COURSE CODE: MAEGD 201

COURSE NAME: ASPECTS OF LANGUAGE

CENTRE FOR DISTANCE AND ONLINE EDUCATION
TEZPUR UNIVERSITY

MASTER OF ARTS

ENGLISH

BLOCK I

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MAEGD-201: ASPECTS OF LANGUAGE

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BLOCK I

MODULE I: LANGUAGE AS A VEHICLE OF RATIONAL THOUGHT	**UNIT 1: HUMAN AND ANIMAL COMMUNICATION – DESIGN FEATURES OF LANGUAGE – LANGUAGE AS A SYMBOLIC REPRESENTATION OF THE WORLD**
	UNIT 2: LANGUAGE AS A SITE OF CONFLICT BETWEEN REPRESENTATIONS OF THE SAME WORLD - LANGUAGE AS A VEHICLE OF RATIONAL THOUGHT AND IMAGINATION RATHER THAN A MEANS OF COMMUNICATION.
MODULE II: THE MAKING OF LANGUAGE	**UNIT 3: LANGUAGE AS A NATURAL OBJECT AND CONTEMPORARY DEBATES: CHOMSKY'S THEORY OF UNIVERSAL GRAMMAR – THE METAPHOR-BASED APPROACH TO LANGUAGE.**
MODULE III: INTRODUCTORY PHONETICS, PHONOLOGY, AND MORPHOLOGY	**UNIT 4: INTRODUCTORY PHONETICS AND PHONOLOGY: SPEECH SOUNDS OF WORLD LANGUAGES – SUPRASEGMENTAL FEATURES – THE VALUE OF SOUNDS: PHONEMES AND ALLOPHONES.**
	UNIT 5: PHONOLOGICAL RULES – PHONOTACTIC CONSTRAINTS AND FOREIGN ACCENTS – IMPLICATIONAL LAWS – PRACTICE.
	UNIT 6: INTRODUCTORY MORPHOLOGY: WORDS AND WORDS FORMATION: THE NATURE OF LEXICON – MORPHOLOGICAL PROCESS – MORPHOLOGICAL TYPES OF LANGUAGES – THE HIERARCHICAL STRUCTURE OF DERIVED WORDS – MORPHOLOGICAL ANALYSIS

TABLE OF CONTENT

MODULE III: INTRODUCTORY PHONETICS, PHONOLOGY, AND MORPHOLOGY

UNIT 6: INTRODUCTORY MORPHOLOGY: WORDS AND WORDS FORMATION: THE NATURE OF LEXICON – MORPHOLOGICAL PROCESS – MORPHOLOGICAL TYPES OF LANGUAGES – THE HIERARCHICAL STRUCTURE OF DERIVED WORDS – MORPHOLOGICAL ANALYSIS

129-152

COURSE INTRODUCTION

This course is designed with a view to giving the students some idea about various aspects of language, man's principal means of thought and communication. The course comes in two Blocks, which are divided into a total of 7 Modules.

Module I, which consists of **Units 1 and 2**, explains how humans creatively use sounds to make a language and then symbols to visually represent those sounds. It also shows how language carries human concepts about the world; how they linguistically imagine a world better than the present world, which is beyond the capacity of animals. It thus also shows that language is a vehicle of rational thought and imagination rather than a means of communication and further that language may not be a prison house as the postmodernists claim; that it is rather a weapon of change in the hands of the human agent.

Module II, which consists of **Unit 3**, throws light on a major contemporary debate, i.e. whether language is a natural object or a human construct. Thus, it explains Chomsky's theory of Universal Grammar, which relates to Descartes' Rationalism, vis-a-vis the Metaphor-based approach to language, based on Experiencing Realism.

Module III consists of Units 4, 5, and 6. **Unit 4** explains the basics of Articulator Phonetics and thus explains the organs of speech and how they are used to produce sounds for language. It further introduces the IPA symbols and explains how words in a language are transcribed by using them. The Unit also discusses features like length, stress, tone, intonation as means for manipulating meaning. **Unit 5** explains the basics of Phonology and thus discusses the values of sounds and how they are patterned in different languages. Unit 6 throws light on the basics of Morphology and

thus explains the structure and formation of words and their syntactic behaviour. It also shows that in terms of word structure languages come in different types.

Module IV consists of Units 7 and 8. **Unit 7** introduces to the students a simplified version of Chomskyan syntax, based on his theory of Universal Grammar. It also discusses the three stages of development of the theory of constituent structure; word order typology and related issues. **Unit 8** deals with lexical and compositional semantics and thus discusses synonymy, antonymy, hyponymy, homophones and homographs, homonyms, polysemy, presupposition and entailment.

Module V consists of Units 9 and 10. **Unit 9** discusses three theories that are based on the assumption that language is no way separable from its use. It thus discusses the Speech Act theory as proposed by the philosopher J. L. Austen, the Cooperative Principle as proposed by the philosopher Paul Grice, and the theory of Linguistic Politeness as first theorized by the linguisits Penelope Brown and Stephen Levinson. **Unit 10** is on the relation between language and thought and thus discusses the Sapir-Whorf Hypothesis and some related issues.

Module VI has **Unit 11**, which discusses the English language from a historical perspective. It thus tries to trace the origins of the language and presents an account of the changes it has undergone over the ages.

Module VII consists of Units 12, 13, 14. **Units 12 and 13** discuss the functional categories of a sentence, i.e. subject, object, complement, and adjunct, which are formally nouns or noun phrases; adjectives or adjective phrases; and verbs or verb phrases. The Units thus also discuss their structure and the different functions they have within a sentence. **Unit 14** discusses the structure of modern English in light of the discussion in the preceding Units.

This paper is divided into three Blocks which will enable the learners to gain comprehensive knowledge of the topics discussed.

Block I consists of Module I, II and III.

Block II covers Module IV and V, and

Block III shall have VI and VII

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MODULE I: LANGUAGE AS VEHICLE OF RATIONAL THOUGHT

UNIT 1: HUMAN AND ANIMAL COMMUNICATION – DESIGN FEATURES OF LANGUAGE – LANGUAGE AS A SYMBOLIC REPRESENTATION OF THE WORLD

UNIT STRUCTURE

1.0 INTRODUCTION

Language, which is man's principal means for expressing thought, is basically vocal, i.e. words are sentences are basically spoken. A language thus can exist even if it is not written. In fact, most of the languages of the world are spoken, not written. Thus, language is made of a small set of sounds, technically known as *phonemes*, which humans produce with their vocal tract. Phonemes, which are either vowels or consonants, are then combined in various ways to produce a large number of sounds, which are called *words*. Words, in turn, are combined in different ways to arrive at what we call *sentences*. When a language has an *alphabet*, i.e. a set of symbols that visually represent the phonemes, we can write the language.

Like humans animals also use sounds to communicate, but like humans they cannot creatively use these sounds. This is one reason why language is radically different from animal communication.

1.1 LEARNING OBJECTIVES

At the end of this Unit you should have a clear idea of the following:

- How humans creatively use sounds to make a language
- How humans visually represent these sounds and make a written language
- How human language is radically different from animal communication

1.2 HUMAN AND ANIMAL COMMUNICATION

Language is the principal means with which humans as social beings communicate with each other; it is the means with which they think and imagine and talk about the world around them. Animals too, like humans, have their own communicative systems, but language, i.e. the human communication system, fundamentally differs from its animal counterpart. Thus, René Descartes (1596-1650), the 17th century French philosopher, wrote: 'Thanks to Language, Man becomes Man.'

In a series of articles written around 1960, the linguist Charles Hockett (1960: 88-96) attempted todescribe the basic characteristics or the design features of human language, which distinguish it fromanimal communication. Some ofthese design features are: open-endedness, duality of pattering, arbitrariness, stimulus-freedom, and displacement. These have been dealt with as part of the following general discussion on the unique phenomenon called language.

1.2.1 Language is vocal

Language is *basically* vocal (note that most of the people of the world are illiterate). Thus, a word of a language is basically a sound. Now, a sound is heard, not seen. But such a sound can be orthographically, i.e. visually, represented. Languages use letters for this. Thus, *cat* is a visual representation of a particular sound used in English (letters used in *cat* are *c*, *a*, and *t*).

Now, a word, a sound unit, is often a combination of some smaller sound units which cannot be further divided. Technically such a sound unit is called *phoneme.* Thus, the

word *cat*, for example, is a combination of three phonemes, which are visually represented by the letters *c*, *a*, and *t*. By way of another example, the word, *rough*, is made of three phonemes, which are visually represented by the letters, *r*, *ou*, and *gh.*

On the other hand, sentences are combinations of words and they are thus strings of sounds.

1.2.2 Open-endedness

As a matter of fact, every language has a small set of phonemes and the words are various combinations of these phonemes[1]. Thus from a limited input we arrive at an unlimited output. For instance, the standard dialect of British English has 44 phonemes, but the sounds that have been produced in English till today in the form of words and sentences are rather unlimited in number.[2] Thus, **open-endedness** is one of the **design features** of language.

Phonemes are basically of two kinds: consonant and vowels. Phonemes are sounds in production of which the air from lungs is restricted inside the mouth in various ways are called *consonants*; by contrast the air is not restricted in production of *vowel*s. Thus, for instance, the first and the last phonemes

[1] The number of phonemes in particular languages varies considerably, from a minimum of ten to a maximum of more than 140. The average number seems to be around twenty-five to thirty.

[2] Note that all numbers (e.g. 2197099; 8674523; 52450) are various combinations of only 10 basic digits. In the same way all the sounds human make in the form of words or sentences are finally various combinations of a small number of phonemes. As a matter of fact, this is a universal principle: various things of the world are made of a small set of basic elements. Thus there are, for instance, carbon and iron in the human body, a dog, or a plant. (This is not, however, not to say that the whole is just a *mechanical* assembly of parts).

of the sound as represented by *tough*[3]are consonants; and the phoneme sandwiched between them is a vowel.

1.2.3 Duality of patterning

Thus, phonemes have a second pattering which is realized as words and sentences. **Duality of patterning,** which makes a language open-ended, is thus yet another design feature of language.

Like humans, animals too use sounds to refer to the world. For example, cats use 7 different sounds to convey 7 basic messages (anger; fear; pain; wanting attention; asking another cat to follow; inoffensiveness; ready to kill). But they do not know how to combine them and create new sounds totalk *more* about the world[4]. As a matter of fact, animal existence fundamentally differs from human existence: while animals only *exist* in the world, humans *live* in it with an ever increasing knowledge about the world and themselves. Human thus must have a large number of sounds; they cannot live with just 7 or 10 sounds[5]. The animal communication systems, which are without a duality of patterning, are thus not open-ended, unlike language.

1.3 ORTHOGRAPHIC REPRESENTATION OF SOUNDSAND ALPHABET

[3] Note that in the word *phone* there are 5 letters, but only 3 phonemes.

[4] For instance, a cow produces the sound "haambaah", which is made of 3 consonant sounds and 1 vowel sound; but it cannot create from them, for instance, "baahbaah……aam!".

[5]Thus, the philosopher Ludwig Wittgenstein's (1889-1951) remarked: "The limit of my language means the limit of my world."

As noted, words, which are basically sounds, can be *orthographically*, i.e. visually, represented with signs. This is writing a language. In other words, a language may have a set of signs to visually represent the set of phonemes it uses. Such signs are called *letters* and they together constitute an *alphabet*. English, for example, uses 26 letters to visually represent, i.e. write the words and sentences of the language. Thus, the sentence *A cat is mewing outside*, for example, is the visual representation of a string of sounds produced to mean a particular phenomenon where a cat is mewing outside. However, most languages of the world are not written, for they do not yet have an *alphabet*.

