respectively.

1.3. IMPORTANCE OF PHONETICS

Phonetics creates great interests in inquisitive learners, especially those who have studied or are interested in linguistics. It has also considerable practical advantages for students. Moreover, phonetics has immeasurable applications some of which are as follows:

One of the best uses of phonetics is that it helps you to pronounce a particular word correctly. Without phonetics, you will not be able to appreciate and use pronunciation. It also helps you develop your fluency and accuracy thereby giving you an edge over others who don’t know the nuances of phonetics. In the present context where English has become a global language, phonetics becomes all the more important.

1.4. BRANCHES OF PHONETICS

Phonetics is the systematic study of human sounds. It is usually divided into three branches: articulatory, acoustic, and auditory phonetics. Let us understand each of these three branches of phonetics:

1.4.1 Articulatory phonetics

It refers to the aspects of phonetics and how the sounds are produced involving the speech organs including the vocal tract. The production of speech involves three processes: initiation, which is setting the air in motion through the vocal tract; phonation, i.e., the modification of airflow as it passes through the larynx; and articulation or the shaping of airflow to generate particular sound types. Articulatory phonetics may further be divided into three areas to describe consonants: voicing, the place of articulation, and the manner of articulation.

We have discussed elsewhere that consonants in English can be either voiced or voiceless depending on how the vocal folds behave when a speech sound is produced.

a.) **The voiced sounds** are produced when the glottis is closed blocking the pulmonic air (the air from the lungs). Since there is constriction or narrowing of the oral passage, the vocal folds vibrate and produce voiced sounds, e.g. /b/, /d/, /v/, /m/ as in ‘ban’, ‘den’, ‘van’, and ‘man’ respectively. In addition to some consonants, Vowels which are generally voiced are made with a constriction of the vocal tract, e.g. /i:/ (‘peel’), /ɪ/ (‘pill’), /u:/ (‘pool’), /ʊ/ (‘pull’), /e/ (‘egg’), /ə/ (‘ago’), /ɜ:/ (‘curl’), /ɔ:/ (‘court’), /æ/ (‘cat’), /ʌ/ (‘cut’), /ɑ:/ (‘cart’), /ɒ/ (‘cat’), /ɪə/ (‘dear’), /eə/ (‘dare’), /ʊə/ (‘doer’), /eɪ/ (‘fail’), /ɔɪ/ (‘foil’), /aɪ/ (‘file’), /əʊ/ (‘four’), and /aʊ/ (‘foul’).

b.) **The voiceless sounds**, on the other hand, are produced with no vocal fold vibration, e.g. /s/ (‘sin’), /t/ (‘tin’), /p/ (‘pin’), and /f/ (‘fin’). In the production of such sounds, the glottis remains wide open, as in normal breathing, making the pulmonic air flow freely without causing any vibration of the vocal folds.

Secondly, **the place of articulation** decides the sounds produced which can be bilabial, labiodentals, dental, alveolar, post-alveolar, palatal, palate-alveolar, and velar.

c.) **The bilabial sounds** are produced when both the lips come into contact with each other to form an effective constriction or blockage, e.g. /p/, /b/, /m/ and /w/ as in the English words ‘park’, ‘bark’, ‘mark’, and ‘work’ respectively.

d.) **The labio-dental sounds**, e.g. /f/ (as in ‘fan’) and /v/ (as in ‘van’) involve the lower lip and the upper teeth. Both these organs come into contact with each other to form an effective narrowing in the vocal tract.

e.) **The dental sounds** such as /θ/, e.g., ‘thought’, /ð/, e.g. ‘that’ are produced when the tip of the tongue makes contact with the teeth or close to the upper teeth to form a constriction.

f.) **The alveolar sounds**, e.g., /t/, /d/, /s/, /z/, and /l/ as in ‘tip’, ‘dip’, ‘sip’, ‘zip’, and ‘lip’ respectively are produced when the blade of the tongue makes a contact with the alveolar ridge to form an effective constriction in the vocal tract.

g.) **The post-alveolar sounds** (e.g. /r/ as in ‘rate’, ‘parrot’, ‘carriage’ etc) are made when the blade of the tongue comes into contact with the post-alveolar region of your mouth (the ridge itself but not as far back as the hard palate).

- h.) **Palatal sounds** are made with the tongue rising up towards the hard palate in the mouth to form a constriction, e.g. /j/ as in ‘yell’, ‘pure’, ‘cute’ etc.
- i.) **The palato-alveolar sounds** such as /ʃ/, /tʃ/, /dʒ/ as in ‘sheep’, ‘cheap’ and ‘jeep’ are formed with the blade or the tip of the tongue touching the region of the alveolar ridge.
- j.) **Velar sounds**, e.g. /k/, /g/, /ŋ/ as in ‘kill’, ‘gill’, and ‘king’ respectively are made when the back of the tongue is raised towards the soft palate and makes an effective constriction.
- k.) **Glottal sounds** are produced in the gap between the vocal cords to make an audible friction, e.g. /h/ as in ‘house’.

1.4.2. The manner of articulation refers to the way a sound is made, as opposed to the place (where) it’s made. Sounds differ in the manner in which they are produced. There are eight manners of articulation of the consonants: plosives, nasals, trill, tap or flap, fricatives, lateral fricatives, approximants, and lateral approximants but for the present purpose, let’s discuss only those that are common to English phonetics.

- a.) **Plosives** are sounds made with a stricture of complete closure somewhere in the vocal tract, and the soft palate is also raised. Air pressure increases behind the closure, and is then released with an explosion, e.g. /p/, /b/, /t/, /d/, /k/, and /g/ as in ‘pen’, ‘ban’, ‘ten’, ‘den’, ‘can’, and ‘gain’ respectively.
- b.) **Affricates** are made with a complete closure somewhere in the mouth, and the soft palate is raised. Air pressure increases behind the closure, and is then released more slowly than in plosives, e.g. /tʃ/ as in ‘teacher’, and /dʒ/ as in ‘jury’.
- c.) **Fricatives** are produced by narrowing the distance between the active and passive articulators causing them to be in close proximity, e.g. /f/, /v/, /θ/, /ð/, /s/, /z/, /h/, /ʃ/, and /ʒ/ (as in words ‘fan’, ‘van’, ‘thank’, ‘than’, ‘sane’, ‘Zen’, ‘hen’, ‘cash’, and ‘leisure’ respectively).
- d.) **Nasals** are made with a stricture of complete oral closure, by the lips or by the tongue against the palate, the soft plate is lowered, and the air escapes through the nose, e.g. /m/ (‘ream’), /n/ (‘neem’) and /ŋ/ (‘ring’).
- e.) **Laterals** are produced with a partial closure made by the blade of the tongue against the alveolar ridge. Air is able to escape through the sides of the tongue, e.g. /l/ as in ‘lime’.

- f.) **Approximants** are created by narrowing the distance between the two articulators. The vocal organs come near to one another, but not so close as to cause audible friction, i.e. /w/ and /j/ as in ‘wet’ and ‘yet’ respectively.

		Place of articulation							
		Front → Back							
		bilabial	labio-dental	dental	alveolar	palato-alveolar	palatal	velar	glottal
Manner of articulation	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	(w)				r	j	w	

(Unvoiced phonemes are on a shaded background. Voiced phonemes are on a white background.)

1.4.3 Acoustic phonetics

It refers to the study of the physical properties of human speech which aims to analyse sound wave signals that occur within speech through varying frequencies, amplitudes, and durations. In other words, acoustic phonetics studies the physical parameters of speech sounds and is therefore the most “technical” of all disciplines concerned with the study of verbal communication. Sound which is one of the most important aspects of acoustic phonetics can travel across relatively long distances and different waves can move more easily and faster through certain substances than others. There are four main properties of a sound wave, i.e. wavelength, period, amplitude, and frequency.

1.4.4 Auditory phonetics

This is a branch of phonetics which is concerned with the hearing of the speech sounds. It also deals with speech perception. If articulatory phonetics studies the way in which speech sounds are produced, auditory phonetics focuses on the perception of sounds or the way in which sounds are heard and interpreted. Thus, we may say that while articulatory phonetics is mainly concerned with the speaker, auditory phonetics deals with the other important participant in verbal communication, the listener.

1.5 NECESSARY PHONETICS TO BE ACQUIRED

In order to be able to speak well and understand what others including the native speakers say, it is necessary for a user to acquire some basic knowledge of phonetics. This includes the airstream mechanisms, the organs of speech, the consonants, the vowels, consonant clusters, syllables, weak forms, the IPA, phonology, phonetics, the difference between phonetics and phonology, the different branches of phonetics,

phonemes, and allophones, the word accent, accent and rhythm in connected speech, intonation, etc. It is also necessary for a user to know how to transcribe words.

1.6. LET'S SUM-UP

Phonetics is the study of human speech sounds in general. Phonology, on the other hand, deals with the selection and organization of sounds or phonemes in a particular language. Phonetics is divided into three branches: articulatory, acoustic, and auditory. Articulatory phonetics describes consonants based on three ways: whether they are voiced or voiceless, the place of articulation, and the manner of articulation.

All vowels and some consonants, e.g. /b/, /d/, /v/, /m/ as in 'ban', 'den', 'van', and 'man' respectively are voiced sounds; and consonants such as /s/ ('sin'), /t/ ('tin'), /p/ ('pin'), and /f/ ('fin') are voiceless. The place of articulation gives you sounds such as bilabial (e.g. /p/ 'pen'), labiodentals (e.g. /f/ 'fan'), dental (e.g. /θ/ 'thought'), alveolar (e.g. /d/ ('den'), post-alveolar (e.g. /r/ 'rat'), palatal (e.g. /j/ 'you'), palato-alveolar (e.g. /ʃ/ 'shop') and velar (e.g. /k/ 'cat'). The manner of articulation gives you plosives (e.g. /t/ 'talk'), nasals (e.g. /m/ /man'), fricatives (e.g. /v/ 'van'), approximants (e.g. /w/ 'well') and vowels.

Acoustic phonetics is the study of the physical properties of speech. Auditory phonetics is deals with hearing of speech sounds and with speech perception. It is helpful for you to have some basic knowledge of phonetics such as the airstream mechanisms, the organs of speech, the consonants, the vowels, consonant clusters, syllables, weak forms, the IPA, phonetics and its branches, phonemes, and allophones, the word accent, accent and rhythm in connected speech, intonation, etc.

1.7 KEY TERMS

- **Acoustic phonetics** refers to the study of the physical properties of speech and aims to analyse sound wave signals that occur within speech through varying frequencies, amplitudes and durations.
- **Articulators** are the different parts of the vocal tract that can change the shape of the airflow to produce speech.
- **Articulatory phonetics** is the branch of phonetics concerned with describing the speech sounds of the world's languages in terms of their articulations, that is, the movements and/or positions of the vocal organs.
- **Auditory phonetics** is a branch of phonetics concerned with the hearing of speech sounds and with speech perception.
- **IPA-International Phonetic Alphabet:** a system of symbols used for representing speech sounds.