1.3.1 More phonemes less letters/Less phonemes more letters

In most cases the total number of letters in an alphabet of a language is not equal to the number of phonemes in that language. For instance, in the standard dialect of BritishEnglish there are 44 phonemes (24 of these phonemes are consonants; the rest 20 are vowels); but its alphabet has only 26 letters. 21 of these represent the 24 consonant phonemes (as they represent consonants sounds they are usually called *consonants*); the rest 5 represent the 20 vowel phonemes (as they represent vowel sounds, they a usually called *vowels*)[6]. Thus, in English one letter often represents more than one sound. For example, the vowel *a* represents five different vowel sounds in *about*,*ant*, *father*, *all*, *gate*. In other words, English does not have five different letters to represent these five different phonemes.

[6] Note that the words *consonant* and *vowel* primarily mean the two different kinds of sounds (i.e. phonemes). But these terms are also used to mean the letters of an alphabet, because they represent the consonant and the vowel sounds.

In the opposite direction, in the case of a language like Assamese the number of letters it has in its alphabet is more than the number of phonemes it has. For instance, Assamese does not have a short-long contrast in vowel sounds. Thus, the first sounds of the Assamese words for 'brick' and 'Id' are pronounced in the same way. Yet they are orthographically represented by two different letters - one is called *the hashraee*; the other *the dirghaee* (where *hashra*means 'short'; *dirgha*'long').

1.3.2. Why are spellings often problematic?

In most languages spellings are problematic, because there is no one-to-one correspondence between the phonemes and the letters. Thus, in English, for instance, the same letter may represent two different sounds or phonemes as *t*does in *neuter* and *future.* In the opposite direction, the same phoneme may be represented by two different letters. For instance, the words *cat* and *kite* begin with the same phoneme, but they are represented by two different letters, i.e. *c* and *k.* And then there are cases where letters may not represent any phoneme at all as the letter *p* does not in *psychology.*

1.3.3 Phonetic alphabet

As noted, (the standard dialect of British) English uses 44 phonemes, but the language has only 26 letters in its alphabet. Now, can we devise a new alphabet for English which will have 44 letters to represent the 44 phonemes it uses? Also each of these letters will represent *only one and the same* phoneme in all contexts. In other words, the letters of these alphabets will have a one-to-one correspondence with the

phonemes they will represent. Such an alphabet is called a *phoneticalphabet.*

A standard dictionary of English, as you might already be knowing, uses such an alphabet along with the ordinary alphabet to spell the words. Note that words spelt with the letters of the phonetic alphabet are called *transcription.* Thus, for example, the phonetic spelling (i.e. transcription) of the word *cat* is *kæt.*

Note that the letters of the phonetic alphabet are often called the *phonetic symbols.* Many phonetic symbols are, however, borrowed from the ordinary alphabet. Thus, for instance, *k* and *t* appearing in the phonetic spelling *kæt*are borrowed from the ordinary English alphabet, but not *æ*.

As noted, the vowel letter*a*representing five different vowel sounds (i.e. vowel phonemes) in the words *about*, *ant*, *father*, *all*, *gate*. The phonetic symbols of these five different vowel phonemes are ***ə***(about); **æ**(ant);**ɑ:** (father); **ɔ:** (all); ***eɪ***(gate). Note that none of these occur in the ordinary English alphabet.

The English Ordinary Alphabet

(26 letters)

Consonant letters: b c d f g h j k l m n o p q r s t u v w y z

Vowel letters: a e i o u

The English Phonetic Alphabet

(44 letters or 44 phonetic symbols)

Consonant sounds: p b t d k g tʃdʒf v θð s z ʃ ʒ h m n ŋ l r j w

Vowel sounds: ɪ iː e æ ɜː ʌ ɑː ɒ ɔː ʊ uː ə eɪaɪɔɪəʊaʊɪəeəʊə

1.3.4. The Ghoti Phenomenon

The famous Irish playwright George Bernard Shaw (1856-1950) highlighted the illogicality of English spelling by proposing the spelling *ghoti*for*fish*!The letter *f* and the consonant cluster *gh*often represents the same sound (i.e. phoneme). This is clear from words like *fish* and *laugh.* Thus, *fish* can be respelled as *ghish.* Then, the sound represented by the letter *i*in*fish*is also sometimes represented by the letter *o* as in *w**o**men*. Thus, *fish* can be respelled as *ghosh.* Now, the sound that *sh*represents in *fish* is also often represented by the consonant cluster *ti*as in *sta**ti**on.* Thus, *fish* can be spelled also as *ghoti*(*fish* – >*ghish* –>*ghosh* –>*ghoti*)!

1.3 SOUNDS USED IN LANGUAGE ARE SYMBOLS

The sound represented by the English word *tiger* is a symbol referring to a particular kind of animal of the world. In the same way, the sound string represented by *They are dancing* is referring to a particular real life happening. Words or sentences, i.e. language, is thus a *symbolic construction* the world.

A picture, too, like a sound (or a string of sounds) used in language, represents the world. For example, the picture of a

table represents a real life table. But there is an obvious difference between the sound used in language and a picture. A picture is *iconic* while a sound used in language is *arbitrary*. A picture is iconic in the sense that it resembles its referent, i.e. what it refers to. A sound is, by contrast, arbitrary because it does not resemble its referent any way. The picture of a table, for example, is, thus an *icon*; the sound represented by the word *table* is a *symbol.* (Note that the written form of the sound, i.e. *table,*is also a symbol – it does not resemble its referent, i.e. it does not look like a table!).

1.4.1. Arbitrariness

The relation between a linguistic sign and the thing it refers to is arbitrary. That is, the choice of a sign (i.e. a sound or its visual representation) for a particular thing is not based on its form or function (i.e. how it looks like, what it does, and so on) The choice here is purely arbitrary. Thus, any sign can be or is used to refer to a particular thing. This is usually called *arbitrariness* of human language.

Note here also that arbitrariness is one reason as to why we have different languages. A thing can be referred to by any sign; so different linguistic communities use different signs to refer to the same thing. Thus, what is referred to by 'boy' in English, for instance, is referred to by 'lorā' in Assamese, and by 'chele' in Bangla.

What are the limitations and advantages of *icons* as means of referring to the world? One limitation is that abstract notions cannot be easily represented with icons, for example, time. How can we pictorially represent the past time of the reality as represented by the sentence *They were dancing the day before yesterday*?

Symbols (or arbitrariness of symbols, to put it another way) have thus freed humans from the constraints of icons or iconic representation of the world. In language, humans can use any sound it can produce to refer to anything in the world, be it concrete or abstract (thus past time is indicated by the sign *ed*in English as in *She danced with him yesterday*). Arbitrariness is also one reason why we have more than one language in the world: different speech communities use different sounds to refer to the same thing. As Shakespeare wrote:

What's in a name?

That which we call a rose by any other name would smell as sweet!

Thus, **arbitrariness** is another design feature of language.This particular design feature is present also inanimal communication. For instance, cows and dogs produce different sounds to mean the same experience of hunger.Oneproblem that arbitrariness creates is that speakers of two different languages may not understand each other even if they are talking about the same thing. This is, however, not the case with icons. Hence the use of icons rather than language in public signs, for example, a road sign written in English (e.g. "Speed breaker ahead") will not be possible for one to decode if she does not know English, but if the road sign is made iconic (i.e. if the speed breaker ahead is pictorially represented in the sign), then a human being speaking any language immediately knows what it means.

Thus, along with symbols humans also use icons to refer to the world.

Icon, index, and symbol

The American philosopher and mathematician Charles Sanders Pierce (1839-1914) categorized the signs that humans use to refer to the world into *icon*s, *index*es and *symbol*s. We have already defined *icon* and *symbol*. But what is an index? Smoke, for instance, is an index to fire. An index is thus a part of whole (i.e. smoke) referring to the whole (i.e. fire). Dishes, knives, and spoons are part of a meal so that they may be used to refer to a restaurant ahead (on a roadside sign, for instance). Thus, *index* is yet another way humans refer to the world.

1.4.2 Onomatopoeic words

Words such as *hiss* (e.g. *The snake is hissing*), *mew* (e.g. *The cat is mewing*) are, however, not arbitrary. Such words are called onomatopoeic words and they occur in every language; but they are very few in number – rather they may be called exceptions (note that when the English word *mew* is onomatopoeic, the word *bark* is not – it is arbitrary!).

1.4.3 Is grammar arbitrary or motivated?

A basic debate in modern linguistics is: Is grammar arbitrary or motivated (i.e. based on our understanding of the world)? For instance, a noun like *furniture*, although it refers to countable objects, cannot be numerically counted so that **I bought one furniture yesterday* is an ungrammatical sentence in English (cf. *I bought one chair yesterday*). According to one particular view, this (i.e. the noun *furniture* being numerically unquantifiable) is an arbitrary fact of grammar. But note that *furniture* refers to a group of heterogeneous objects and (as pointed out by the German mathematician,

logician and philosopher GottlobFrege (1848-192)) we do not count such objects (thus, we do not say **I bought three chairs and books yesterday*). Thus, on this view, grammar is not arbitrary, it is rather based on how we see and understand the world.

1.4 MORE ON THE DIFFERENCE BETWEEN LANGUAGE AND THE ANIMAL COMMUNICATION SYSTEMS

As noted, human communication is basically carried out by means of sounds. But animals communicate with a variety of nonvocal means besides sounds. Some such means are: light (fireflies); posture, gesture and facial expression (animals and birds); scent (insects and mammals); electricity (certain species of eels); colour (octopuses). Posture, gesture and facial expression are used by humans as well, but in the case of animal communication the vocal and nonvocalmodes are often combined in rather a complex way.

Different animal species have different number of basic sounds. For instance, a fox has over 30, a chicken around 20, a cow under 10, a cat 7. Dolphins gorillas and chimpanzees have between 20 to 30. A North American cicada has got only four signals to give only four fixed messages.

1.5.1 The Communication System of the Bees

As noted, with the design feature **duality of patterning**humans language is open-ended: humans combine sounds to produce an infinite number of sentences to talk about any topic they like.

The communication system of the bees is rather complex and sophisticated, yet there is no evidence that bees combine their dances to produce novel messages. The topic of bee

communication is also severely limited – they communicate only about food source.

By performing special body movements before other members of the hive (which is often called 'bee dancing'), the forager bee conveys information about the food source it has just discovered, i.e. its quality and its distance from the hive as well.

Distance is conveyed by one of three different dances performance on the wall or floor of the hive. The **round dance** is performed by circling repeatedly. It indicates a food source within five meters or so from the hive. The **sickle dance** is performed by dancing a curved figure and it indicates a food source from five to twenty meters from the hive. The **tail wagging dance** indicates distances further than twenty meters. In this dance, the bee waggles her body from side toside running in a semicircle restarting her dance where she began from.

The round dance does not communicate direction perhaps because the food source is very near the hive. The other two types of dance are used to indicate the direction of more distant food sources.

Quality of the food source is indicated by the vivacity of the dancing. As the food source is depleted, the dance is performed with less intensity and with less number of repetitions of the circling movements.

During its dancing, the returning bee is also supposed to support its information with evidence, i.e. it must provide samples from the food source, failing which it may be stung to death.

Nevertheless, as noted, bee communication fails to show creativity. For instance, bees do not have any signal to communicate the notion of up or down, and they are unable to produce one by combining the signals they have. To test this Karl von Frisch (1886-1982), the famous Austrian ethnologist, placed a hive of bees at the foot of a radio beacon, and a supply of sugar water at the top of it. The round dance was duly performed to indicate that the food source was very close to the hive, but the bees failed to find it out. Looking for the food source they flew for several hours in the directions except upwards, and then gave up the search.

1.5.2 The Bird Song

In the same way, **birds also have failed to give any evidence of creativity**. A bird song can be interpreted as acombination of some discrete units, and so there is a theoretical scope for combining them in an infinite number of ways in order to communicate about a multiplicity ofsituations, but as far as researchers can judge, bird songs are sung only to announce and delimit the territory of the male and to attract a mate. As Aitcheson (1989: 32) observes, 'A bird who appears to humans to be indulging in an operation aria on the pleasure of life is more likely to be warning other birds not to encroach on its own particular area of woodland.'

1.5.3 Non human primatesand language

Since the higher primates are close to genetic relatives of humans, it is natural to expect their vocal communication to resemble that of humans. Surprisingly, communication among the higher primates does not show much indication of creativity. Rather, the communication system of these animals is made up of a number of graded calls. It is not surprising that

apes appear to communicate largely about basic needs such as food and play, and expression of emotion. There is no evidence of recombining various sections of a message to form new messages. Nothing that parallels the phonemic or morphological recombination of human language has been discovered in the natural communication of non human primates.

1.5.4 Do animals have cognitive abilities?

It is obvious that animals cannot think at least the way humans think. This is, however, not to say that they do not have cognitive abilities at all. Some of them are quit intelligent. But these abilities do not grow in the absence of an open-ended means of thought like language.

1.6 SUMMING UP

In this Unit, we have seen that human language is basically vocal. Every human language has a finite set of phonemes, i.e. minimal sound units. The two basic types of phonemes are consonants and vowels. Phonemes have a second patterning, i.e. they are combined to form larger units of sounds called words, which in turn are combined to form sentences, which are yet larger sound units. This design feature of language is know as *duality of patterning*, which makes a language *open-ended*, a related yet another unique design feature of language. Like humans, animals too use sounds to refer to the world, but they are unable to combine them to create new sounds to talk *more* about the world; their communication system is severely limited. Thus, animal existence fundamentally differs from human existence.

We have also seen how sounds used in language are orthographically, i.e. visually, presented with letters, which constitute an alphabet. The English spelling system is problematic because it has only 26 letters to represent the 44 phonemes of the language. Thus, a standard dictionary of English uses the English *phonetic alphabet* (i.e. the alphabet that has 44 letters to represent those 44 phonemes) to spell the words, which is called *transcription.* The famous Irish playwright George Bernard Shaw highlighted the illogicality of English spelling by proposing the spelling *ghoti*for*fish*, which is often called *the Ghoti Phenomenon*.

Sounds (i.e. words and sentences) used in language are symbols. Unlike an *icon* (e.g. the picture of a table), a symbol (e.g. the word *table*) is arbitrary, i.e. it does not have to resemble its referent. Thus, different linguistic communities use different signs to refer to the same entity in the world. This is usually called *arbitrariness*, yet another design feature of human language. Humans use both symbols and icons to refer to the world, but language is essentially symbolic, not iconic. Apart from icons and symbols, humans also use *index*es, as pointed out by the American philosopher and mathematician Charles Sanders Pierce. Every language has a small number of *onomatopoeic words*, i.e. words that are not arbitrary (e.g. the English verb *mew*). However, a basic debate in modern linguistics is whether *grammar* is arbitrary or motivated, i.e. based on our sensuous experience or understanding of the world.

We have also seen that studies on the communication system of the bees, the bird songs, and the communication among higher primates have further established that human language fundamentally differs from animal communication.

1.8. ASSESSMENT QUESTIONS

1. How does language radically differ from animal communication?
2. How do you link duality of patterning with a *human* existence?
3. Does bee communication show displacement?
4. Show that the first letter of the English alphabet represents several distinct sounds in different contexts.
5. In what sense is the English spelling system illogical? What is the Ghoti phenomenon?
6. In what sense is language arbitrary? What is an onomatopoeic word?
7. What are the limitations and advantages of iconic representation of the world?
8. 'Language is basically a symbolic rather than an iconic representation of the world.' Explain in not more than 300 words.
9. How does a phonetic alphabet differ from an ordinary alphabet?
10. Do animals have cognitive abilities?

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JOT DOWN IMPORTANT POINTS

UNIT 2: LANGUAGE AS A SITE OF CONFLICT BETWEEN REPRESENTATIONS OF THE SAME WORLD - LANGUAGE AS A VEHICLE OF RATIONAL THOUGHT AND IMAGINATION RATHER THAN A MEANS OF COMMUNICATION.

UNIT STRUCTURE

2.0 INTRODUCTION

Humans do not carry the real world in their head, they carry instead the concepts or ideas they form about the world. On the other hand, language is a symbolic representation of these concepts. Thus, humans can talk about something of the world even when he is not experiencing it at the moment of speaking, i.e. the present. For example, he can say "I'm hungry" even if he's not hungry: in this case the sentence refers only to the concept of (being) hunger he has in mind. With the help of language, humans can thus talk about a reality which has no existence. This in turn implies that besides the present (i.e. what is being experienced), humans can linguistically construct the past (i.e. what has already been experienced) and the future (i.e. what is yet to be experienced,

or what we want to experience). While Past is popularly known as History, future is known as Literature, which gives us a world that is linguistic and imaginary, but better than the present and the past world.

Unlike humans, animals only sense the world; concept formation is beyond their capacity. Thus, animals, in sharp contrast to humans, live only in the immediate present of senses and they do not, therefore, have neither history, nor imagination or literature. The so-called postmodern thinkers, however, think that human concepts as carried by language hardly objectively reflect the real world so that humans can never arrive at truth, or, because of this, there is no truth, so to speak. On the opposite view, language is rather a site of conflict between different ideological positions on the same reality; it is, therefore, not just a vehicle of dominant ideas; it is also a weapon against them, a tool for reasoning for a better understanding of reality and hence a weapon of change as well.

2.1 LEARNING OBJECTIVES

At the end of this Unit you should have a clear idea of the following:

- How humans form concepts about the world and can, therefore, imagine a world better than the present world
- Why this is beyond the capacity of animals
- Language is a vehicle of rational thought and imagination rather than a means of communication

- Language may not be a prisonhouse as the postmodernists claim; it may rather be a weapon of change.

2.2 CONCEPT

As noted, language is a symbolic construction or representation of the world. This does not mean, however, that language *directly* refers to the world. What language immediately refers to is rather human concept or understanding of the world. Thus, the word *man*, for example,does not refer to any particular real world man: the word *man* refers rather to our idea or concept of a particular type of thing in the world[7]. Note that ideas or concepts are human creations and they exit only in the human mind. The real world, the real trees, for example, will continue to grow and exist in the world even humans do not form an idea about them and have the word *tree* or *gas* in Assamese.

Language and knowledge

One can pictorially represent something without knowing what it is. In other words, pictorial representation does not necessarily carry human knowledge of the world. But is this true of language? The word, *monkey*, for instance, is a representation of a particular reality (i.e. a particular kind of life form existing in the world). But note that the word *monkey* carries human knowledge of the world. The question is: is there any word in a language which does not carry such knowledge (like the picture mentioned above)? Again, does a proper name (e.g. *Kabir*) differ here from a common noun

[7] To use Ferdinand de Saussure's (1857-1913) terminology, what the *signifier* (i.e. sign or language) refers to, i.e. the *signified*, is not the real world; itis rather the human concept of the real world. Ferdinand de Saussure is considered the father of modern linguistics.

(e.g. *monkey*)? You ask, *"What is a monkey?"*, but perhaps not, *"What is a Kabir*?*"*

Words (or language) are thus symbols or labels of human ideas about the world. Humans thus carry in his head not the real things in the world, say, a mountain, an elephant, or a tree; but their ideas, which they label with a sound. Thus, Aesop's mischievous shepherd boy, in his attempt to panic the villagers working in the field, shouts at the top of his voice, "Tiger! Tiger!", even when there is no tiger. Here, the boy is using the word *tiger* (which is a basically sound) to refer to the idea of a tiger, which is there in his as well as the villagers' heads. This also suggests that humans can lie. Like the Aesop's shepherd boy, one can say "I'm hungry" even when he is not hungry; or he can say "I was in Africa last year" even when he has never been there.

But this is not true of animals. Like humans animals too use sounds in order to symbolize or to refer to the world, but since animals are unable to form concepts their symbols rather *directly* refer to the world. In other words, they cannot produce a sound as symbol to refer to something unless they experience it with their senses. For example, monkeys have a particular sound to refer to danger, but they can produce the symbolic sound only when they are *experiencing* a danger with their senses. Thus, a monkey, unlike the shepherd boy, cannot produce its sound for danger unless it sees or senses a tiger.

This also means that in the case of animals symbols do not have an independent existence: they come to them (which are again very limited in number in contrast to the large number of words a human language has) only when thereferents (i.e.

what is being symbolized) come, and they go away the moment the referents have gone away. But this is not the case with humans. With humans symbols are referent-independent; i.e. they are always there in their mind/brain. In other words, humans carry in their mind/brain the real world all along in form of words (nouns, for example, refer to different kinds of entities in the world) and grammar(the real world is finally a world of relations that entities enter into at different points of time and space; these relations are symbolized with grammar); but this is not the case with animals. **Stimulus-freedom** is thus yet another design feature of language.

LET US STOP AND THINK

The 19th century Romantics clearly understood how language has liberated humans from senses. While animals live by senses, we humans live rather by concepts or ideas, which we form on the basis of our sensuous experience of the world. In a letter written in 1827 to James Gill, his friend, **Samuel Taylor Coleridge(1772-1834)**, poet, literary critic and philosopher, thus wrote in clear terms (Griggs 2002/1956):

It is the fundamental mistake of grammarians and writers on the philosophy of grammar and language to suppose that words and their syntaxies are the immediate representatives of things, or that they correspond to things. Words correspond to

thoughts, and the legitimate order and connection of words to the laws of thinking and to the acts and affections of thinker's mind.

It follows from the discussion above that the sounds animals use as symbols are not symbols proper. A symbol is a symbol proper only when it has an existence independent ofits referent. What follows from this is that the only humans have a truly symbolic existence.

This also explains why humans have the notion of *past* and *future* besides *present.* Animals, by contrast, have only the notion of *present*. *Present* can be defined as the situation where both the symbol and its referent are present.[8]*Past* and *future* have, on the other hand, only a symbolic existence. Thus, humans have, on one hand, what is usually called "history", and "literature", on the other. In one, man linguistically constructs what he has already experienced; in the other, he (basically) constructs what he has not experienced so far. (i.e. what it could have been) – a potential reality. Both are non-existent. Animals have neither history nor literature, for they cannot use symbols for anything that does not exist before them. *An animal cannot talk about what happened last month, nor can it talk about what it would like to happen tomorrow.* As the philosopher Bertrand Russell noted, "No matter how eloquently a dog may bark, it cannot tell you that its parents were poor but honest."

[8]*Present* is thus what is going on at *the time of speaking*, i.e. at the time of using symbols.

Thus,while humans live in three worlds, animals live only in one world, the world of immediate sensuous present.

LET US STOP AND THINK

Denotation and Connotation: Sense and Reference

Language does not immediately refer to the world. It refers rather to our ideas of the world. A statement such as *A cat is a cat* is thus a *tautology*, for it gives us no idea about cats. *A cat is an animal*, by contrast, gives us an idea about cats, i.e. catsare*animals*, not *birds*. Language thus *connotes* (to use the philosopher John Stuart Mill's (1806-1873) terminology) rather than *denotes*. Thus, for instance, the denotation of *Jawarharlal Nehru* is the real world person by this name; on the other hand, *the first Prime Minister of India; the author of 'The Discovery of India'; father of Indira Gandhi* are some connotations of *Jawarharlal Nehru.* The philosopher GottlobFrege's(1848-1925) *reference* is thus synonymous to *denotation*; and his *sense* is synonymous with *connotation.*

Thus, to say *all the boys of the world* you do not have to know all the real world boys of the world (i.e. *all the boys of the world* carries an idea –it does not immediately refer to the real world).