- **Manner of Articulation** refers to the configuration and interaction of the articulators (speech organs such as the tongue, lips, and palate) when making a speech sound.
- A **phoneme** is an individual speech sound that makes one word different from another, e.g. /b/ and /f/ as in ‘bill’ and ‘fill’.
- **Phonetics** refers to the study of speech sounds used by human beings.
- **Phonology** is the study of the pattern of speech sounds used in a particular language.
- **Place of Articulation** or the point of articulation of a consonant is the point of contact where an obstruction occurs in the vocal tract between an articulatory gesture, an active articulator and a passive location
- **Voiced sounds** are produced when air passes over the vocal cords, e.g. /b/, /v/, /d/, /z/
- **Voiceless sounds** are produced when vocal cord/fold does not vibrate, e.g. /f/, /s/.
- The **vowel** is a sound that you make when you speak without closing your mouth or throat.

1.8 CHECK YOUR PROGRESS

1. Define phonetics.

.....

2. How is phonetics different from phonology?

.....

3. Discuss the branches of phonetics.

.....

4. Why should you acquire phonetics?

.....

1.9 REFERENCES & FURTHER READINGS

Balasubramanian. 1981. *A Textbook of English Phonetics for Indian Students*. Madras: Macmillan India Ltd.

Bansal, R.K.and J.B.Harrison. 1972. *Spoken English for India*. Madras: Orient Longman Ltd.

Behera, Arun. 2020. *You can Speak English with 'elan*. Coimbatore: The Dawn Publishers

Jones, Daniel. 16th ed. 2003. *Cambridge English Pronouncing Dictionary*. Noida: Cambridge University Press.

Rajapurohit, B.B. 2015. *Phonetics and its Applications to Different Areas*. Thiruvananthapuram: ISDL

1.10 KEY TO EXERCISE

1. Phonetics is with the study of human speech sounds and their properties- articulatory, auditory and acoustic-in a spoken language.
2. While phonetics deals with the study of human speech sounds and their properties, phonology deals with the selection and organization of sounds in a particular language.
3. There are three branches of phonetics: Articulatory Phonetics, Acoustic Phonetics and Auditory Phonetics.
4. We should acquire phonetics in order to be able to speak English well. It will also help us in transcribing words.

UNIT-2 MORPHOLOGY

Structure

- 2.0 Objective
- 2.1 Introduction
- 2.2 Morphology
- 2.3 Inflectional Morphology
- 2.4 Derivational Morphology
- 2.5 Exocentric compounds
- 2.6 Adjective-adjective compound
- 2.7 Constraints of productivity
- 2.8 Let Us Sum Up

2.0 OBJECTIVE

After reading this unit learners would be able to:

- Know what Morphology is.
- Analyse how it is often referred to as grammar of word, the set of rules which govern the words in a natural language.
- Evaluate Morphology as the layer of linguistics which is primarily concerned with the internal structure of words, whether these be simple or complex words, whether they contain grammatical information or have a purely lexical status.

2.1 INTRODUCTION

Language is analysed at various levels. As maintained by many linguists, language is analysed at various levels. These are the levels of:

1. Sounds (Phonetics and phonology)
2. Words (morphology)
3. Structure (Syntax)
4. Context (Pragmatics)
5. Meaning (Semantics)

Phonetics is the discipline which deals with the study of sounds. The set of possible human sounds are studied under this discipline and the set of sound system used in a particular natural language is studied under the discipline of phonology.

Morphology is the study of words and how given sounds combine together to form a word. The term morphology refers to the analysis of minimal forms in language which are constituted of sounds and are used to make words which have either a grammatical or a lexical function. Syntax is the study of how words combine together to form a

sentence. It is concerned with the meanings of words in combination with each other to form phrases or sentences. Semantics is the study of meaning. Here one touches, however, on practically every other level of language as well as there exists lexical, grammatical, sentence and utterance meaning. Pragmatics The concern here is with the use of language in specific situations. The discipline of pragmatics depends for its analyses on the notion of speech act which is concerned with the actual performance of language in a contextually defined scenarios.

2.2 MORPHOLOGY

Morphology is the study of words. It studies the internal structure of the words and how they change their form to generate new words and the kinds of different roles they play in a sentence, strictly following the linguistic rules. Morphology is often referred to as grammar of word, the set of rules which govern the words in a natural language. During antiquity, grammars of languages were based on the models of classical Latin and Greek which themselves were rooted in Sanskrit, which consisted of a large number of endings. Morphology is the layer of linguistics which is primarily concerned with the internal structure of words, whether these be simple or complex words, whether they contain grammatical information or have a purely lexical status. There are various aspects which have to be kept in mind while dealing with words and their forms. The fundamental concept in morphology is that of lexeme. For example, boy and boys are both the same word, in the sense that they have the same lexeme boy. It is a unit in morphology which exists regardless of the fact that there can be multiple forms of that particular word. For example, walk/ walked/ walking/ walks are all forms of a single lexeme called walk. 3 These lexemes constitute the lexicon of a speaker. Lexicon is the mental vocabulary of a person which only keeps a list of all the lexemes. In morphology, a morpheme is the smallest meaningful grammatical unit of a language. A morpheme may or may not be an independent identity. This is so because, it may stand alone as an independent meaningful unit. On the other hand, it may or may not stand as an independent unit. If a morpheme can represent an independent meaning, it is called a root. For example, in the word like cats, cat is a root which can exist independently. -s on the other hand is the plural marker. Such words are also called as free morphemes. Some of the examples of free morphemes are: cat, run, happy, fast, good, friend etcetera. Bound morphemes appear as a part of a word. They have a meaning but they cannot exist independently on their own. They have to be a part of word to convey their meaning. For example, -ness in happiness, -ly in highly, -s in boys, -ful in spoonful, -ed in walked, ir- in irreparable etcetera. Bound morphemes are further classified into Inflectional morphemes and derivational morphemes. Words and their forms are created on the basis of the rules provided by Inflectional and derivational morphology.

2.3 INFLECTIONAL MORPHOLOGY

Let us look at some sentences first. 1. The violinist performed in the plaza yesterday. 2. The violinist performs in the plaza everyday. 3. The violinist will perform in the plaza next week. 4. The violinist is performing in the plaza right now. 5. The performance of the violinist was magnificent. In sentence 1,2,3 and 4 the verb to perform is changing its form in accordance with the tense, aspect and mood. In sentence 1, suffix -ed is added to the root perform to express past tense. 4 In sentence 2, suffix -s is added to the root perform because it is grammatically conditioned by the third person singular subject of the subject the violinist. In sentence 3, modal+ verb is introduced to express an act in future. In sentence 4, -ing form is attached to the root of the verb to express an action which is going on. On the other hand, in sentence 5, the word performance is not a verb; it is a noun. In first four sentences, the grammatical category i.e. verb remains constant whereas in the last sentence the grammatical category changes from verb to noun. Sentence 1 to 4 are an instance of inflection while sentence 5 is an instance of derivation. We will now discuss inflectional morphology in detail. We will come back to derivational morphology later. Inflectional morphology creates new forms of the same word, whereby the new forms agree with the tense, case, voice, aspect, person, number, gender and the mood of an utterance. The inflection of verbs is called as conjugation whereas the inflection of nouns, adjectives, prepositions, adverbs and articles is called as declension. The inflected form of a word often contains both one or more free morphemes (a unit of meaning which can stand by itself as a word), and one or more bound morphemes (a unit of meaning which cannot exist independently as a word). Words which never undergo the process of inflection are said to be invariant; for example, the English verb must is an invariant item: it never takes a suffix or changes form to signify a different grammatical category. Its categories can be determined only from its context. For example,

1. You must put down your thoughts in writing.
 2. The must has been examined by the experts. In the first sentence, must has been used as a verb. But in the second sentence, must has been used as a noun.
- The set of related forms of a word is called as a paradigm. For example, jump: jump/jumped/jumps/ jumping dance: dance/danced/dances/dancing gobble: gobble/ gobbled/ gobbles/gobbling

An inflected form expresses its grammatical category/s through various prefixes and suffixes it gets attached to. A prefix is a bound morpheme, which is added in the beginning of the word to create a new form. For example, un- is added before happy and generates unhappy which is the antonym of the former. Some more instances are: in+ justice= injustice in+ appropriate= inappropriate un+ likely= unlikely ir+ responsible= irresponsible When a bound morpheme is attached to the end of the word, then such morphemes are called as suffixes. For example walk+ ed= walked kitchen+ ette= kitchenette damage+ ed= damaged cow+ s= cows A circumfix is another kind of an affix which attaches itself to the base and surrounds it. For example en+ light+ en= enlighten em+ bold+ en= embolden dis+ continue+ ous= discontinuous 6 An infix

is an uncommon affix which is inserted within the root. It is a characteristic feature of hip hop slang. For example, absolutely+ blooming= abso-bloomin-lutely

Inflections can be broadly classified into : a. Regular inflection b. Irregular inflection

Regular inflection refers to those inflections which follow a standard pattern. For example: dance+ ed= danced merge+ ed= merged boy+ s= boys competition+ s= competitions

The regular suffix for a verb is -ed. For example: surge+ ed= surged roam+ ed= roamed

But this -ed is phonologically conditioned. In other words, the ending sound of the root decides the pronunciation of the past form of a particular verb. It is pronounced as /t/, /d/ and /id/. If the final sound of the root is an unvoiced sound then the suffix -ed is pronounced as /t/. For example, hope+ ed= hoped (-ed pronounced as /t/) talk+ ed= talked (-ed pronounced as /t/)

If the final sound of the root is voiced sound then the suffix -ed will be pronounced as /d/. For example, judge+ ed= judged (-ed pronounced as /d/) open+ ed= opened (-ed pronounced as /d/)

If the final sound of the root is /t/ or /d/ then the suffix -ed will be pronounced as /id/. For example, hand+ ed= handed (-ed pronounced as /id/) post+ ed= posted (-ed pronounced as /id/)

Similarly, the regular plural morpheme is suffixed to the end of the English nouns. For example, rose+ s= roses stop+ s= stops

Similar to the past suffix -ed, -s is also phonologically conditioned. In other words, the ending sound of the root decides the pronunciation of the plural form of a particular noun. It is pronounced as /s/, /z/ and /iz/. If the last consonant of the word is voiceless, then the -s is pronounced as /s/. cup+ s= cups (-s pronounced as /s/) cliff+ s= cliffs (-s pronounced as /s/)

If the last letter of the words ends in a voiced sound, then the -s is pronounced like a /z/. boy+s= boys (-s pronounced as /z/) gem+s= gems (-s pronounced as /z/)

If the last letter of the word is a sibilant, then the -s is pronounced like a /iz/. rose+s= roses (-s pronounced as /iz/) bush+s= bushes (-s pronounced as /iz/)

There are more many verbs and nouns which exhibit irregular inflection. Words with irregular inflections do not fall in the above mentioned categories. For example, mouse+ s= mice child+ s= children man+ s= men

Even the comparative and superlative degrees of certain adjectives exhibit this property. For example, good, better, best bad, worse, worst

Irregular inflection is also exhibited in many verbs. The form generated after adding the suffix -ed is entirely different from its base. 8 For example, throw+ ed= threw sing+ ed= sang

Suppletion is another process which occurs in inflectional morphology. The occurrence of phonemically unrelated allomorphs of a morpheme is called as suppletion. For example, go+ ed= went good+ er= better bad+ er= worse

2.4 DERIVATIONAL MORPHOLOGY

Derivational morphemes are affixes which are added to a lexeme to change its meaning or function. It basically involves two significant processes. One major difference which distinguishes Inflectional morphology from derivational morphology is that, the latter does not only change the form of a word, it also changes the category and the meaning of the word. One of them is affixation and the other one is compounding and the other affixation. Compounding occurs when two or more words are joined together to form a meaningful longer word. For example: scare+crow = scarecrow post+office= postoffice maid+ servant= maidservant bitter+sweet=

bittersweet Semantically speaking compound words can be of four types. They are exocentric, endocentric, copulative and appositional.