As a matter of fact, everything is linked to the world in numerous ways so that to know something is to know its links to the world (and also how a thing is perpetually changing because of the influences of the links involved).

Language has thus made **Displacement** possible for human beings. When a human being uses symbols to refer to something which he is not experiencing at the moment of speaking (e.g. saying "Tiger! Tiger!" when there is no tiger; or that he *saw* a tiger yesterday; or that he is *going to see* a tiger in the zoo tomorrow), he displaces himself from the immediate present being experienced. This is, however, beyond the capacity of animals. As noted, animals can use symbols only for the present (i.e. what is being experienced at the moment of speaking) and they do not, therefore, have the sense of neither past or nor future; nor can they lie or imagine. Thus, Displacement has made human existenceradically different from animal existence, which is discussed in the section that immediately follows.

2.3 LIE AND IMAGINATION

Displacement relates to imagination.

What is imagination? It is the human faculty to construct a reality that does not exist, i.e. a fictional reality. In the real world dogs bite men. Thus, "Dogs bite men" is the linguistic construct of the real world where this happens. But in the linguistic construction, "Men bite dogs", the real world, where dogs bite men, is turned upside down. Imaginary worlds (like the one represented by the sentence "Men bite dogs") are thus linguistic; they come in the form of what is called *literature*.

Imagine is then the polished version of the word *lie.* Plato (428/427 or 424/423 BC) banished poets from his Ideal State, for poets are all liars: they construct imaginary alternative worlds, which pause threat to the existing one. In art men

search for what is missing in real life: art is man's perpetual search for perfection. Art thus does not believe in the dictum "Whatever is, is right"[9]; it believes instead in the (19th century Romantic) assertion, "What the imagination seizes as beauty must be the truth."[10] In a society based on exploitation of man by man, especially in the contemporary society, truth and beauty are rather antagonistic opposites. The real is ugly and the beautiful is only imaginary, i.e. the beautiful is only a linguistic construct. But without that imaginary linguistic construct – without that antithesis – reality will remain as it is – there can be no planned action towards change. PabloPicasso (1881-1973) once said, "Art is a lie that tells the truth."

To have language is thus to have the power of imagination – the first step towards change. Language has made the finite man infinite: it is because of language man, unlike animals, does not have to live only with what the S T Coleridge (1772-1834) called Fancy, the capacity to symbolically construct the world *as it is*; besides Fancy he has also Imagination, the power to "dissolve[..], diffuse [..], and dissipate [..] in order to re-create [the given world]." What makes a man human is then the awareness that he is finitely infinite – that he is born free, though chained in the imperfect given world, and that, therefore, he must get back his essential human nature of being free – being infinite. Imagination is thus the very essence of human consciousness. And Beethoven's[11] final symphony (marked *Allamarcia*), one of the rarest of all artistic expressions of human imagination mankind has ever produced, recalls a French revolutionary march and leads into

[9]see Epistle 1 of Alexander Pope's (1688-1744) *An Essay on Man.*
[10]see John Keats'(1795-1821 letter to Benjamin Bailey, 22 November 1817.
[11]The great German composer Ludwig van Beethoven (1770-1827).

a magnificent crescendo proclaiming that with the ideal of universal brotherhood the masses – the real makers of history – are on the move again over the betrayal of the early promises of the French revolution. (Beethoven inscribed to Napoleon his Third Symphony, *the Eroica*, which he composed in response to a suggestion from the French Ambassador in Vienna. Later, on receiving the news that Napoleon had been crowned Emperor, he cancelled the inscription.).

2.4 LANGUAGE AS A VEHICLE OF RATIONAL THOUGHT AND IMAGINATION

But human imagination, which is actualized in language, is never a web created in the mid-air. As a matter fact, with language human abstracts and structures his (bodily) experience of the world. For instance, the word, *fox*, is an abstraction of a particular experience he has had with the animal world; likewise, thegrammatical rule, SVO (subject-verb-object), is an abstraction of a fundamental recurring (bodily) experience of his, i.e. something does something to something else (at some point of time and space), e.g. a man killing a snake; a tiger chasing a deer; a girl writing a letter, etc, etc. Thus, language provides man with a way to structure his experience of the world and argue or think about it, i.e. how things are related to and are affected by each other; and as a result of this how things evolve into new things.[12] Thus, language is finally a vehicle of rational thought and

[12] For instance, every human language offers its speakers a grammatical way to negate a proposition or statement as in "No, the Sun does *not* move– it is rather the earth that moves round the Sun." But note that negation is an integral part of human reasoning about the world.

imagination: rational thought empowers human beings to foresee what is going to happen in the future.

But if this is true, language is rather a vehicle of rational though and imagination – an agent of change rather than just a means of communication of the day-to-day life, as is often defined and understood.

"Imagination is more important than knowledge. For knowledge is limited to all we now know and understand, while imagination embraces the entire world, and all there ever will be to know and understand." — Albert Einstein(1879-1955) on Imagination

2.5 LANGUAGE AND POSTMODERNISM

However, the so-called postmodern thought in its various forms has pronounced death of imagination as human knowledge of the future and as agent of social change. Art, on this view, is thus only a lie; it does not tell the truth (or there is no such thing as truth). The world comes to us through language, i.e. we live by ideas formed with or carried by language, but the world that language gives us is, as the postmodernist argument goes, only a partial or fragmented world – it is hardly the real world. Thus, language for the postmodernists is rather a prison house of fragmentation where humans will stay trapped in till they use language.

It is true that linguistic construct of the world is not necessarily an "objective" representation of the world. Think of the linguistic construction "Shah Jahan built the Taj Mahal", for example. A moment's reflection will show that

the sentence represents only a partial reality: the King Shah Jahan never built the TajMahal; the TajMahal was a product of the back-breaking labour of thousands of nameless common men and women. Thus, the concerned linguistic construct has an obvious bias towards mental labour, which mostly relates to the privileged section of the society. But facts remain that without physical labour, which mostly relates to the deprived section of the society, the TajMahal would have ever remained only a mental construct. Yet the privileged section of the society, because they have the advantage of living on others' physical labour, can hardly recognize the bodily basis of human knowledge and creations. Mental labour becomes for them an independent realm having primacy over physical labour. Thus, in response to the query, "Does your wife hold a job?" the university professor says: "No, my wife does not work.", where the verb 'work' excludes the physical labour that his wife does at home since morning till night. The philosopher Mikhail Bakhtin (1895-1975) thus observes in his *Marxism and Philosophy of Language*: "Where there is no sign, there is also no ideology; where there is the sign, there is also ideology." The dominant meaning of the sign 'work' in a male dominated society like ours is thus ideological, i.e. it is partisan and hence partial.

Linguistic constructs such as "Shah Jahan built the Taj Mahal" or "My wife does not work" are, then, constructs of the dominant groups in the society (here it is the middle class or the males). Constructs of such social groups are imposed on the society through the education system and other such agencies, which they themselves control. As Karl Marx (1818-1883) and Frederick Engels (1820-1895) observed in their *The German Ideology*: "The dominant ideas are the ideas of the ruling class." Consequently, the thought of the physical labour

which made the TajMahal a reality hardly crosses the mind of the school student or the educated adult when they think about the making of the unique monument[13].

Given that the real world mostly comes to us through language and that such a world is rather partial and partisan, the postmodern argument that language is a *prison house* offragmentation (a *prison house* implies a detachment from the greater, actual reality) seems to be valid.

But is language really a prison house? Granted that language offers a means also to say "The Taj Mahal was built by common men and women", which deconstructs the construct "The King Sah Jahan built the Taj Mahal", language is rather **a site of conflict between different ideological positions on the same reality**. Language is, therefore, not just a depository for the dominant ideas; it is also a weapon against such ideas; it is a tool for synthesizing, i.e. a tool for reasoning for a *better* understanding of reality. There is no God's eye view, i.e. human ideas do not give expression to objective truth at one time, as a whole; human ideas express truth only approximately, relatively. At first sight, the construct "The TajMahal was built by common men and women" may appear as partisan as "The King Sah Jahan built the TajMahal", but it does unveil the one-sidedness of the dominant construct (i.e. "Sah Jahan built the TajMahal"), leading us to the question: What has lead to the social division between mental and physical labour? Is this inhuman division of labour going to cease in the society of the future where there will be no workers or intellectuals as separate classes?

[13] Around twenty thousand nameless labourers worked for long twenty two years to create the TajMahal, a wonder of the world.

But it is thought and imagination that constitute the biggest threat to the market economy of the present times. What does such an economy want? A hedonistic society that is far away from thought and imagination, for only such a people can safeguard its interests.

As a matter of fact, the contemporary postmodern theory, which believes that thought and imagination is but a language game, is, in essence, a unique expression of the abject surrender of the theorists to the present day big capital trying to transform the human society into a global market. Market is the degenerated form of human society.

To whom is the poet duty-bound? "To language", said T S Eliot (1888-1965), the leading modern poet and critic. But this is no postmodernism: once we have recognized language as means of thought and imagination, then it is not difficult to sympathize with Eliot or Leavis[14] who pronounced in unambiguous terms that obligation to language is obligation to life. Yet, globalization wants language rather as a weapon against thought and imagination. The present-day decline of language is, therefore, not an isolated phenomenon: on one hand, language has been reduced to a mere functional tool - a means of interacting with the employees at the bank or the shop; on the other hand, language has taken an absurd, ludicrous form in the hand of the postmodern theorists. This language does not help us understand reality, rather it mystifies it. Language, in their hand has become rather a means of obfuscation. But language for change is 'like a window pane', as once put by George Orwell (1903-1950).

[14] Dr F R Leavis (1895-1978), the influential British literary critic of the early-to-mid-twentieth century.

The 19th century German philosopher Hegel (1770-1831), who was a contemporary of S T Coleridge, noted, "Even the criminal thought of malefactor has more grandeur and nobility than the wonders of the heavens." Each and every human being of the world knows at least one language. For Gramsci[15], or for Chomsky[16], every human being is, therefore, essentially an intellectual, a thinker. Yet the society based on exploitation of labour has deprived the majority – the millions of common men and women whose common labour has created human civilization – of the opportunity to freely use language as a tool for imagination and thought. Perhaps for them too language is just a means of day-to-day life communication. Asks Trotsky[17] rhetorically: "How many Aristotles are herding swine?"

The question is: Can their power of language be suppressed for all time?

2.6. SUMMING UP

In this Unit we have seen that language does not directly refer to the world; what it immediately refers to is rather the concepts we form about it in our mind. Concepts are symbolised by words (or language). Thus, the word *cat*, for example, refers not to any particular real world cat; it refers rather to the concept that we have formed in our mind about a particular type of thingin the world. One can thus say the word *cat* even when he is not experiencing a cat with his senses. In this case, the word *cat* is referring to the concept of cat that one has in one's mind. Thus, humans enjoy stimulus-freedom

[15] Antonio Gramsci (1891-1937), Italian Marxist theoretician and politician.

[16] Avram Noam Chomsky (b. 1928), American linguist, philosopher, social critic, and political activist (see Unit III).

[17] Leon Trotsky (1879-1940), Marxist revolutionary and theorist, Soviet politician.

(which is yet another design feature of language), by dint of which humans can displace themselves from the immediate present of senses to the a-sensual domains of past and future. Thus, humans can lie and imagine. Literature is essentially imagination, i.e. literature is a noble lie that 'tells the truth'. Animals only sense the world; concept formation is beyond their capacity. Thus, animals, in sharp contrast to humans, live only in the immediate present of senses and they cannot, therefore, lie or imagine. The so-called postmodern thinkers, however, think that language gives us only a partial reality so that humans can never arrive at truth, or, because of this, there is no truth. On the opposite view, language is rather a site of conflict between different ideological positions on the same reality; it is, therefore, not just a depository for the dominant ideas; it is also a weapon against such ideas; it is a tool for synthesizing, i.e. a tool for reasoning for a *better* understanding of reality.

2.8. ASSESSMENT QUESTIONS

1. What is a concept? How do humans enjoy stimulus-freedom?
2. 'Language does not directly refer to the world.' Explain.
3. Explain lie and imagination from a linguistic point of view.
4. What is *displacement*?
5. Linguistically explain *present*, *past*, and *future*.
6. 'While animals live in only one world, humans live in three worlds: past, present, and future.' Explain.
7. Define Frege's sense and reference.
8. 'Animals have neither history nor literature.' Explain.
8. 'Art is a lie that tells the truth' (Pablo Picasso). Explain.

9. Is language a prison house of ideas of dominant social classes?

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JOT DOWN IMPORTANT POINTS

JOT DOWN IMPORTANT POINTS

MODULE II: THE MAKING OF LANGUAGE

UNIT 3: LANGUAGE AS A NATURAL OBJECT AND CONTEMPORARY DEBATES: CHOMSKY'S THEORY OF UNIVERSAL GRAMMAR – THE METAPHOR-BASED APPROACH TO LANGUAGE.

UNIT STRUCTURE

3.0 INTRODUCTION

The major contemporary debate on language centres round this question: Is language a natural object or a human construct? To know a language is *basically* to know its grammar. But the child does not learn the grammar of his mother tongue consciously; rather it *happens* to her (just like puberty happens to her). Thus, according to Noam Chomsky, the linguist and philosopher who brought about a revolution in modern linguistics, grammar is rather something

biological: grammar is designed by nature, i.e. it is an extra-human construct, and it grows in the child of the brain as he grows. In sharp contrast to this view, grammar, on the Metaphor-based approach (e.g. Cognitive Linguistics), is rather a human construct reflecting the patterns in which we experience the real world happenings with our body, i.e. the senses. A pertinent question is then whether human thought is constrained by grammar.

3.1 LEARNING OBJECTIVES

At the end of this Unit you should have a clear idea of the following:

- The ongoing debate as to whether language is a natural object or a human construct
- Chomsky's theory of Universal Grammar
- The Metaphor-based approach to language

3.2 LANGUAGE AND PAROLE

Sentences, with which we talk about the world (i.e. what things do in the world), are created by combining words. But words are not combined in a random way. Thus, for instance, in English, the word for the doer (i.e. the thing that does something to something else at some point of time and space) sits at the initial position of a sentence; the word which indicates the action of the doer sits next to it; then comes the word for the thing upon which the doer acts (often called the *sufferer*). Optionally we can then mention the words denoting

the time and the place involved (i.e. *when* and *where* of the action). Thus, we have the sentence: *The professor killed a mosquito last night at his home*. Note further that the sign which is indicating time of the action in the sentence, i.e. the bound morpheme[18] *-ed*, is attached to the word which is denoting the action, not to the word denoting the doer (or the sufferer). Otherwise, we would have the sentence as **Theprofessor**ed** kill a mosquito last night at this home.*[19]

This is to say that every language follow some 'rules' while combining words and bound morphemes (see fn 2 below). In other words, language has a grammar, which offers us a way to talk about the world, i.e. what things do at particular points of time and space.

Modern linguistics, i.e. the modern scientific study of language, began with the idea that language is a *form* rather than *substance*. Thus, Ferdinand de Saussure (1857-1913), who is considered the father of modern linguistics, made a distinction between what he called *langue* (i.e. form) and *parole* (i.e. substance). *Langue* is the grammar, i.e. the grammatical rules, of any language while *parole* is the actualizations of these rules. In other words, parole is all the grammatical sentences that have *already* been produced; *being* produced; or *are going to be* produced in the future in a language. Thus, for instance, the English grammatical rule *Subject Verb Object*[20]is part the *langue* of English while

[18] While a sign like *professor* is a word or a free morpheme, a sign like *–ed*is a bound morpheme. Bound morphemes mean more general notions (e.g. *–ed*indicates past time, but the word *yesterday* a particular point of past; the bound morpheme –s indicatesplurality while the word *two* mean a particular plurality).

[19] The asterisk (*) is used to mean that what follows it is (grammatically) incorrect.

[20] Typically *Subject* is a doer; typically a verb denotes a (physical) action; on the other hand, a typical *Object* is a non-human (in)animate thing upon on which something is (physically) done.

sentences such as *The professor killed a mosquito*; *Dogs bite men*; *Men bite dogs*[21]are part of its *parole.*

3.3 KNOWLEDGE OF GRAMMAR: CONSCIOUS OR UNCONSCIOUS

Now, every human being knows at least one language (which is usually called the *first* l*anguage*[22]), and to know a language means to know (among other things) the grammatical rules that the language follows: one can produce grammatical sentences only when one knows the grammatical rules of one's language[23].

But how do human beings know the grammatical rules of the language they speak? In the case of the first language, human beings *never* consciously learn the grammatical rules. Children speak their first language correctly and fluently before they go to school and learn its grammar perhaps *with little success*! Note here that most people of the world are illiterate to consult a grammar book; furthermore, most languages of the world are not yet linguistically studied so that they do not yet have a grammar book; or, what grammatical rules these languages follow are still not known. Yet these languages are being correctly and fluently spoken by the native speakers (which implies that *somehow* they know the grammar of their languages).

[21] Perhaps the sentence, *Men bite dogs*, goes against our (current) knowledge of the world, but note that it is *grammatically* correct!

[22]Inmost cases the *first language*is the mother tongue.

[23] Knowing a language does not just mean knowing its grammar. For instance, the sentence "Yes, I ate the medicine in time" is grammatically correct, but it is unacceptable, for the verb "eat" does not go with "medicine". The acceptable version of the sentence is: "Yes, I took the medicine in time." Thus, knowing a language also means knowing what goes with what (technically called *collocation*) and such other things. The question is: Is the knowledge of grammar basic of all such knowledge?

Then, intelligence also seems to have little to do with grammatical knowledge of the first language. Thus, what a very empty-headed fellow(or a mad person for that matter) says may have very little sense, yet the sentences she or he produces in her or his first language are grammatically correct.

Furthermore, it is not that the child can speak correctly and fluently only her/his first language. The young child *unconsciously* acquires the grammar of any number languages they are exposed to so that they can speak them with grammatical accuracy and fluency.

Noam Chomsky (b. 1928), the American linguist who brought about a revolution in linguistics in the mid twentieth century with his idea of *Universal Grammar*, thus claims that the child is born with an *innate* knowledge of grammar. This is, however, not a knowledge of any particular grammar – this is the knowledge of Universal Grammar, i.e. the set of common rules that all languages of the world share at an *abstract* level[24]. These rules, which may be called the *essence* of language, are already wired in the human brain, i.e. the child is born with them. The human brain is thus not a blank slate; it is rather a linguistic brain, unlike the brain of the animal. When UG comes into contact with the concrete rules of a particular grammar (i.e. when the child is exposed to a particular language), the innate abstract general rules which are already wired in the brain get activated and gradually take

[24] Technically these rules are known as *principles* and *parameters.*

shape of that particular grammar in the brain of the child without her conscious knowledge[25].

If the child were *not* born with such an innate linguistic or grammatical knowledge then she would have to *consciously* analyze the language she is being exposed to in order to arrive at its grammar. But grammar of any language is too complex a thing to analyze for even the most intelligent child (or an adult for that matter).

3.4 IMITATION AND REINFORCEMENT VS. UNIVERSAL GRAMMAR

Prior to Chomsky's Universal Grammar it was believed that children acquire language by imitating the language that adults speak around them. It was believed that adults correct the mistakes that the child makes in the process of imitating. But facts remain that children produce more than what they hear from the adults. Note that in imitation the output is always equal to input; but, in the case human children, the output is always greater than the input, i.e. unlike the parrot, which just imitates and can produce no *new* sentence, the human child produces grammatical sentences which she has never heard before. Again, at one stage of acquiring their language English children say "They goed" instead of "They went". Yet what they hear from the adults around them is not "They goed", but "They went". As a matter of fact,

[25] An analogy that can be drawn here is this: every person is a *particular*, i.e. every person is different from the other person – your face, your eyes, your voice are thus different from your friend's face, eyes, and voice; but at an *abstract* level all human beings share a set of common features and qualities, because of which we all are, - despite our concrete differences - human beings. Similarly, every language has its own particular grammar, but at an abstract level they share a common set of rules, which Chomsky calls *principles* and *parameters*.

expressions like "They goed" imply that grammar – the English rule that "ed" has to be suffixed to the verb in order to ground it in the past time – is developing in the child's brain. Thus, "goed", from the Chomskyan viewpoint, is not a mistake; it is rather part of the "Child grammar" gradually developing into the "Adult grammar". As the child is further exposed to her language the rule of past tense is further developed in her brain so that now she says, "They went" instead of "They goed'". And research has shown, parents in real life do not correct such "mistakes" made by their children; they rather enjoy them. And even if they are corrected it is of no use – research on child language acquisition has clearly shown that children repeat them until the grammar of their language further develops in their brain.

3.5 GRAMMAR AS AN EXTRA-HUMAN CONSTRUCT – A NATURAL OBJECT

Chomsky thus separates grammatical knowledge (i.e. the knowledge with which we form correct grammatical sentences to talk about the world), from encyclopedic knowledge, i.e. the knowledge which we acquire by sensuously experiencing the world and by using grammatical knowledge. Chomsky argues that grammatical knowledge *happens* to us; by contrast, we *consciously* acquire encyclopedic knowledge.

However, for the empiricist philosopher such a dichotomy between grammatical and encyclopedic knowledge is false. For him, all human knowledge comes from our senses and grammar is but an *abstraction* of our sensuous experience of the world (for instance, the SVO rule is an abstraction of our sensuous experience of the tiger killing the deer; the bus

hitting the man; the cat killing the mouse and so on). Note that in most languages of the world the Object follows the Subject – it does not happen the other way round. For the empiricist, this is not without any reason: when we talk about something doing something to something else the *doer* comes first to our mind rather than the sufferer, i.e. the one on which something is being done. Hence, SVO rather than OVS, for instance.

However, Chomsky, as a rationalist philosopher, believes that grammatical rules are not abstractions of our sensuous experience of the world - they are *already* there; and they are *arbitrary* in the sense that the way words are combined for sentences has *on the whole* nothing to do with how we perceive and conceptualize the world with our senses. In other words, grammar has its own logic which cannot be explained in terms of our sensuous experience of the world. For example, in the sentence *It is raining*, the first linguistic element *it*, unlike the Subject, i.e. *The professor*, in our first example, is not a doer; yet it is the Subject (S) in the sentence. As an already existing rule independent of human sensuous experience, a sentence must have a subject, so, as it would be argued on this approach, the linguistic element *it* serves in the sentence only as a *dummy subject* without carrying any meaning.

Chomsky calls the alleged tacit or innate grammatical knowledge of the native speaker *competence.* On the other hand what he terms *performance* is what the native speaker produces in her language with *competence*, i.e. the sentences she utters or writes. But, performance is, as Chomsky points out, not always a faithful representation of competence.

For instance, because of nervousness or physical or mental fatigue, a native speaker in a particular situation may produce grammatically incorrect sentences, but that does not mean that her *competence* in her language is imperfect. Chomsky thus talks abut an *ideal speaker-listener*, i.e. in an ideal situation (i.e. a situation free from extra-linguistic factors such as nervousness, physical or mental fatigue and the like) every native speaker has the capacity to produce grammatically well-formed sentences with her innate and perfect *competence.* However, one pertinent question here is, whether such a situation exists at all. Given that language is always used in some or other context, such a situation does not exist, but if grammar is a natural object with an existence of its own, it is legitimate to talk about an ideal speaker-listener.