2.4.1 Endocentric compounds:

An endocentric compound consists of a head whereby the meaning gets restricted to the head of the compound. For example: steamboat, blackboard, hairbrush, tablecloth etcetera.

2.4.2 Exocentric compounds:

In an exocentric compound, there is a formal head but the meaning is not restricted to the head of the compound. The meaning generated is totally independent of the word formed. For example, scarecrow, spoilsport, killjoy, pickpocket etcetera. Copulative compounds: In a copulative compound words, both the words are considered as head. In other words, they both contribute to the overall meaning of the compound word. For example, deaf-mute, bittersweet, poet-doctor etcetera. Appositional compounds: An appositional compound is formed when two contrary characteristics define the meaning of the resultant compound. For example, player-coach, maidservant. Almost all the natural languages exhibit the case of compound formation. Since we have already dealt with the semantic classification of the compounds, let us now explore the syntactic classification of the compounds. Syntactically speaking, compounds can be divided into four broad categories, but many more minor categories exist. Broad categories of compounding are: 1. Noun-noun compounding: When two or more nouns are combined together, the resulted compound word is also a noun. For example: keyboard, doghouse, sunflower, greenhouse etcetera. 2. Verb-noun compounding: these kinds of compound words are formed by the combination of a verb and its object. For example, spoilsport, rainfall, breakfast, pickpocket etcetera. 3. Verb-verb compounding: Verb-verb compounds are formed as a result of sequencing of two verbs. A compound verb may also include a prepositional verb, phrasal verb and an auxiliary with a verb. For example, oversee, backspace, wear away etcetera.

2.5 ADJECTIVE-ADJECTIVE COMPOUND

In the case of adjective-adjective compound, two attributes are joined together to form a single idea. For example, bittersweet, high speed, part-time. Affixation is another linguistic process in which prefixes, suffixes and circum-fixes are added to a word to derive a new form out of it. Affixation can be both inflectional and derivational. In the case of inflection, affixes do not change the grammatical category of the word. For example, boy, boys hop, hopping, hops, hopped In the case of derivation, the grammatical category of a word changes. The meaning of the derived form has a strong connection with the root. For example, happy, happiness develop, development Productivity One of the most vital aspect of derivational affixes is their productivity. Some affixes are more productive than the others. In other words, they can be used more freely than other affixes. Productivity is a relative phenomenon. Some affixes are more productive while some are less. Bauer (2001) makes a clear distinction between productivity and creativity. He posits that productivity is a rule governed

linguistic process while creativity is not. Creativity, on the other hand is a language feature which has been often termed as ‘productivity’ by linguists like Hockett, Chomsky and others. Creativity as recognised by them is language feature which enables human being to generate infinite number of words and utterances from a finite set of words and sentences. For example, when a prefix un- is added to adjectives and their derivatives and adverbs, then usually an antonym of that particular word is generated. In another context, it also shows the reversal of a particular action. For example, Meaning ‘not’ un+ fair= unfair un+ accept= unaccept un+ abridged= unabridged Meaning ‘reversal of action’ un+ fasten= unfasten un+ do= undo un+ cork= uncork As we saw in the above example, productivity is a rule governed process. We cannot add the prefix un- to any word and expect a new word to sprout. For example: un+ regularize= *unregularize un+ possible= *impossible un+ replaceable= *unreplaceable Now let us look at some of the suffixes: The Latin suffix -ist is added to a noun to form an adjective or a noun. -er on the other hand, is added to a verb to generate agentive nouns. -er is one of the most productive suffix of all because, it can be attached to almost all the verbs and thus create an agentive noun. For example, teach+ er = teacher garden + er= gardener learn + er= learner begin + er= beginner Many linguists like Matthews and Anderson recognise the notion of semi-productivity. This category consists of those idiosyncratic affixes which do not get attached to apparent eligible words. Not only this, when such affixes are used, then the resultant meaning of the word gets narrowed significantly.

Set A	Set B
Depend+ ant = dependent	*barkant
Contest+ ant = contestant	*prechant
Assist + ant = assistant	*accomplishment

2.6 CONSTRAINTS OF PRODUCTIVITY

The most common phenomenon which provides a constraint for productivity is called as blocking. Blocking happens due to some specific semantic, phonological or morphological reasons. Let us look at some examples, there is separate nominal form for the verb to steal which is thief. Therefore, one cannot generate a term *stealer to refer to someone who steals. In the case of phonological constraints, suffix -en can be added to a word which ends with an obstruent sound like black + en= blacken 13 *fine + en = finen some other affixes are also sensitive to the morphological constraints. Words which take -ize suffix can be converted into a noun by adding another suffix -ation. For example, generalize + ation= generalization capitalise + ation= capitalisation colonize+ ation= colonization this rule again prohibits the above mentioned bases to get attached to other suffixes like -age, -ment, -al. Similarly, certain words which take a prefix like un-, for example un+ well= unwell un+ intentionally= unintentionally un+ fair= unfair They cannot take any other prefix with them. For example, in+ well= *inwell in+ intentionally= *inintentionally in+ fair= *infair

2.7 LET US SUM UP

Inflection and Derivation are two extremely vital processes which have provided infinite words to all the natural languages. Let us now sum up the module by identifying the major differences between inflectional morphology and derivational morphology.

Inflectional Morphology	Derivational Morphology
They do not change the grammatical category of the word.	In most of the instances derivation changes the grammatical category of the word
They are often used to contribute to the meaning of the words, thus coining new words.	They eventually lose their meaning as the new words have a distant resemblance to the meaning of the root.
They tend to occur outside the derivational affixes	They have major chances of getting attached to the root.
They provide syntactic information about the word or even a sentence.	Their contribution is lexical restricted.

2.8 CHECK YOUR PROGRESS

1. What is the difference between Inflectional Morphology and Derivational morpheme?

.....
.....
.....
.....
.....
.....
.....

2. What do you mean by Constraints of productivity?

.....
.....
.....
.....
.....

3. What do you mean by endocentric compound?

.....
.....
.....
.....
.....
.....

4. What do you mean by Exocentric compound?

.....
.....
.....
.....
.....
.....
.....

UNIT-3 MORPHOPHONEMICS

Structure

- 3.0 Objective
- 3.1 Introduction
- 3.2 Background
- 3.3 Morphophonemics
- 3.4 Essential Vocabulary
- 3.5 Steps involved in Morphophonemic Analysis
- 3.6 Pluralisation in English
- 3.7 Assimilation of Negative
 - 3.7.1 Grammatical Conditioning and Suppletion
- 3.8 Useful notations }
- 3.9 Summary

3.0 OBJECTIVE

After the completion of this unit, you will be able to:

- Gain an insight into the key concepts of English morphophonemics.
- Understand how morphological structure of a morpheme may affect pronunciation or phonological shape of following or preceding morphemes.

3.1 INTRODUCTION

This module presents an introduction to English morphophonemics. Sound structure (phonology) and word structure (morphology) are two of the main components of a language system. However, many a times, these systems interact and affect each other in some interesting ways and give rise to a phenomenon which is known as ‘morphophonemics’. Sometimes, due to this interaction, pronunciation of a morpheme may get modified or completely changed. These changes may be regular or irregular and usually are context sensitive in nature. In ‘morphophonemics’, we specifically study the changes which occur at the margins/boundaries of morphemes. There are many glossaries, lectures, notes and other reference materials available over the internet for further studies in this area. Some of the pioneer reference works are also listed in the reference section. Note: In this module, IPA transcriptions of morphemes/words have been throughout referred from Cambridge Online dictionary.

3.2 BACKGROUND

In his book titled ‘A Manual Of Phonology’ Charles F. Hockett, Professor of linguistics and anthropology, says that language is nothing but a complex system of

habits and this system can be broken down and categorized into five principle subsystems:

1. The phonological system: refers to the stock of phonemes and the systematic arrangements in which these phonemes occur in a language;
2. The grammatical system: refers to the stock of morphemes, the systematic arrangements in which these morphemes occur in a language;
3. The morphophonemic system: refers to the relational code that ties phonological and grammatical system together.
4. The semantic system: refers to the association of morphemes, combinations of morphemes, and the systematic arrangements in which morphemes can be put, with things and situations, or kinds of things and situations.
5. The phonetic system: refers to the process in which phonemes, sequences of phonemes or are converted into sound waves/speech signals by a speaker, and these sound waves/speech are then decoded from by a hearer.

Of these five principle subsystems, 1 to 3 are central, while 4-5 seem to be peripheral in nature to the language as a system. In this chapter, our main focus will be on 3 ‘The morphophonemic system’ and this focus will further be limited to scope in that examples and discussions will be revolve around morphophonemic system of English language.

3.3 MORPHOPHONEMICS

Morphophonemics may be defined as analysis and classification of the phonological factors which affect the pronunciation of morphemes or, correspondingly, the morphological factors which affect the appearance of phonemes. In morphophonemics, we basically study interaction between morphological and phonological processes and how they these factors affect each other. Morphophonemic change usually occurs at morpheme boundaries and it involves sounds that are associated with separate phonemes. One very obvious example to morphophonemics would be the use of indefinite in English language. Indefinite article in English has two manifestations: a and an. If a word begins with a consonantal sound then indefinite article is manifested as ‘a’ (a mango or a cat), while it is manifested as ‘an’ (an apple or an idiot) if following word starts with a vowel sound. Note: The term ‘sound’ refers to the way a phone (consonant or vowel) is pronounced, not necessarily written, in English. Therefore, an hour is a correct phrase not *a hour and a university is the correct phrase not *an university.

3.4 ESSENTIAL VOCABULARY

To understand these kind of sound changes, i.e., morphophonemics, it’s important to give a quick look to following concepts: the smallest unit of sound (both underlying and surface forms - phoneme and phone, respectively) minimal unit of meaning (both underlying and surface forms – morpheme and morph, respectively), and how these

phonemes and morphemes may show variation in their shape given different contexts – known as allophony and allomorphy, respectively). Allomorphs are derived from a single morpheme known as underlying representation with the help of morphophonemic rules.

A. Phoneme: a phoneme is considered as a smallest unit of human speech sound that distinguishes meaning. Phonemes are usually written within slanted brackets //. There are 26 letters in English alphabet. But these 26 letters represent 44 phonemes. For example, phoneme /k/ occurs in words such as cut, kite, school and skin.

B. Phone: a phone is a surface manifestation/form of a phoneme given a phonological environment. Phones are usually written within square brackets []. In English, phoneme /p/ is manifested (pronounced) as [p] in words like spat and spoon but as [ph] in words like pin, pick and poll.

C. Morpheme: a morpheme is a minimal, i.e. indivisible, unit of meaning. Morphemes are of various types given their structure (free and bound), content (zero and null) and functions (derivational and inflexional).

D. Morph: a morph is a surface manifestation/form of morpheme given a phonological environment. For example, plural morpheme is realized as [s] (cats and bats), [z] (dogs and calls) and [əz] (judges and churches) given different phonological environment.

E. Allophone: an allophone is a phonetic variant of a phoneme in a particular language.

F. Allomorph: an allomorph is one of two or more complementary morphs which manifest a morph in its different phonological or morphological environments.

G. Underlying Representation: an underlying representation is the most basic form of a morpheme/word before any phonological, morphological or morphophonological rule has been applied to it. Underlying representation shows native speaker's knowledge about the abstract underlying phonology of the language.

H. Surface Representation: A surface representation (actual occurrence) is the form of a word that is spoken and heard.

I. Morphophonemic rules: A morphophonemic rule is written in form of a phonological rule but it is restricted to a particular morphological environment. Unlike phonological rules, morphophonemic rules are sensitive to their

environment. Whenever morphological information is required to specify the environment for an phonological rule, the rule is morphophonemic.

J. Phonological conditioning: phonological conditioning refers to the phenomenon wherein phonological environment of a morpheme determines selection and shape of its allomorph(s).

K. Morphological conditioning: morphological conditioning is a conditioning wherein morphological environment of a morpheme determines selection and shape its allomorph(s).

3.5 STEPS INVOLVED IN MORPHOPHONEMIC ANALYSIS

Morphemes are stored in lexicon. They are strung together by morphological and syntactic rules. These morphemes are then converted to their surface forms by a sequence of ordered phonological rules. In doing morphophonemic analysis, our aim is to establish a transparent connection – as far as it is possible – between data and theory. The main purpose of morphophonemic analysis is to discover a set of underlying forms and the ordered rules which are consistent with the given data. Main steps involved in the process of morphophonemic analysis are as following:

- I. **Phonemicization:** It is easier to perform morphophonemic analysis with data that are already expressed as phonemes. Therefore, it is recommended first to reduce the data into phonemes. This step is also referred as pre-processing of data in the process morphophonemic analysis.
- II. **Morpheme division:** The second step is to divide the words forms into their component morphemes. However, phonological alternations tend to obscure this division.
- III. **Finding the allomorphs:** Keeping visible and possible phonological alternation in mind, it's necessary to find the allomorph of each alternating morpheme. After allomorphs have been indentified, find the segment(s) which tend to alternate.
- IV. **Active rules:** After division of words into morphemes and identification of allomorphs, it is possible to state rules and their order of application.
- V. **Setting up underlying representations:** Taking into account the logical possibilities, underlying representations are to be set up so that all the possible allomorphs of each morpheme can be derived from a single underlying representation using general phonological rules. However, choosing underlying representations often involves considering more than one hypothesis. The following steps are usually helpful in determining correct underlying form:-
} Segments exhibiting X~Y alternation are underlying /X/, which is converted to [Y] in certain contexts by one or more phonological rules. }
} Segments exhibiting X~Y alternation are underlying /Y/, which is converted to [X] in certain contexts by one or more phonological rules. }
} Surface segments that do not alternate are assumed to be the same at the underlying level. }
} For segments that

alternate, consistently use the underlying segment. So, if there was a X~Y alternation and you determined that underlying the segment was /X/, then consistently write /X/ as the underlying representation in all lexical items with the X~Y alternation. Each morpheme has only one underlying representation form. Note: An underlying form does not always necessarily correspond to the pronunciation of some pronounced word.

3.6 PLURALISATION IN ENGLISH

To understand the morphophonemics, it's very important to understand concepts A to K not only in isolation but also as to how they appear in a morphophonemic process. Here, we will present regular pluralisation process of English language. Below are given four set of single morpheme words and their plural counterparts in English. Both singular and plural forms have been presented with their respective IPA transcriptions. Table 1

Word (Singular)	IPA Transcription	Word (Plural)	IPA Transcription
cut	/kʌt/	cuts	/kʌts/
kick	/kɪk/	kicks	/kɪks/
top	/tɒp/	tops	/tɒps/
dog	/dɒg/	dogs	/dɒgz/
rib	/rɪb/	ribs	/rɪbz/
kid	/kɪd/	kids	/kɪdz/
judge	/dʒʌdʒ/	judges	/dʒʌdʒəz/
wish	/wɪʃ/	wishes	/wɪʃəz/
church	/tʃɜ:tʃ/	churches	/tʃɜ:tʃəz/
shoe	/ʃu:/	shoes	/ʃu:z/
day	/deɪ/	days	/deɪz/
pea	/pi:/	peas	/pi:z/

Upon careful observation of the data, it is noticed that plural morpheme in English is realized as /-s/, /-z/ and /-əz/ given different phonological environment of the stem to which plural morpheme gets attached to. When one morpheme takes more than one form (morph) in different phonological or morphological environment, these morphs are referred as allomorph to one another. In this kind of situation, we need to set up a single underlying representation from which other morphs are derived for their pronunciation in any particular context. This underlying representation is achieved with the help of some rules, usually referred as morphophonemic rules. To see how it works in English, we will consider the phonological environment of all three sets. Since in English language, plural morpheme gets attached to the right boundary (word + plural morpheme) of a morpheme, phonological environment of the right boundary will be taken into account for the consideration.

- First set consisting of 'cut, kick and top' morphemes have their right boundary ending in voiceless consonant which is non-strident. These morphemes take /-s/ allomorph.
- Second set consisting of 'dog, rib and kid' morphemes have their right boundary ending in voiced consonant which is non-strident. These morphemes take /-z/ allomorph.
- Third set consisting of 'judge, wish and church' morphemes have their right boundary ending in a consonant that strident in nature. These morphemes take /-əz/ allomorph.
- Fourth set consisting 'shoe, day and pea' morphemes have their right boundary ending in vowel. These morphemes also take /-z/ allomorph. Therefore, it is evident allocation of plural allomorph in English is not random in nature but is conditioned by phonological environment occurring at right boundary of the

morpheme. Usually, the allomorph with the wisest distribution qualifies as a suitable candidate for underlying representation. In this case, /-z/ qualifies to become underlying allomorph as it occurs after most voiced consonants and after all vowels. And from allomorph /-z/, other allomorphs /-s/ and /-əz/ and //have been derived. This whole process can be explained by (a set of) rules known as morphophonemic rules. Underlying form /-z/ [-s] [-əz] [-z] surface form In deriving the correct final surface form from underlying form in the regular pluralisation process of English, two morphophonemic rules are in effect: 1) coda epenthesis and 2) devoicing. The first rule, coda epenthesis, inserts a schwa whenever the /-z/ appears after a morpheme has its right boundary ending in a strident consonant. Insertion of schwa helps break up the illegal consonant cluster in English. I $\emptyset \rightarrow \text{ə} / [+strident] \text{ ______ } -z$ The second rule ensures the devoicing of underlying form /-z/ when it occurs after a voiceless consonant in the same coda. II $-z \rightarrow [-voice] / [-voice] \text{ ______ }] \sigma$ (Devoicing helps ensure that English plurals comply with the phonotactics of English as no word in English contains a coda in which a voiceless consonant is followed by a voiced consonant). Therefore, pluralisation process for English language may be summarized in following way:

Table - 2 word + plural morpheme

cut-s dog-s judge-s order of rule application underlying representation /kʌt-z/ /dɒg-z/ /dʒʌdʒ-z/ coda epenthesis - - /dʒʌdʒəz/ devoicing /kʌts/ - - surface form [kʌts] [dɒgz] [dʒʌdʒəz] It is to be noticed that it is not the correct morphophonemic rules but also the correct ordering of these rules is equally crucial. In absence of correct ordering, produced surface forms may well be incorrect. For example, if we change the ordering of coda epenthesis and devoicing rules in the above example, /dʒʌdʒs/* will get produced as a surface form for judges.

Table -3 word + plural morpheme cut-s dog-s judge-s order of rule application underlying representation /kʌt-z/ /dɒg-z/ /dʒʌdʒ-z/ devoicing /kʌts/ - dʒʌdʒ-s/ coda epenthesis - - - surface form [kʌts] [dɒgz] [dʒʌdʒs]* It is clear that pronunciation, i.e., surface appearance, of plural allomorph in English depends on the phonological environment occurring at the right boundary of the morpheme. This phenomenon is also known as phonological conditioning and allomorphs /-s/, /-z/ and /- əz/ are also referred as phonologically conditioned allomorphs. However, the regularity of phonological conditioning is restricted in its scope, that is, several morphemes despite of having suitable phonological environment for undergoing change may exhibit no or some different kind of phonological change, i.e. the proximity of a sound(s) does not affect these forms. For example, -en as a plural making morpheme is a peculiar case to only certain words such as children, oxen, brethren, etc. These kinds of changes are to due to what is called morphological conditioning. Occurrence of a morph/form is determined by the morpheme it gets attached to rather than its phonological environment. To further support the concept, we will present another subclass of plurals in English, which defies the present phonological environment and does not let the morpheme undergo any change whereas another set having same phonological

environment undergoes predictable changes. English has a restricted class of words in which sound /f/ at the right margin of the stem/base alternates with /v/ when there is a plural suffix gets attached to them. However, the alternating class (first two columns) is unproductive. Any newly coined word(s) with final /f/ entering in English does not exhibit the f-v alternation.

Table - 4 Alternating class Non-alternating class Singular Plural Singular Plural thief thieves chief chiefs wolf wolves laugh laughs knife knives fife fifes leaf leaves whiff whiffs
The process responsible for this f-v alternation and their respective derivations from underlying form /z/ is given as follows (Table 5): /f/ Voicing f → v / ___]-Plural
Table - 5 Word (alternating class) Plural form Word (non-alternating class) Plural form order of rule application plural forms knife knives laughs laughs underlying /naɪf/ /naɪf-z/ /lɑ:f/ /lɑ:f - z/ representation f → v rule /naɪvz/ devoicing /lɑ:fs/ Surface form [naɪvz] [lɑ:fs] As it is clear from the Table-3, order of rule application is equally important in this case too. Else, we will end up deriving incorrect plural form /naɪvs/*.

Table - 5 Word (alternating class) Plural form Word (non-alternating class) Plural form order of rule application plural forms knife knives laughs laughs underlying representation /naɪf/ /naɪf-z/ /lɑ:f/ /lɑ:f - z/ devoicing /naɪfs/ /lɑ:fs/ f → v rule /naɪvs/* Surface form [naɪvs]* [lɑ:fs] After discussing pluralization process, we can move to some other morphophonemic changes which are commonly found in English and other languages of the world.