LET US STOP AND THINK

EMPIRICISM AND RATIONALISM

One enduring issue in philosophy is the dispute between *empiricism* and *rationalism.*

Empiricism (Materialist empiricism) as proposed by Francis Bacon (1561-1626), Thomas Hobbes (1588-1679), John Locke (1632-1704) and others holds that bodily experience, i.e. sensuous experience of the objectively existing outer world is the only source of knowledge and affirms that all knowledge is founded on sensuous experience.

Rationalism, which is associated with René Descartes (1596-1650), Gottfried Leibniz (1646-1716) and others, holds by contrast that source of human knowledge is reason

rather than bodily or sensuous experience. And reasoning is done on the basis of the innate knowledge or ideas, i.e. the fundamental knowledge or ideas about the world which humans get by birth (what the philosopher Immanuel Kant (1724-1804) called *a priori knowledge*). In other words, what we experience with our body or senses (what Kant called a *posteriori knowledge*), we comprehend these experiences with the innate knowledge or ideas *already* there in the brain. ideas. According to some rationalists, God provided us with the innate knowledge or ideas at creation. Some others say it is part of our nature through natural selection.

Thus, in rationalism the mind and the body are qualitatively different and separate (what is called the *mind-body dualism*). The dualistic nature of the mind and the body separates humans from animals. Both animals and humans have the same senses with which they experience the same world, but unlike humans, animals do not have a mind equipped with innate knowledge or ideas to comprehend the bodily experience. Thus, animals have only sensuous experience; they do not have thinking or thought, which the human mind makes possible. For humans, the mind and its powers are supreme: *cogito, ergo sum*, said Descartes.(Latin for "I think, therefore I am"). In rationalism the mind is thus not just separate from the body, it is at the same time superior than the body.

Empiricism by contrast does not believe in the existence of innate knowledge or ideas, i.e. to the empiricist the mind is not separate from the body; it is rather *part* of the body. The human beings do have a mind, but the mind is formed or shaped by the body, i.e. the bodily experiences

of the world. In other words, all human ideas (i.e. the mind) have a bodily basis. Thus Locke argued that the human mind is a *tabula rasa*, meaning "blank slate" and life and experience "write" knowledge upon it.

According to Chomsky grammar is thus an extra-human construct. It is a natural object - a biological phenomenon rather than a man-made artifact: "Ultimately the study of language is part of human biology" (Chomsky 1980: 226).

3.6 LINGUISTICS AS A NATURAL SCIENCE LIKE PHYSICS

Modern linguistics emerged as a distinct field in the nineteenth and the early twentieth century, the heyday of colonialism, as a reaction to the colonial view that classical languages (e.g. Latin, Greek) are superior to modern languages, i.e. they are only a corrupt version of the classical languages. As noted, 'something does something to something else' is a fundamental human experience. In other words, in real life, we always meet a doer and a sufferer (i.e. the one on which the doer acts). The doer, in grammar, is called the Subject; the sufferer the Object. In a language like Assamese, the morpheme *-e* is used to mean the doer. Thus, while *Ram* means a person, *Ram-e* or *Hari-e* means 'Ram/Hari the doer'; on the other hand, *-k* is used to mean the sufferer so that *Ram-k* or *Hari-k* means 'Ram/Hari the sufferer' (e.g. *Ram-e Hari-k pitile*'Ram beat Hari'; *Rama-k Hari-e pitile*'Hari beat Ram'). Bound morphemes like *-e* or *–k* are called case markers (or *vibhakti* in Sanskrit). But a language like English does not use such markers to distinguish the Subject from the Object. In English the Subject is the one which sits before the verb; the

Object is the one which follows the verb (e.g. Ram beat Hari; Hari beat Ram. In the second sentence Hari is an Object; but in the second sentence it is a Subject, because now it sits before the verb). Thus, English does not use case markers while Latin does: English uses the means of the order of the words (i.e. the order of the nouns and the verb – which is sitting where) in place of case markers. But this does not suggest that English is a corrupt version of Latin or is inferior to Latin. The point is that the two languages are adopting two different grammatical ways to indicate the same thing (i.e. the doer and the sufferer).

Thus, each language has its own distinctive grammatical system and it has to be treated in its own term. But the view that grammars of Latin and Greek were the perfect models of grammar led to all kinds of distortions in the description of modern languages.[26]

Modern linguistics emerged also a sharp reaction to the notorious colonialist notion that languages of the 'uncivilized' Asian or African native people, who had just been enslaved or colonized, must be inherently primitive, lacking in structure. They cannot therefore be a vehicle of complex thought. As many of these languages did not have a writing system, it was also assumed that this was a defining feature of *a language without structure*, although such a language has never been there.

In its attempt to preserve these so-called primitive languages before they might be completely extinct as a result

[26] Given that different languages adopt different grammatical means to mean the same thing, there is no perfect or imperfect model of grammar, although the grammars of languages spoken by socially powerful groups are often viewed as the 'perfect' grammatical models. One cannot argue that case markers are a better grammatical way than the word order.

of their native speakers being wiped out by the colonialists, or forced directly or indirectly to switch to colonial languages, modern linguistics emerged as an elaborate descriptive enterprise. Linguists aimed to describe each of these languages, and to show that they were rather as complex and highly structured as any other language spoken in the 'civilized' world. At the same time, however, their emphasis was on differences between languages, rather than similarities, because by describing these languages in their own terms they also wanted to establish that each language was a distinctive system.

The vast achievement of this descriptive enterprise is sometimes unduly belittled in histories of linguistics; at the same time, however, there is no denial to the fact that Chomsky's thesis of Universal Grammar brought about a revolution in modern linguistics by making explanation rather than description its goal.

In descriptive linguistics, description of language – which, as noted, means description of *particular* languages - involves, first of all, gathering a large number of utterances of the language to be described. The linguist then classifies the elements of the corpus at their different (graded) linguistic levels – first at the level of phoneme, then at the next higher level of morpheme, then at the next higher level of words and word classes (such as noun phrases) and then at the highest level of sentences and sentence types. Thus very much like biology descriptive linguistics was a taxonomic description of observable data.

For Chomsky, however, such a taxonomic description of languages is no science, for science is not just describing the

way things are. The point about science is that it seeks to *explain* why things are the way they are, or what makes the way things are. In other words, science goes beyond observable data to explore what is *behind*. But as science does not have any mechanical procedure to find out *what is behind*, so the scientist formulates hypothesis and tests them against evidence. A revolution started in linguistics when Chomsky directed attention to the fact that like physics linguistics had all the potentialities for becoming an important science, that is, it could serve as a powerful tool for explaining the phenomenon of language rather than merely describing its observable manifestations. This explains how in Chomskyan linguistics the emphasis shifted from differences between languages rather to similarities, i.e. from *languages* to *Language.* In other words, with Chomsky the goal of modern linguistics has become to investigate into the nature of the universal linguistic template that every human child is born with, which later develops into a particular language.

Chomsky has, however, been repeatedly criticized for directing attention towards the unobservable, i.e., the knowledge of the underlying rules of language in the brain (what is, as noted, called *competence* in Chomskyan terminology), rather than the observable, i.e., the actual use of language in real situations (what Chomsky, as noted, calls *performance*). Language, for these critics, has no existence outside performance and therefore the structure of language must be determined by the needs of communication rather than innate properties of the mind as claimed by Chomsky. Thus, for instance, the philosopher Searle (1972: 16) writes: 'We don't know how language evolved in prehistory, but it is quite reasonable to suppose that the needs of communication

influenced the structure.' In his opinion, Chomsky's linguistics is thus 'pointless and perverse' because it eliminates from its study performance altogether. Searle (1972: 16-17) writes:

The common-sense picture of human language runs something like this. The purpose of language is communication is as much the same sense that the purpose of the heart is to pump blood. In both cases it is possible to study the structure independently of function but pointless and perverse to do so, since structure and function so obviously interact.

Chomsky, however, rejects the view that the sole purpose of language is communication. For him, the view devalues the importance of its other uses. Chomsky (1979: 88) writes:

Language can be used to transmit information, but it also serves many other purposes; to establish relations among people, to express or clarify thought, for play, for creative mental activity, to gain understanding, and so on. In my opinion, there is no reason to accord privileged status to one or the other of these modes. Forced to choose, I would say something quite classical and rather empty: language serves essentially for the expression of thought.

Thus, for Chomsky, to account for structure of language on the basis of communicative function is rather a hopeless prospect:

Surely there are significant connections between structures and function; this is not, and has been never, in doubt…….consider Searle's contention that it is 'pointless and perverse' to study the structure of language

'independently of function'….Pursuing his analogy, there is no doubt that the physiologists, studying the heart, will pay attention to the fact that it pumps blood. But he will also study the structure of the heart and the origin of this structure in the individual and species, making no dogmatic assumptions about the possibility of 'explaining' this structure in functional terms.

…..Where it can be shown that structure serves a particular function that is a valuable discovery. To account for or somehow explain the structure of UG, or of particular grammars, on the basis of functional considerations is a pretty hopeless prospects, I would think; it is, perhaps, even 'perverse' to assume otherwise.

For Chomsky, eliminating performance from the study of language is then a matter of scientific method, which we know as *idealization*. Chomsky (1979: 57) writes:

Opposition to idealization is simply objection to rationality: it amounts to nothing more than an insistence that we shall not have meaningful intellectual work. *Phenomenon that are complicated enough to be worth studying generally involve the interaction of several systems*. Therefore you must abstract some object of study, you must eliminate those factors, which are not pertinent. At least if you want to conduct an investigation which is not trivial. *In the natural sciences this isn't even discussed, it is self-evident. In the human sciences, people continue to question it. That is unfortunate*. When you work within some idealization, perhaps you overlook something which is terribly important. That is a contingency of rational inquiry that has always been understood. One must not be too worried about it. One

has to face this problem and try to deal with it, to accommodate oneself to it. It is inevitable (italics added).

Thus, we have the following famous passage written in 1965 where Chomsky (1965: 3-4) stated what linguistic theory meant to him. Chomsky has strictly adhered to this position ever since:

Linguistic theory is concerned primarily with an *ideal speaker-listener*, in a *completely homogeneous speech community*, who knows its language perfectly, and is unaffected by such grammatically irrelevant conditions as memory limitations, distractions, shifts or attention and interest and errors (random or characteristic) in applying his knowledge of language in actual performance.

We thus make a fundamental distinction between *competence* (the speaker-hearer's knowledge of his language) and *performance* (the actual use of language in concrete situations). *Only under the idealization set forth in the preceding paragraph is performance a direct reflection of competence*. In actual fact, it obviously could not directly reflect competence. A record of natural speech will show numerous false starts, deviation from rules, changes of plan in mid course, and so on. *The problem for the linguist, as well for the child learning the language, is to determine from the data of performance the underlying systems of rule that has been mastered by the speaker- hearer and that he puts to use in actual performance*….(italics added).

Chomsky's approach to language is thus wholly *a*social. As an alternative to Chomsky's notion of competence Dell Hymes, the noted American sociolinguist, once proposed the notion of *communicative competence* that covered not only

child's knowledge of grammar but also his knowledge of how to use the language for social communication (i.e. what to say whom, etc). As he argued, 'There are rules of use without which rules of grammar would be useless' (Hymes 1972: 278). But yet Chomsky adheres to his narrower idea of competence, because he believes that child's knowledge of *use* of language, unlike his knowledge of the grammar of his first language, is *entirely* acquired by experience.

Grammar or syntax: Influenced by communication?