3.7 ASSIMILATION OF NEGATIVE

Prefix ‘in-’ in English Assimilation is a sound change in which one sound becomes more like a following sound. This may occur either within words/morphemes (phonological change) or between words/morphemes (morphophonemic change). In the prefixation process, final sound (marginal sound) of a prefix becomes more like the first sound of a base/root to which it attaches to. However, it usually happens when the articulation of the two sounds – last sound of the prefix and first sound of the base - carries some degree of feature similarity. The assimilation, however, does not always necessarily occur between two sequential sounds. Sometimes, sounds which are in distance, i.e., having some other sounds in-between, also tend to assimilate. To understand how assimilation affects pronunciation in English, we will examine the below given data: Table - 6 Word Negative prefix + word IPA Transcription possible in+possible /ɪmˈpɒsɪbəl/ balance in+balance /ɪmbæləns/ tolerable in+tolerable /ɪntɒlərəbl/ decent in+decent /ɪndiːsənt/ active in+active /ɪnæktɪv/ alienable in+alienable /ɪnelɪənəbl/ complete in+ complete /ɪŋkʌmpli:t/ gratitude in+gratitude /ɪŋgrætɪtju:d/ Now that it is clear that negative morpheme ‘in-’ manifests itself as [im-], [in] and [ɪŋ] allomorph. The occurrence of the appropriate allomorph is subject to following consonant, here, initial consonant of the following base/root. We can make following observations based on the above given data: a) Allomorph [im-] occurs only before when following consonant is labial in nature – [e.g. p, b, f, m]. b) Occurrence of Allomorph [ɪŋ] only before the velar consonants – [k, g] c) Elsewhere, allomorph

[in] is found to be appearing, that is to say, before alveolar consonants such as [t, d, s, z, n] and before vowels sounds such as [ə, ʊ, u, ɪ, i:] It is evident that pronunciation of the nasal consonant of the prefix ‘in-’ is adjusted to match the place of articulation of the first consonant representing the following base/morpheme. Of the three occurring allomorphs [im-], [in-] and [ɪŋ], the most frequently distributed morpheme is [in-]. Therefore, [in-] may be selected as underlying form of the ‘in-’ morpheme. These allomorphs are in complementary distribution, i.e., no two of them can occur in identical environment. This again is a clear and plain example of what is called phonological conditioning. However, we can also notice that the prepositional prefix ‘in-’ having same phonological environment does not always assimilate to the first sound of the following root/base/morpheme if the roots are of native origin. For examples, words such as inboard, inborn, inbound, inbreed, inlay, inland, inlet, inmate, input, inroad, etc., don’t show any kind of assimilation. While negative prefix in-’ shows a tendency for assimilating with the place of articulation of the following sound, the other negative prefixes such as ‘un-’ and ‘non-’ do not show any regular characteristics of assimilating behaviour. See some examples below: un- + polluted → unpolluted (*umpolluted) non- + personal → non-personal (*nom-personal) un- + balanced → unbalanced (*umbalanced) non- + business → non-business (*nom-business) (un- + marked → unmarked (*ummarked) non- +medical → non-medical (*nom-medical) (un- + lawful → unlawful (*ullawful) non- + legal → non-legal (*nol-legal) un- + reasonable → unreasonable (*urreasonable) non- + restrictive → non-restrictive (*nor-restrictive) [see Okada, 2013] If in- could be attached to all the words above instead of un- and non-, assimilation would be expected to take place.

15.6.3 Stress Shift in English: Of the several active morphophonemic processes in English, one is shifting of stress from one syllable to another whenever a new morpheme gets attached to it. English is stress timed language and primary stress falls normally on the first syllable of the word. However, it may appear on any syllable. Usually, deriving words via affixation may lead to shift of stress and thereby may lead to modification or change in one or more vowels. This is also addressed as vowel gradation or vowel alternation process. Let us have a quick look to the following data given Table 7. Syllable carrying primary stress have been marked in bold case. Table -7 word 1 st derivation 2 nd derivation 3 rd Derivation photo photograph photography photographic /'fəʊ.təʊ/ /'fəʊ.tə.grɑ:f/ /fə'tɒg.rə.fi/ /,fəʊ.tə'græf.ɪk/ drama dramatic dramatically /'drɑ:.mə/ /drə'mæt.ɪk/ /drə'mæt.ɪ.kl.i/ As it is clear from the Table-7 that affixation process may lead to the shift of stress or gradation of vowels, however, this kind of change may be regular with one set of affixes and completely sporadic with other ones. Hence, rules describing stress patterns in English are not exhaustive in nature. Some rules may, anyway, be stated for the common understanding:-

1. Primary stress falls on 1st syllable: a) Monosyllabic words b) Most of the disyllabic nouns (label, bible, treaty, purchase, etc.) c) Compound nouns: (sidewalk, streetlight, headset, etc) d) Most of the disyllabic adjectives (lucky, clever, active, skittish, etc.)

2. Primary stress falls on 2nd syllable: a) Most of the disyllabic verbs (invent, divulge, implore, etc.) b) Compound and two-word (phrasal) (undo, pass out, give up, etc.)
3. Primary stress falls on penultimate syllable: a) Adjectives ending in –ic suffix (syllabic, autocratic, historic, etc.) b) Nouns ending in –sion or –tion suffix (decision, intuition, prevention, etc.)
4. Primary stress falls on ante-penultimate syllable: a) Nouns ending in -cy, -ty, -phy, -gy, suffixes (democracy, photography, energy, etc.) b) Adjectives ending in –cal, (medical, practical, etc.)

3.7.1 Grammatical Conditioning and Suppletion

Unlike what we majorly discussed in the previous sections (Pluralisation in English and assimilation of negative prefix in-), sometimes phonological factors play no role in the selection of a particular allomorph. It is rather determined by a certain grammatical class. Its choice may be dependent on a certain grammatical class. A special allomorph may be required in a given grammatical context; there may not be any good phonological reason for its selection, however. For example, in irregular verbs such as see in English. see, saw, seen determined by the present tense, past tense, and the non-progressive participle (these are grammatical features). There also exist a few morphemes whose allomorphs show no phonetic similarity. For example, comparative adjective form of good, i.e. better, contains lexeme good but there is not a single common sound found between both of them. These kinds of cases, wherein two morphemes are phonetically unrelated, are referred as cases of suppletion.

3.8 USEFUL NOTATIONS

Since morphemes are made of phonemes, they are expressed between slashes ‘//’. } The boundary between two morphemes is often represented either with plus sign ‘+’. Sometimes linguists also use a hyphen ‘-’ for expressing morpheme boundary. } Word boundaries are usually indicated with hash sign ‘#’. } A rule A B / C _ D, will be read as A changes into B in the environment when C precedes the sound A and D follows the sound A. The forward arrow () translates into ‘changes into’ and forward slash (/) translates into ‘in the environment of’. A sometimes is also addressed as target, B as change and C & D are trigger. } Notation ‘_’ is often referred as focus bar and this is where the change takes place. } Symbol ‘Ø’ for expressing process of deletion and epenthesis. } σ - labelled parenthesis is used to indicate the syllable boundary. } Asterisk (*) refers to ungrammatical or unacceptable string of words. }

3.9 LET US USM UP

Phonology is regarded as the foundation for other branches of linguistics. Morpheme, a minimal distinctive unit of meaning, constitutes of nothing but a set of phoneme(s), a minimal unit of sound. The phonemes tend to behave interestingly when they get combined to produce a morpheme or other longer units such as syllables, words,

phrases and sentences. Their combine (phonological) effect often crosses over so called boundaries in several subtle and visible ways. Sometimes the effect could be synchronic and sometimes it may be diachronic in nature. These effects may be regular or completely sporadic in their occurrences. In the discipline of morphophonemics, we study as to how morphological and phonological factors affect each other usually at morpheme boundaries involving separate phonemes. Morphophonemic properties of English or any other language for that matter are of great importance in order to analyse other linguistic properties of that language.

3.10 CHECK YOUR PROGRESS

1. What do you mean by Morpheme?

.....
.....
.....
.....
.....
.....

2. What do you mean by Allophone?

.....
.....
.....
.....
.....
.....

3. What do you mean by Phonemicization?

.....
.....
.....
.....
.....
.....

4. What do you mean by Grammatical Conditioning and Suppletion?

.....
.....
.....
.....
.....

UNIT-4 MORPHOLOGY CLASSIFICATION

Structure

- 4.0 Objective
- 4.1 Introduction
- 4.2 Why Morphology is necessary?
- 4.3 Morpheme
- 4.4 Classification of Morphemes:
- 4.5 Classification of bound morpheme:
 - 4.5.1 Derivational morpheme
 - 4.5.2 Inflectional morpheme
 - 4.5.3 Zero morphemes:
 - 4.5.4 Clitics
 - 4.5.5 Word
 - 4.5.6 Lexeme
 - 4.5.7 Morph
 - 4.5.8 Discontinuous morpheme:
 - 4.5.9 Nida's principles for the identification of morphemes
 - 4.5.10 Morphophonemic processes
 - 4.5.11 Word Formation processes
 - 4.5.12 Reduplication
 - 4.5.13 Lexical Morphology
- 4.6 Let Us Sum Up
- 4.7 Check Your Progress

4.0 OBJECTIVE

This unit deals with the basic concepts in morphology. The primary intension of this module is to enable the students to develop an insight into the word structure and word formation. The module is both theoretical and practical in nature. It is theoretical as it provides the students with considerable knowledge of morphological terms and processes. It is practical as it helps the students to develop their skills in morphological analyses. The essential reading and the additional reading list will help the students to have an in-depth understanding of the topic. The multiple choice questions and other exercise questions will help them to assess their knowledge and better understanding of the module.

4.1 INTRODUCTION

Basic concepts in morphology. Morphology is the branch of linguistics that deals with words their internal structure and how they are formed. The German poet, novelist, playwright and philosopher Johann Wolfgang von Goethe (1749-1832) coined the term morphology in the nineteenth century in a biological context. This word is of Greek origin. The term 'morph' means shape or form and morphology means the study of forms. Thus Morphology attempts to explain and account for the following:

- How words are created in a particular language
- What is the appropriate form of a word given its location in a particular sentence
- What governs the use of the correct form in a particular sentence

4.2 WHY MORPHOLOGY IS NECESSARY?

To get an accurate description of individual languages in a detailed manner as much as possible.

- We can search for patterns in human languages at the word level.
- Theorize and conceptualize how morphemes can be organized.
- We can understand the processes involved in word formation.
- Other than Linguistics morphological knowledge can be used in other fields like language documentation, anthropology, and second language acquisition teachers: ESL, cognitive scientists, language art teachers, writers.

4.3 MORPHEME

Morphemes are the smallest indivisible unit of meaningful content and grammatical function. A morpheme is not identical to a word. A morpheme may or may not stand alone whereas a word can stand alone. Morpheme can be defined as a word or part of a word that has a semantic content and that contains no smaller part with a semantic content. For example, the word unforgivable has 3 morphemes {un} is a prefix meaning “not” + {forgive} is the root morpheme + {able} is an adjective forming suffix. Every word will comprise of one or more morphemes. For example the word dog has one morpheme and when we add a plural marker -s to the word dog it becomes dogs with two morphemes where the suffix -s plays a grammatical function.