As Bickerton (1998), the noted American psycho-linguist, writes, 'the litmus test for any book on language evolution is its treatment of syntax. Syntax, the most abstract yet the most uniquely human of language attributes, has proved a stumbling block for almost every scholar in the field.' But claims such as this that 'an increase in the range of activities in social life means an increase in the range of communicative demands made on language, and this results in an increase in syntactic complexity' are difficult, or perhaps altogether impossible, to validate. Bickerton rhetorically asks: 'What new activity demanded which new syntactic structure? Did relative clause come with animal domestication, the beginning of agriculture, or the rise of city states?' For Bickerton, 'just framing these questions reveals the vacuity' of such claims.

In Marxism all ideas have a material basis; nevertheless, language, on the Marxist view, is far from being a superstructural phenomenon. Thus, Frederick Engels (1940 [1882], while dismissing entirely the possibility of tying phonological change to a change in the economic base of society, wrote: 'It will hardly be possible for anybody, without being ridiculous…to explain the economic origin of High

German vocalic changes which divide Germany [in dialect matters] into two halves.'

3.7 THE METAPHOR-BASED APPROACH

As noted, Chomsky's proposal of UG came under heavy attack in the initial years; but, not surprisingly, soon it emerged as the sole dominant theory of modern linguistics. It maintained its total dominance for over almost four decades until the metaphor-based linguistic theory of Cognitive Linguistics[27] made its appearance as a powerful alternative in the beginning of the 1990s.

3.7.1 Ordinary language is metaphorical

The metaphor-based linguistic theory holds that ordinary language is essentially metaphorical. On the popular or dominant view of metaphor, metaphor is a poetic device – a prime characteristic of poetic language. But metaphor, as is argued by Cognitive Linguists, rather pervades ordinary language. For them, metaphor is not an ornamentation, rather it is the way humans think. Humans move from the concrete to the abstract and metaphor is a device for describing an abstract idea in terms of our concrete sensuous experience. And we cannot dispense with metaphor because ideas are not an independent realm – they are finally rooted in our concrete sensuous experience of the world. Consider the sentence, *"What did you say? I didn't quite catch that last remark*." Apparently this is ordinary language. But a moment's

[27] Early pioneers of this school of linguistics include Ronald Langacker, George Lakoff, Gill Fauconnier, LeonardTalmy.

reflection shows that the language is rather metaphorical. The verb *catch*, which basically means a sensuous physical experience, is used in the sentence to mean 'to hear'. And the remark is understood as a concrete three dimensional thing, which we catch with hands.

The philosopher John Searle calls such a metaphor *dead* metaphor (1979/1993), for now they are integrated into the ordinary language to the extent where one can no longer recognize them as metaphor. Searle writes (1993: 114):

In dead metaphors the original sentence meaning is bypassed and the sentence acquires a new literal meaning identical with the former metaphorical meaning. This is a shift from the *metaphorical* utterance….. to a *literal* utterance. But are *deadmetaphor*s dead? Perhaps not. If, for example, "The price of petrol has *gone up*", is a well worn linguistic expression, *uppers* and *downers* (modern stimulant recreational drugs) are just novel linguistic manifestation of the same spatial *dead metaphor* of up and down. (Think of modern expressions like "*back*ward classes"; "*hig*h ranking officers", "*up*load /*down*load a file).

It was Michael Reddy, the American linguist, who first showed that the metaphors which Searle calls dead metaphors are rather the underlying basis of human thought in language. In an important study, Reddy shows that more than 70% English expressions are based on the human experience of physical containment (Reddy 1997). A word, an essay, the human head are thus perceived as a container where thoughts are stored and then taken out of: "I cannot *put* my ideas into words"; "I got your ideas *out of* your paper"; "Your talk came across beautifully."

After Reddy it was George Lakoff and Mark Johnson, the American linguists and philosophers of language, who furthered the study of dead metaphors underlying human language. In the now-classic *Metaphors We Live By* (1980), which is a sharp blow to the formalist approach to language, they call dead metaphors *conceptual metaphors*. Both the poet and the ordinary man, as the authors argue in the decisive work, rely on the same conceptual metaphors underlying their language to express their thought. When one says, "I first need to digest the proposal", or "His speech offered much food for thought", thought is compared with food. This in turn implies that one conceptual metaphor underlying English (and many other languages as well) is IDEAS ARE FOOD.

But note that the following uniquely beautiful line of the English philosopher Francis Bacon (1561-1626) also rests on the same conceptual metaphor:

"Some books are to be *tasted*, others to be *swallowed*, and some few to be *chewed* and *digested*."

Searle's dead metaphors are then not dead. They are rather **conceptual metaphors** in terms of which we comprehend the abstract. It is, therefore, not that only the poet thinks in images, or that only poetic speech is metaphorical. Poetic speech is just an imaginative extension of the same dead metaphors that underlies ordinary speech. We comprehend the abstract notion of life, for example, partly in terms of the conceptual metaphor LIFE IS JOURNEY, which manifests itself in clichéd linguistic expressions like "Giving children a good *start* in life"; "His career is at a *standstill*, or, "She's *embarking on* a new career"; but in the following lines of the

poet the conceptual metaphor finds a novel expression (see Lakoff and Johnson 1980) – the poet talks about two roads rather than one to the same destination:

Two roads diverged in a wood, and I

–

I took the one less travelled by.
And that has made all the difference.

(Robert Frost)

And in Dante life's road passes through a dark wood:

In the middle of the life's road
I found myself in a dark wood.

(Dante)

3.7.2 Grammar is a human construct and is metaphorical

It is clear from the foregoing discussion that the abstract is not an independent realm; it is rather rooted in the concrete; i.e. our bodily or sensuous experience. Now, grammar, as noted, offers us a way to talk about the particular happenings that we experience in the world. In other words, grammar is the *general* expression (e.g. SVO) of *particular* real world happenings of our experience (e.g. *The cat killed the mouse* (SVO)*; Mary slapped John* (SVO)*; The bus hit the man* (SVO)).

Thus, in Cognitive Linguistics, grammar is an abstraction of our bodily or sensuous experience of particular real world

happenings. It is in this sense that grammar is metaphorical in Cognitive Linguistics, i.e. grammar has a bodily basis on this approach. By contrast, grammar, on the Chomskyan approach, is rather *autonomous*, i.e. it is not an abstraction of our bodily experience of the world (although it offers us a way to talk about the particular happenings of the world) – the abstract system has come from nature and it has it is governed by its own rules.

A trivial example of the bodily basis of grammar may be useful here: in almost all languages the subject precedes the object (e.g. *The tiger* (S) *caught the deer* (O)). On a metaphor-based approach like Cognitive linguistics, the Subject preceding the Object is rather a direct reflection of how we view or understand in real life the relation between the doer (S) and the sufferer (O). The doer rather than the sufferer (i.e. the one affected by the act of the door) comes to our mind first, for it is the doer that exerts its power on the sufferer. Hence SO rather than OS. (The Chomskyans will counter the argument by saying that grammatical rules *in isolation* might display a reflection of our bodily experience of the world, but that does not mean that grammar *as a whole* is based on human senses).

The word order in world languages

To express a transitive action, i.e. to say *something does/did something to something else*, **S** (Subject), **O** (Object), **V** (Verb) can be combined in the following 6 ways:

SOV [45% 2700 languages]

SVO	[42% 520 languages]
VSO	[9% 540 languages]
VOS	[3% 180 languages]
OSV	[0.99% 59 languages]
OVS	[0.01 only one language is reported to have this order]

Note that in the first three orders, that is, in 96% of 6000 world languages **S** precedes**O.**Only in 4% **O**precedes**S**.

3.8 SUMMING UP

In this Unit, we have looked at the contemporary debates on language. i.e. whether language is a natural object or a human construct. We have looked at Chomsky's theory of Universal Grammar vis-à-vis the Metaphor-based approach to language. As a Rationalist philosopher Chomsky claims that grammatical knowledge (i.e. how words combine to form a sentence) is independent of man's knowledge of the world and that it is genetically programmed in the human brain. In other words, rules of grammar are designed by nature, i.e. it is an extra-human construct. In sharp contrast to this view, grammatical knowledge, on the Metaphor-based approach (e.g. Cognitive Linguistics), is rather part of man's knowledge of the world, i.e. grammar is a human construct and is therefore metaphorical. In other words, grammatical

constructions reflect the patterns in which we experience the real world happenings with our body, i.e. the senses.

3.9ASSESSMNET QUESTIONS

1. Explain in brief Chomsky's Universal Grammar.
2. Discuss the Chomskyan notions of *competence* and *performance.*
3. Discuss the Chomsky's notion of *ideal speaker-hearer*.
4. Discussempiricism vis-à-vis rationalism.
5. Discuss the Searle-Chosmky debate on the making of language.
6. Discuss Dell Hyme's notion of *communicative competence*.
7. What is the metaphor-based approach to language?
8. Do you think grammar has a bodily basis?
9. What is *conceptual metaphor*?
10. Show that the word order of natural languages of the world seems to have a bodily basis.

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JOT DOWN IMPORTANT POINTS

MODULE III: INTRODUCTORY PHONETICS,PHONOLOGY AND MORPHOLOGY

UNIT 4: INTRODUCTORY PHONETICS AND PHONOLOGY: SPEECH SOUNDS OF WORLD LANGUAGES – SUPRA SEGMENTAL FEATURES – THE VALUE OF SOUNDS: PHONEMES AND ALLOPHONES.

UNIT STRUCTURE

4.0 INTRODUCTION

Phonetics is an experimental science which studies speech sounds from three different perspectives:

Articulatory Phonetics deals with speech production by describing how speech sounds are produced by the human vocal tract, i.e. the organs of speech

Acoustics Phoneticsdeals with the physical properties of the speech sounds, i.e. they are studied as waves in the air and their physical properties such as intensity, duration and frequency.

Auditory Phonetics deals with how the human auditory system processes and detects the incoming signals of sound sequence produced by the speaker.

In this Unit, we will focus mainly on Articulatory Phonetics.

4.1LEARNING OBJECTIVES

The prime objectives of this Unit on Phonetics are:

- to know about the organs of speech, i.e. the organs involved in the production of sounds used in human language
- to understand how the articulators in the vocal tract produce speech sounds
- to understand the classification of speech sounds
- to know the IPA symbols, which represent all the possible speech sounds
- to learn how to transcribe speech sounds using IPA symbols
- to know how features like length, stress, tone, intonation are used to manipulate meaning.

4.2 ARTICULATORY PHONETICS

The production of speech sounds involves the organs of speech, which, in turn, constitute the human vocal tract. Thus, the *vocal tract* is the area from the nose and the nasal cavity down to the vocal cords deep in the throat. And the organs of speech (or articulators) include the lips, the teeth, the alveolar ridge, the hard palate, the velum or the soft palate, the uvula, the glottis and various parts of the tongue (see Fig 1 below).

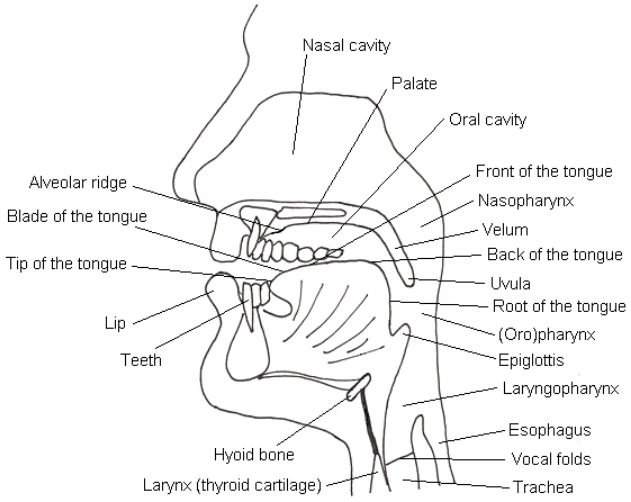


Figure 1 The Human vocal tract (the organs of speech)

Now, the four main components of speech production can be categorized as:

The airstream process: For the production of speech sounds, we need an air-stream mechanism. For most of the speech sounds, the basic source of air pressure is the respiratory system which pushes the air out of the lungs. The lungs enable humans to breathe as well as generate the required air-pressure for speech production (called pulmonic air-stream

mechanism),the other two sources of air-pressure are the glottis and the velum (called glottalicandvelaric air-stream mechanisms, respectively).