4.4 CLASSIFICATION OF MORPHEMES

Morphemes can be classified into two types: Free morpheme and bound morpheme. (i) Free morpheme: Free morphemes are the words that can stand alone and work independently like for example: cat, dog, car, tree. (ii) Bound morpheme: Bound morphemes are those which cannot stand alone and work independently. It occurs only

in combination with other morphemes or root. For example: -un, -s, -er, -ing, -tion, -ly.

4.5 CLASSIFICATION OF BOUND MORPHEME:

Affixes: Affixes are always bound morphemes that are attached to a word. Affixes in a word are assigned for the grammatical function. Affixes are added to a word or root of a word to change the meaning. Affixes can be further classified onto various types based on the position they occur in a word. **Prefix:** It is the letter or group of letters that is always placed at the beginning of a word. It precedes the base. For example: un-necessary, illogical, re-start, ir-regular.

Suffix: It follows the base. Suffixes are placed at the end of a word. For example: cleanli-ness, regular-ly, play-ing, play-er. **Circumfix:** They occur on both sides of the base. One part appears before the base and the other part appears after the base. For example: un-mind-ful, in the Malay root word -adil "fair" both the prefix "ke" and suffix "an" can be added to form the circumfix ke-adil-an "fairness". **Infix:** It is placed within the base itself. For example: d-un-ater which means wiser is an example from the Tagalog language. Further classifications of affixes are: Derivational morphemes, and Inflectional morphemes.

4.5.1 Derivational Morpheme: Derivational morphemes are those which change the part of speech or meaning when combined with a root. Generally the affixes used with the root word are bound morphemes. For example: Verb to Noun: sing – singer
Noun to adjective: length - long
Adjective to Adverb: happy - happily
Adjective to Verb: creative – create

4.5.2 Inflectional morpheme: Inflectional morphemes are those morphemes that do not change part of speech or meaning. It indicates the syntactic or semantic relation between different words in a sentence. For example: wait to wait-ed, dog to dog-s, play to play-ing.

- a.) **Portmanteau morpheme:** Portmanteau morphemes are those morphemes which contain more than one meaning but cannot be further broken into separate morphemes. E.g. she (3rd person+singular+feminine+subject)
- b.) **Empty morphemes:** Empty morphemes are those morphemes that have structure or form but have no semantic content. For example: cran in the word cran-berry, berry has meaning of its own but cran doesn't have any semantic content.

4.5.3 Zero morphemes: Zero morphemes are those morphemes that are physically not present in the word, yet fulfil the grammatical requirement of the language. In the zero morphemes the null morpheme is added to the root, therefore it has a function but no form. For example: the verb put has same form in both past and present. Similarly

the word cut has same form in both past and present. In the word sheep, the plural form is also sheep. The word sheep gets attached to a null plural morpheme, which changes the meaning but doesn't change the form.

4.5.4 Clitics: Clitics are morphemes that have phonological dependency on a neighbouring word but whose syntax is word like. They are syntactically independent but phonologically dependent and always bound on some other form. Clitics often have grammatical rather than lexical meaning. They belong to closed classes like pronouns, prepositions, determiners and conjunctions. They are usually appearing at the edge of a word, outside derivational and inflectional affixes. For example: the contraction of the morpheme is, as in 'what's happening?' or the contracted forms of the auxiliary verbs in I'm and we've are Clitics. Clitics can be of two types: proclitics and enclitics. Proclitics occur at the beginning of the morpheme that is before the host and enclitics occur at the end of a morpheme that is after its host.

4.5.5 Word: A word is the minimal free unit. A word may consist of a single morpheme as in red, white, boy, run or more than one as in redness, boys, running, quickly, Word can be used in different senses: as a physical unit and as a semantic entity. The physical entities, the written or spoken forms of a word are called word forms. In other words, word forms are the physical realization of lexemes. For example: 'talk', 'talked', 'talking' are different word forms of the word 'talk'. Words can be combined together to form phrases, clauses and sentences. Spoken words are made up of units of sound called phonemes, and written words of symbols are called graphemes.

4.5.6 Lexeme: Lexeme is a term used to refer to the idea that inflected forms which are also words themselves are still variants of a single word. It is the basic unit of meaning. The headwords or the vocabulary that are given in a dictionary are the lexemes. It includes all the inflected forms of a word. For example: Play- 'plays', 'playing', 'player', 'play'

4.5.7 Morph: A morph is the physical form representation of some morpheme in a language. It is the recurrent distinctive sound (phoneme) or sequence of sounds (phonemes). For example: the word infamous is made up of three morphs -in-fam-eous which represents one single morpheme. Langendoen defines it "as a specific pronunciation associated with a specific meaning such that the pronunciation cannot be broken down into meaningful parts whose meanings combine to form the meaning of the whole." For example: the word 'no', there is no distinction between the morpheme and the morph as there is only one meaning associated with the pronunciation.

4.5.8 Discontinuous morpheme: Discontinuous morphemes are those morphemes that are interrupted by the insertion of another morphological unit. For example: Circumfixes.

- a.) **Allomorph:** They are the group of morphs that are the realization of the same morpheme. Just as an allophone is the variation of a single phoneme, an allomorph is a variety of a single morpheme. For example: the English noun plural morpheme has the following allomorphs: -z as in dogs, -s as in cats, -Iz as in buses.

- b.) **Suppletion:** In suppletion the allomorphs of a morpheme are phonologically unrelated. For example: go-went, is-was, bad-worse-worst, one-first, good/better.

- c.) **Root:** A root is the basic lexical unit of a word, which contains the most significant aspects of semantic content. A root cannot be further reduced into smaller parts. Roots are the lexical morphemes and the base to which grammatical derivational morphemes are added to form a complex word. A root is that part of a word that is remaining after all the affixes are removed. It is the basic part that is remaining in a lexeme. For example: in the word 'untouchables' the root is 'touch' , the suffix -able, prefix -un and another suffix -s are added to the root . 'Play' is the root form of 'plays', 'playing', 'played', 'player.' Some lexemes have more than one root. A root can also be a stem. As it is said “All roots can be base but not all bases are roots.”

- d.) **Stem:** Stem is a part of word that occurs before any inflectional affix. It is related to only inflection. For example: 'touch' is the stem in the word 'touched.' Bases can be called stems in inflectional morphology.

- e.) **Base:** A base is any form of a word to which affixes of any kind can be added. It yields a more complex form of a word. The affixes attached to a base can be inflectional affixes selected for syntactic reasons or derivational affixes which alter the meaning or the grammatical category of the base. For example: a root like 'girl' can be a base since it can be attached to various other affixes like '-s' as in girls '-ish' as in girlish.

4.5.9 Nida's principles for the identification of morphemes

Nida's Principle 1: Forms, which have a common semantic distinctiveness and an identical phonemic form in all their occurrences constitute a single morpheme. Example: '-er' in singer, player, writer, teacher.

Nida's Principle 2: Forms, which have common semantic distinctiveness, but which differ in phonetic form may constitute a morpheme provided the distribution of formal differences is phonologically defined. For example: -z as in dogs, -s as in cats, -Iz as in buses respectively constitute a morpheme but their occurrences are phonologically conditioned.

Nida's Principle 3: Forms which have a common semantic distinctiveness, but which differ in phonetic form in such a way that their distribution cannot be phonologically

defined constitute a single morpheme, if the forms are in a complementary distribution.

Nida's Principle 4: An overt formal difference in a structural series constitutes a morpheme, if in any number of such series the overt formal difference and a zero structural difference are the only significant features for distinguishing a minimal unit of phonetic semantic distinctiveness. For example: both 'books' and 'deer' are plurals, but one has the plural marker '-s' and the other has a null morpheme 'Ø' as the plural marker. According to Nida's 4th principle the plural marker '-s' and the other plural marker 'Ø' constitute the same morpheme.

Nida's Principle 5: Homophonous forms are identifiable as the same or different morphemes based on the following conditions: • Homophonous forms with distinctively different meanings constitute different morphemes. For example: pair, pare and pear constitute different morphemes. • Homophonous forms with related meanings constitute a single morpheme if the meaning classes are paralleled by distributional differences. For example: 'run' in the expression 'they run' and 'their run'.

Nida's Principle 6: A morpheme is isolable if it occurs under the following conditions: • In isolation • In multiple combinations, in at least one of which the unit with which it is combined occurs in isolation or in other combination. • In a single combination, provided the element with which it is combined occur in isolation or in other combinations with non-unique constituents. For example: Morphemes like 'cran', 'rasp' etc. which occurs only in single combinations like cranberry, raspberry.

4.5.10 Morphophonemic processes

Assimilation: Assimilation is the process in which one sound becomes more similar to another neighbouring sound under the influence of that neighbouring sound. The changes are classified as total-partial assimilation, progressive-regressive and contact-distant. Total Assimilation- If a sound becomes completely identical to another by taking all the phonetic features that change is a total assimilation. For example: Latin septem 'seven' > Italian sette. Partial Assimilation- Partial assimilation occurs when the assimilating sound acquires some of the features and doesn't become identical. For example: Old English efn 'even' > West-Saxon emn. Progressive Assimilation- Forward spread of the feature in assimilation is known as progressive assimilation. A sound becomes more like the preceding sound. In progressive assimilation which is also known as perseverative assimilation the source of assimilation is the first sound in the sequence. For example: The English plural is either /z/ or /s/ when it occurs after a non-sibilant sound. The voicing feature is taken from the final consonant of the base. For example: "tape" pronounced as "tate" Regressive Assimilation- Backward spread of feature in assimilation is termed as regressive assimilation. A sound becomes more like a following sound. In regressive assimilation also known as anticipatory assimilation the source of the assimilation is the second sound in the sequence. For example: "tape" pronounced as "pape" in + logical ∅ illogical Contact Assimilation- If the sound undergoing change and conditioning sound are immediately adjacent to each

other than it is called contact assimilation. For example: the English word sixth [sɪksT] [s] becomes dental under the influence of the adjoining [T]. E.g., in + possible ◇ impossible Distant Assimilation- If the sounds undergoing the changes are not adjacent to each other, it is called distant assimilation. E.g., penk^we ◇ k^wink^we Reciprocal assimilation- If there is a mutual influence between the two phonemes it is known as reciprocal assimilation. When such a change results in a single segment with some features of both components, it is known as coalescence or fusion. 11.18 Dissimilation- If the sounds undergoing the changes become less similar to each other it is known as dissimilation. This can apply to sounds that were originally identical, or sounds that were originally similar. In general, dissimilation refers to a process of two things becoming increasingly dissimilar. One popular example for describing this process is where various words in English, such as 'marble', take on an 'l' sound, where for instance, the original French word was 'marbre'. Gemination- It refers to the change which produces a sequence of two identical consonants from a single starting consonant. For example: osaa "he/she knows" becomes ossaa "he/she knows" (Finnish). De-Gemination- when a sequence of two identical consonants is reduced to a single occurrence. As in 'immature' the double /m/ in the spelling is pronounced as a single /m/. Lengthening – It refers to the change in which some sounds usually vowels are lengthened in some context. For example: balk 'brother-in-law' becomes ba:l:k 'brother-in-law' (Q'eqchi) Shortening- It refers to the change in which some sounds usually vowels are shortened in some context. Ablaut/Apophony- It refers to the alteration of sounds within a word that indicates grammatical information. For example: drink, drank, drunk.

4.5.11 Word Formation processes

- a.) **Compounding:** It is the process of word formation that involves the combination of two complete already existing word forms into a single compound. The category of the entire compound is determined by its head. Endocentric and exocentric are the terms used to describe semantically headed and semantically non-headed compounds respectively.
- b.) **Endocentric compounds:** If AB is a compound of A and B, in endocentric compounds, AB is an instance of B. In this type of compounds the final element serves as the head of the compound and the remaining elements provide additional information. The head determines the basic syntactic or semantic category of the compound. The non-head stem, in endocentric compounds specifies a subcategory of the referents denoted by the head of the compound. For example: Chess table (a type of table), sky blue (a shade of blue). Exocentric compounds: In this type of compounds AB is neither A nor B but a C somehow that is associated with A and B. Exocentric compounds do not have an overt semantic head. For example: Pickpocket (It is not related to pocket in any sense but it is a thief who steals from others pocket).

- c.) **Copulative Compounds:** In this type of compounds AB is A and B. Both A and B share the same status. They are written with a hyphen. Copulative compounds are also known as coordinative (dvandva) compounds. For example: producer-director.
- d.) **Clipping:** It is the word formation process which refers to the reduction of a word to one of its parts. For example: gas (gasoline). Clipping can be of four types.
- e.) **Back clipping/Apocopation:** here the initial part of the word is retained and the final part of the word is deleted. For example: exam (examination).
- f.) **Fore clipping:** It refers to the phenomenon in which the initial part of the word is deleted and the final part is retained. For example: phone (telephone).
- g.) **Middle clipping:** here the middle part of the word is retained. For example: flu (influenza).
- h.) **Complex clipping:** here one part of the original compound remains intact. For example: cablegram (cable telegram).
- i.) **Blending:** It is a word formation process in which a new word is formed by combining parts of two other words where the meaning of the new word is a combination of the meaning of the two words. For example: 'smog' derived from 'smoke' and 'fog' and contains meaning of both the words, 'brunch' (breakfast+lunch), 'motel' (motor+ hotel), 'newscast' (news+ broadcast).
- j.) **Backformation:** It is a process in which new words are formed by the removal of what looks like a typical affix in the language. For example: edit from editor, donate-donation, babysitter-babysit.
- k.) **Coining:** It is the invention of new words. For example: Xerox, Nylon.
- l.) **Acronyms:** These are the words created from the initial letters of several words or word parts in a phrase or name. The pronunciation of the words differs from the full forms for which they stand. For example: radar, UNO, TOEFL, NASA, AIDS.
- m.) **Borrowing:** It is the process in which new words are taken from some other language. The terms that are borrowed is known as loan words. For example: 'piano' is a borrowed term from Italian language.
- n.) **Derivation:** It is the process of forming new words from already existing ones by the addition of affixes. The derived word may not be in the same category of the

root and it will be semantically distinct from the root. For example: establishment from establish.

- o.) Conversion:** It is the process of word formation in which a new word is created from an already existing word without any change in the form. The category of the word is changed keeping the form same. For example: the adjective clean is converted to the verb clean, (verb) to hit – (noun) a hit, (noun) a sign – (verb) to sign.
- p.) Incorporation:** It is the phenomenon in which a word usually a verb or preposition is compounded with another element typically a noun, pronoun or adverb. For example: babysit.
- q.) Eponyms:** A person after whom a discovery, invention, place, etc., is named for example: Cook Islands (James Cook).

4.5.12 Reduplication

It is the process of formation of new words either by doubling the entire word or only a part of the word. Full reduplication happens when the exact repetition of a sound or word takes place whereas partial reduplication involves constant ablaut or vowel alteration. For example: gin 'ourselves' – ginging 'we to us', so-so, bye-bye, hotch-potch, zig-zag.

4.5.13 Lexical Morphology

The lexical Morphology and Phonology model was introduced by Paul Kiparsky and K.P Mohanan. It involves the treatment of language with a symbiotic relationship between morphological and phonological rules. The central principle of lexical morphology is that the morphological component of the grammar is organized in a series of hierarchical strata. The English affixes are classified into two broad classes on the basis of their phonological behaviour. Affixes that do not result in any phonological variation on the base to which they are attached are called neutral affix. For example: -less, -ness. The affixes that cause an effect on the segmental and supra-segmental structure of the base to which they are attached are called the non-neutral affix. For example: -ec, -ee. The basic principle of lexical morphological model is the level-ordering hypothesis. It is assumed that the affixes are added to the base at different strata or levels and each stratum has associated with it a set of morphological rules that do the word building.

Auxiliation: It is the process of development of lexical items into auxiliaries.

4.6 LET US SUM UP

This module introduces several concepts that are basic to morphology. The different notions of word: the lexeme ('abstract, dictionary word'), the word-form ('concrete word') and the various word formation processes. It discusses about the various

morphophonemic processes that take place when a morpheme is attached to a word and it alters the phonetic environment of other morphemes in that. Inflectional morphology describes the relationship between the word-forms in a lexeme's paradigm, and derivational morphology describes the relation between lexemes. Complex words can often be segmented into morphemes, which are called affixes when they are short and affixes can be further divided based on their position in a word. They have an abstract meaning, and cannot stand alone, and roots when they are longer and have a more concrete meaning. When two or more morphemes express the same meaning and occur in complementary distribution, they are often considered allomorphs.

4.7 CHECK YOUR PROGRESS

1. What are the Classification of Morphemes?

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

2. What do you mean by bound morpheme?

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

3. What do you mean by Derivational morpheme?

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

.....
.....

4. What do you mean by Portmanteau morpheme?

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

5. What do you mean by Clitics?

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

4.8 SUGGESTED READINGS

Matthews, Peter. 1991. Morphology. (2nd ED.) Cambridge: Cambridge University Press. Nida, Eugene, A. 1949. Morphology: A Descriptive Analysis of Words. (2nd ED.), Ann Arbor: UMP. Spencer. Andrew.1991. Morphological Theory: An Introduction to word structure in a Generative Grammar. Oxford: Blackwell.

UNIT-5 WORD FORMATION IN ENGLISH

Structure

- 5.0 Objective
- 5.1 Introduction
- 5.2 Definition
- 5.3 History Of Word Formation
 - 5.3.1 Birth And Death Rates Of Words
 - 5.3.2 Processes Of Word-Formation
- 5.4 Bound Morpheme, Free Morpheme And Bound Roots
- 5.5 Acronyms
- 5.6 Complex Words
- 5.7 Productive And Unproductive Affixes
- 5.8 Productivity And Formation Of Words
- 5.9 Active And Passive Words
- 5.10 Complex Words
- 5.11 Theoretical Issues: Modeling Word-Formation
- 5.12 Let Us Sum Up
- 5.13 Check Your Progress

5.0 OBJECTIVE

After reading this unit learners would be able to know about the existence of words is usually taken for granted by the speakers of a language. To speak and understand a language means - among many other things - knowing the words of that language. The average speaker knows thousands of words, and new words enter our minds and our language on a daily basis.

This unit is about words. More specifically,

- It deals with the internal structure of complex words, i.e. words that are composed of more than one meaningful element. Take, for example, the very word meaningful, which could be argued to consist of two elements, meaning and -ful, or even three, mean, -ing, and - ful.
- We will address the question of how such words are related to other words and how the language allows speakers to create new words. For example, meaningful seems to be clearly related to colorful, but perhaps less so to awful or plentiful.
- And, given that meaningful may be paraphrased as ‘having (a definite) meaning’, and colorful as ‘having (bright or many different) colors’, we could ask whether it is also possible to create the word coffeeful, meaning ‘having

coffee'. Under the assumption that language is a rule-governed system, it should be possible to find meaningful answers to such questions

5.1 INTRODUCTION

It has been estimated that average speakers of a language know from 45,000 to 60,000 words. This means that we as speakers must have stored these words somewhere in our heads, our so-called mental lexicon. But what exactly is it that we have stored? What do we mean when we speak of 'words'? In non-technical every-day talk, we speak about 'words' without ever thinking that this could be a problematic notion. In this section we will see that, perhaps contra our first intuitive feeling, the 'word' as a linguistic unit deserves some attention, because it is not as straightforward as one might expect. If you had to define what a word is, you might first think of the word as a unit in the writing system, the so-called orthographic word. You could say, for example, that a word is an uninterrupted string of letters which is preceded by a blank space and followed either by a blank space or a punctuation mark. In traditional grammar, words are the basic units of analysis. Grammarians classify words according to their parts of speech and identify and list the forms that words can show up in. Words are the main units used for entries in dictionaries. In fact Words are potentially complex units, composed of even more basic units, called morphemes. A morpheme is the smallest part of a word that has grammatical function or meaning.

5.2 DEFINITION

'In linguistics (particularly morphology and lexicology), word formation refers to the ways in which new words are made on the basis of other words or morphemes. Also called derivational morphology. Word-formation can denote either a state or a process, and it can be viewed either diachronically (through different periods in history) or synchronically (at one particular period in time) Most English vocabulary arises by making new lexemes out of old ones—either by adding an affix to previously existing forms, altering their word class, or combining them to produce compounds. These processes of construction are of interest to grammarians as well as lexicologists But the importance of word-formation to the development of the lexicon is second to none After all, almost any lexeme, whether Anglo-Saxon or foreign, can be given an affix, change its word class, or help make a compound. Alongside the Anglo-Saxon root in kingly, for example, we have the French root in royally and the Latin root in regally. There is no elitism here. The processes of affixation, conversion, and compounding are all great levellers."(David Crystal, *The Cambridge Encyclopedia of the English Language*, 2nd ed. Cambridge University Press, 2003)

5.3 HISTORY OF WORD FORMATION

Following years of complete or partial neglect of issues concerning word formation (by which we mean primarily derivation, compounding, and conversion), the year

1960 marked a revival—some might even say a resurrection—of this important field of linguistic study. As a result, a large number of seminal works emerged over the next decades, making the scope of wordformation research broader and deeper, thus contributing to better understanding of this exciting area of human language."

5.3.1 Birth and Death Rates of Words

"Just as a new species can be born into an environment, a word can emerge in a language. Evolutionary selection laws can apply pressure on the sustainability of new words since there are limited resources (topics, books, etc.) for the use of words. Along the same lines, old words can be driven to extinction when cultural and technological factors limit the use of a word, in analogy to the environmental factors that can change the survival capacity of a living species by altering its ability to survive and reproduce." (Alexander M. Petersen, Joel Tenenbaum, Shlomo Havlin, and H. Eugene Stanley, "Statistical Laws Governing Fluctuations in Word Use from Word Birth to Word Death." *Scientific Reports*, March 15.

5.3.2 Processes of Word-Formation

As the term 'word-formation' suggests, we are dealing with the formation of words, but what does that mean? Let us look at a number of words that fall into the domain of word-formation and a number of words that do not. "Apart from the processes that attach something to a base (affixation) and processes that do not alter the base (conversion), there are processes involving the deletion of material . . . English Christian names, for example, can be shortened by deleting parts of the base word. This type of word formation is called truncation, with the term clipping also being used. Sometimes truncation and affixation can occur together, as with formations expressing intimacy or smallness, so-called diminutives. We also find so-called blends, which are amalgamations of parts of different words, such as smog (-smoke/fog) or modem (modulator/demodulator).

5.4 BOUND MORPHEME, FREE MORPHEME AND BOUND ROOTS

As we can see from the complex words some morphemes can occur only if attached to some other morpheme(s). Such morphemes are called bound morphemes, in contrast to free morphemes, which do occur on their own. Some bound morphemes, for example un-, must always be attached before the central meaningful element of the word, the so-called root, stem or base, whereas other bound morphemes, such as -ity, -ness, or -less, must follow the root. Using Latin-influenced terminology, un- is called a prefix, -ity a suffix, with affix being the cover term for all bound morphemes that attach to roots. Note that there are also bound roots, i.e. roots that only occur in combination with some other bound morpheme. Examples of bound roots are often of Latin origin, e.g. later- (as in combination with the adjectival suffix -al), circul- (as in circulate, circulation, circulatory, circular), approb- (as in approbate, approbation, approbatory, approbator), simul- (as in simulant, simulate, simulation), but occasional native bound roots can also be found (e.g. hap-, as in hapless).

5.5 ACRONYMS

“Blends based on orthography are called acronyms, which are coined by combining the initial letters of compounds or phrases into a pronounceable new word (NATO, UNESCO, etc.). Simple abbreviations like UK or USA are also quite common.” (Ingo Plag, *Word-Formation in English*. Cambridge University Press,

5.6 COMPLEX WORDS

Sometimes new complex words are derived without an existing word formation rule, but formed on the basis of a single (or very few) model words. For example, ear-witness ‘someone who has heard a crime being committed’ was coined on the basis of eyewitness, cheeseburger on the basis of hamburger, and air-sick on the basis of seasick. The process by which these words came into being is called analogy, which can be modelled as proportional relation between words employee VS neighbour. In columns we find words that are obviously composed by putting together smaller elements to form larger words with more complex meanings. We can say that we are dealing with morphologically complex words. For example, employee can be analysed as being composed of the verb employ and the ending -ee. We can thus decompose complex words into their smallest meaningful units. These units are called morphemes. On the other hand the words like neighbour cannot be decomposed into smaller meaningful units, they consist of only one morpheme, and they are monomorphemic. Neighbour, for example, is not composed of neighb- and -or, although the word looks rather similar to a word such as inventor. Inventor (‘someone who invents (something)’) is decomposable into two morphemes, because both invent- and -or are meaningful elements, whereas neither neighb- nor -or carry any meaning in neighbor (a neighbor is not someone who neighbors, whatever that may be).

5.7 PRODUCTIVE AND UNPRODUCTIVE AFFIXES

Some affixes are often used to create new words, whereas others are less often used, or not used at all for this purpose. The property of an affix to be used to coin new complex words is referred to as the productivity of that affix. Not all affixes possess this property to the same degree, some affixes do not possess it at all. For example, we KNOW that nominal -th (as in length) can only attach to a small number of specified words, but cannot attach to any other words beyond that set. This suffix can therefore be considered unproductive. Even among affixes that can in principle be used to coin new words, there seem to be some that are more productive than others. For example, the suffix -ness (as cuteness) gives rise to many more new words than, for example, the suffix -ish (as in apish). The obvious question now is which mechanisms.

5.8 PRODUCTIVITY AND FORMATION OF WORDS

Possible, or potential word Intuitively, the notion of productivity must make reference to the speaker's ability to form new words and to the conditions the language system imposes on new words. This brings us to a central distinction in morphology, the one between 'possible' (or 'potential') and 'actual' words. A possible, or potential, word can be defined as a word whose semantic, morphological or phonological structure is in accordance with the rules and regularities of the language. It is obvious that before one can assign the status of 'possible word' to a given form, these rules and regularities need to be stated as clearly as possible. It is equally clear that very often, the status of a word as possible is uncontroversial. For example, it seems that all transitive verbs can be turned into adjectives by the attachment of -able. Thus, affordable, readable, manageable are all possible words. Notably, these forms are also semantically transparent, i.e. their meaning is predictable on the basis of the word-formation rule according to which they have been formed. Predictability of meaning is therefore another property of potential words. In the case of the potential words affordable, readable, manageable, these words are also actual words, because they have already been coined and used by speakers. But not all possible words are existing words, because, to use again the example of -able, the speakers of English have not coined -able derivatives on the basis of each and every transitive verb of English. For instance, take the word CANNIBALIZABLE that is not an existing word, in the sense that it is used by the speakers of English. However, it is a possible word of English because it is in accordance with the rules of English word-formation, and if speakers had a practical application for it they could happily use it. Having clarified the notion of possible word, we can turn to the question of what an actual (or existing) word is. A loose definition would simply say that actual words are those words that are in use. However, when can we consider a word as being 'in use'? Does it mean that some speaker has observed it being used somewhere or that the majority of the speech community is familiar with it? Or that it is listed in dictionaries?

5.9 ACTIVE AND PASSIVE WORDS

ALL speakers know the same words is not a possibility, i.e. the mental lexicon of one speaker is never completely identical to any other speaker's mental lexicon. Furthermore, it is even not completely clear when we can say that a given word is 'known' by a speaker, or 'listed' in her mental lexicon. For example, we know that the more frequent a word is the more easily we can memorize it and retrieve it later from our lexicon. This entails, however, that 'knowledge of a word' is a gradual notion, and that we know some words better than others. Note that this is also the underlying assumption in foreign language learning where there is often a distinction made between the so-called 'active' and 'passive' vocabulary. The active vocabulary obviously consists of words that we know 'better' than those that constitute our passive vocabulary. The same distinction holds for native speakers, who also actively use only a subset of the words that they are familiar with. Another instance of graded

knowledge of words is the fact that, even as native speakers, we often only know that we have heard or read a certain word before, but do not know what it means.

5.10 COMPLEX WORDS

In the lexicon Idiosyncratic complex words must be stored in the mental lexicon, because they cannot be derived on the basis of rules. But what about complex words that are completely regular, i.e. words that are in complete accordance with the word formation rule on the basis of which they are formed? There are different models of the mental lexicon conceivable. In some approaches to morphology the lexicon is seen “like a prison – it contains only the lawless” (Di Sciullo and Williams 1987:3). In this view the lexicon would contain only information which is not predictable, which means that in this type of lexicon only simplex words, roots, and affixes would have a place, but no regular complex words. This is also the principle that is applied to regular dictionaries, which, for example, do not list regular past tense forms of verbs, because these can be generated by rule and need not be listed. The question is, however, whether our brain really follows the organizational principles established by dictionary makers. There is growing psycholinguistic evidence that it does not and that both simplex and complex words, regular and idiosyncratic, can be listed in the lexicon (in addition to the word formation rules and redundancy rules that relate words to one another).

5.11 THEORETICAL ISSUES: MODELING WORD-FORMATION

Why theory? Haven't we so far rather successfully dealt? The answer is clearly 'no'. Whenever we had to solve an empirical problem, i.e. to explain an observation with regard to complex words, we had to make recourse to theoretical notions such as 'word', 'affix', 'rule', 'alternation', 'prosody', 'head' etc. In other words, during our journey through the realm of complex words, we tacitly developed a theory of word formation without ever addressing explicitly the question of how our theoretical bits and pieces may fit together to form an overall theory of word-formation. But what is a theory? In a more restricted sense a certain theory is a “hypothetical entity or structure explaining or relating an observed set of facts” (Webster's Third, s. v. theory). Thus, a morphological theory would help us not only to understand observed (and yet unobserved) facts concerning complex words, but would also help us to develop hypotheses in order to arrive at general principles of word-formation. In very general terms a theory can help us to understand the world (better). This is also the idea behind the saying that there is nothing as practical as a good theory. The first of these problems is the interaction of phonology and morphology, the second the form and nature of word-formation rules. Let us examine the theory of 'lexical phonology', which tries to explain the relationship between phonology and morphology in a principled fashion. Alternative theories: We have frequently seen that any given affix or morphological process comes with its particular phonological, morphological, semantic and syntactic properties. Plag (1996, 1999) shows that these diverse

properties together are responsible for the possible and impossible combinations of a given affix both with roots and with other affixes. What has been analyzed as would-be stratal behavior automatically falls out from the phonological, morphological and semantic properties of the affix. Since these properties must be stated anyway to account for the particular behavior of a given affix, no further stratal apparatus is necessary. Plag (1996, 1999) also incorporates the idea of base-driven suffixation to explain apparent idiosyncrasies in suffix combinations. The idea of base-driven restrictions in suffixation is that it is not only a given suffix that requires, or 'selects', a certain kind of base, but that bases, in particular bases that contain certain suffixes, may select a certain kind of affix. For illustration of this idea, consider the deverbal suffixes in (4), which, according to Fabb (1988), do not attach to any suffixed word (this would be an affix-driven restriction): (4) deverbal nominal suffixes not attaching to an already suffixed word -age (as in steerage) -al (as in betrayal) -ance (as in annoyance) -ment (as in containment) -y (as in assembly) Why should these suffixes behave in this way? And is this a property that has to be stated in the lexical entry of each of the nominal suffixes? In an approach that only looks at the question of which kinds of base a given affix selects this would be essential. Let us call such an approach 'affix-driven'. It is, however, possible to look at the problem from a different angle, i.e. from the perspective of the base Theory of Word-based morphology: The theory of word-based morphology in generative grammar originated in Aronoff (1976). In this theory, affixes do not have an independent existence and do not have entries in the lexicon, only words do. And what is analyzed as a constituent morpheme in morpheme-based morphology is conceptualized as a particular phonological and semantic similarity between sets of words in word-based morphology. Thus, word-based morphology expresses the relationship between morphologically related words not by splitting up words into their components but by formalizing the common features of sets of words. .

5.12 LET US SUM UP

We can summarize this module in the words of Alexander Onysko and Sascha Michel - "[R]ecent voices stressing the importance of investigating word formation in the light of cognitive processes can be interpreted from two general perspectives. First of all, they indicate that a structural approach to the architecture of words and a cognitive view are not incompatible. On the contrary, both perspectives try to work out regularities in language. What sets them apart is the basic vision of how language is encapsulated in the mind and the ensuing choice of terminology in the description of the processes. . . . [C]ognitive linguistics concedes closely to the self-organizing nature of humans and their language, whereas generative-structuralist perspectives represent external boundaries as given in the institutionalized order of human interaction."

5.13 CHECK YOUR PROGRESS

1. What do you mean by Bound Morpheme?

.....
.....
.....
.....
.....
.....

5. What do you mean by Productive and unproductive Affixes?

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....