The phonation process: Phonation refers to the modulation of the vocal folds, which are parts of the glottis located in the larynx (phonation is, therefore, also known as the laryngeal process). Depending on the nature of the modulation of the vocal folds we have *voiced* and *voiceless* sounds (see 4.4.1 below). In case of *voiced* sounds, the vocal folds vibrate; in the case of *voiceless* sounds, they do not vibrate.

The articulatory process: The articulatory process constitutes movements of the tongue and the lips against the roof of the mouth (known as the hard palate), back of the hard palate (the soft palate or the velum) and the pharynx. The organs within the vocal tract which are used for production of speech sounds are called the articulators, which are of two types: passive articulators and active articulators

Place of articulation	**Active Articulator**	**Passive Articulator**
Bilabial	Lower lip (or lips)	Upper lip
Labio-dental	Lower lip	Upper teeth
Dental	Tongue tip	Upper teeth
Alveolar	Tongue tip or blade	Alveolar ridge
Post alveolar	Tongue tip or blade	Back of alveolar ridge
Retroflex	Tongue tip	Hard palate

Palatal	Front part of the tongue	Hard palate
Velar	Back of the tongue	Soft palate
Uvular	Back of the tongue	Uvula
Pharyngeal	Root of the tongue	Wall of pharynx
Glottal	Vocal folds	_

Table 1 Summary of places of articulation(Ashby and Maidment, 2005: 38)

LET US STOP AND THINK

For the production of each sound, both passive and active articulators are required.

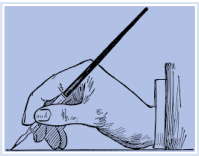
- The passive articulators do not move during the production of any sound. They are mostly located in the upper jaw.

The active articulators are those organs of speech which move towards the passive articulator.

The oro-nasal process: The oro-nasal process determines whether the airstream goes out through the oral cavity as for [t] or [s], or through the nasal cavity as for [m] or [n]. If the velum is raised to the back wall of the pharynx, then the nasal tract is closed and thus oral sounds are produced. If the velum rests in its own position and there is no closure between the velum and the pharynx, then air can also pass through the nasal tract. In this way, nasal sounds are produced.

CHECK YOUR PROGRESS

1. Writetwo similarities and differences of Phonetics and



Phonology?

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2. Find out at least two differences between the three branches of Phonetics?

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3. Why are the parts shown in the diagram of the human body known as organs of speech?

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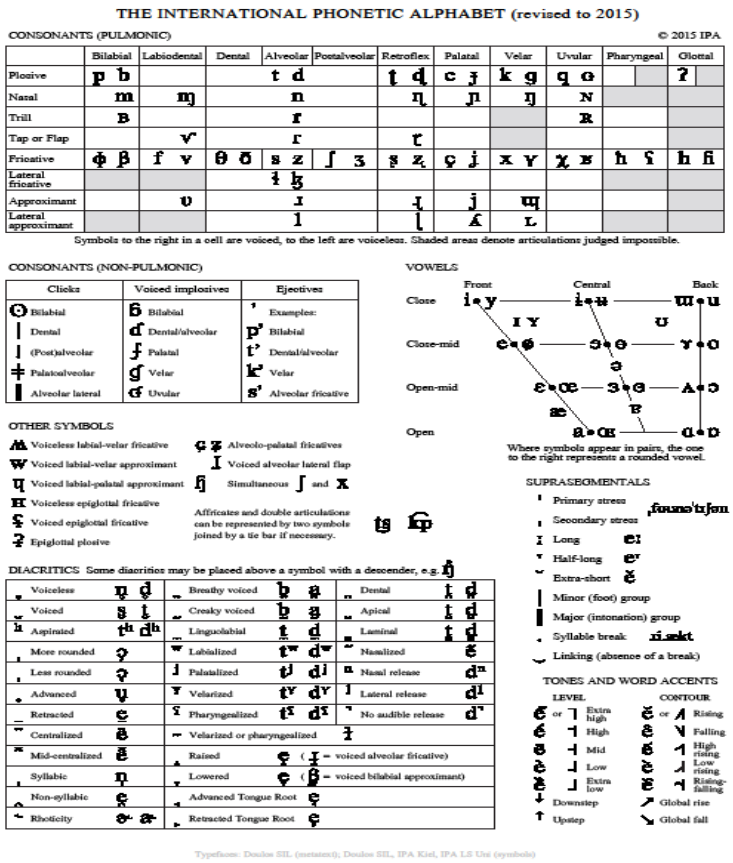
4. Practice how to draw the human vocal tract.

4.3 INTERNATIONAL PHONETIC ALPHABET AND PHONETIC TRANSCRIPTION

From a scientific perspective, all the speech sounds are assigned a phonetic symbol. Thus, we have an internationally accepted set of phonetic symbolsknown asthe International Phonetic Alphabet (IPA).

The IPA Chart (see below) presents a three-dimensional representation of all the sounds possibly made in human languages around the globe. For the two symbols within a

single cell, the right one is voiced and the left one is voiceless. Compare the first cell in the table: /p/ is voiceless and /b/ is voiced. In addition to this, the vertical columns designate different manners of articulation while places of articulation are presented in the linear order starting from bilabial to glottal. It also has some shaded areas which are combinations of features judged impossible to be articulated by the human vocal tract. For example, there is no *velar trill* in any language which would require the back of the tongue vibrating against the soft palate for multiple times.



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The International Phonetic Alphabet was first proposed and designed by the International Phonetic Association.International Phonetic Association is a body founded in 1886 in Paris by a group of leading phoneticians from France, Germany, Britain, and Denmark.

Now, phonetic **transcription** is the visual representation of speech sounds. Thus, the International Phonetic Alphabet is used for this purpose.

Broad transcription: The method of transcription that does not mention of minute phonetic details. This is often termed as phonemic transcription because it gives information only about the phonemes present in the particular word. The notion of phoneme is explained in the next Unit.

Narrow transcription: The method of transcription which shows minute phonetic details by using a wide range of additional symbols and, in many cases, diacritics.See Table 2 below.

	Broad transcription	**Narrow transcription**
please	/pliz/	[pl̥i:z]
trip	/trip/	[tr̥ɪp]
tenth	/tɛnθ/	[tɛn̪θ]

pin	/pin/	[pʰɪn]

Table 2 Examples of some English words with transcription

Broad transcription mentions only the phonemes, and are written within slashes (/ /). On the other hand, narrow transcription gives details such as allophonic variation (e.g. the /l/ phoneme in English is not produced exactly the same way before vowels (e.g. leak) and at the end of words (e.g. keel)), and are written within square brackets ([ ]). The small marks that are added to a symbol to modify its value are known as diacritics. Aspiration of plosives, vowels length, nasalization, dental articulation, secondary articulation, etc. (which are explained below) are marked by using diacritics.

STOP AND PRACTICE

Let's learn IPA symbols for some English vowels

[i:]	as in 's**ea**t'	'b**ea**t'
[i]	as in 's**i**t'	'b**i**t'
[e]	as in 's**e**t'	'p**e**t'
[æ]	as in 's**a**t'	'l**a**d'
[ə]	as in 'c**u**t'	'm**a**chine'
[ɑ]	as in 'c**a**rt'	'f**a**ther'
[ɔ]	as in 'c**o**t'	'p**o**d'
[u]	as in 'f**u**ll'	'm**oo**n'

STOP AND PRACTICE

Let's learn IPA symbols for some English consonants

[p]	as in	'**p**ea'	's**p**ike'	[b]	as in '**b**ee'
		'sno**b**'			
[t]	as in	'**t**ea'	'**t**rain'	[d]	as in '**d**ig'
		'**d**ream'			
[k]	as in	'**c**ream'	'**k**ite'	[g]	as in '**g**un'
		'**g**lass'			
[m]	as in	'**m**eat'	'plu**m**'		
[n]	as in	'**n**ight'	'visio**n**'		
[ŋ]	as in	'ri**ng**'	's**ing**'		
[f]	as in	'**f**ew'	'**f**ree'	[v]	as in '**v**ery'
		'**v**alley'			
[θ]	as in	'**th**igh'	'too**th**'	[ð]	as in'thy'
		'thee'			
[s]	as in	'**s**ea'	'**s**traight'	[z]	as in '**z**ink'
		'mai**z**e'			
[ʃ]	as in	'**sh**y'	'ma**ch**ine'	[ʒ]	as in'vision'
[ʧ]	as in	'**ch**ild'	'**ch**eap'	[ʤ]	as in '**j**u**dg**e'
		'fu**dg**e'			
[h]	as in	'**h**igh'	'**h**ill'		
[r]	as in	'**r**ight'	'ca**r**'		
[l]	as in	'**l**eft'	'p**l**ight'		
[w]	as in	'**w**e'	'**w**ill'		

4.4 SPEECH SOUNDS OF WORLD'S LANGUAGES: CONSONANTS AND VOWELS

There are approximately 7,106 languages in the world, which may be significantly different from one another in more than one way. One important distinction lies in their selection

of sounds for the sound inventory – every language differs not only in terms of the number of sounds they have in their inventory but also in terms of the quality of those sounds.

Though the human tract is capable of producing thousands of distinct sounds, only a few of them are used in human languages to form meaningful words. The class of possible speech sounds (which are either consonant or vowel sounds, or simply consonants and vowels. See 4.4. below) is finite and the number is countable. With their special vocal tract humans can produce as many as 600 possible consonants and 200 possible vowels. However, only a subset of this entire set is found in any human language. Technically, such speech sounds are known as *phonemes*. Thus, phonemes are either consonants or vowels. The average number of phonemes that a language uses is around 35.

Thus, every language has both consonants and vowels in their sound inventory. Note here that some phonemes are more frequently used than the others. For example, almost every language has a *t*-like or a*m*-like sound whereas an epiglottal stop /ʕ/or a bilabial trill /ʙ/ is rare to find. Similarly a high front unrounded vowel *i*is common across languages but a high back unrounded vowel *ɯ* is not common.

CHECK YOUR PROGRESS

1. What are the three types of airstream mechanisms?

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2. Why it is important to study the airstream processes for the study of speech sounds? Give two reasons

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4.4.1 Consonants

The production of consonant involves some kind of constriction in the vocal tract. During their production, the articulatorsmake considerable contact towards each other due to which an obstruction of the outward (for egressive sounds) or inward (for ingressive sounds) airflow is observed. The consonantal sounds are classified on the basis of some parameters:

Air-stream mechanism: Speech is actually a moving pressure of air which is made audible by the help of vocal apparatus. The source of air pressure in nearly all speech sounds is the lungs. Contraction of the diaphragm just below the lungs enlarges the lung cavity for the air to flow into the lungs. When the air is expelled from the lungs into the trachea, it is called the pulmonic **egressive** air-stream mechanism. Most of the human speech sounds are produced with an**egressive** air-streammechanism. Such sounds are called egressive sounds. If

the same air is inhaled inside the trachea to produce sounds, then we are using the pulmonic **ingressive** air-stream mechanism. Such sounds are called ingressive sounds. The air-pressure which has its source in the lungs is called **pulmonic**; if the source is the glottis, then it is called **glottalic;** on the other hand, if the source is velum, then it is called **velaric**.

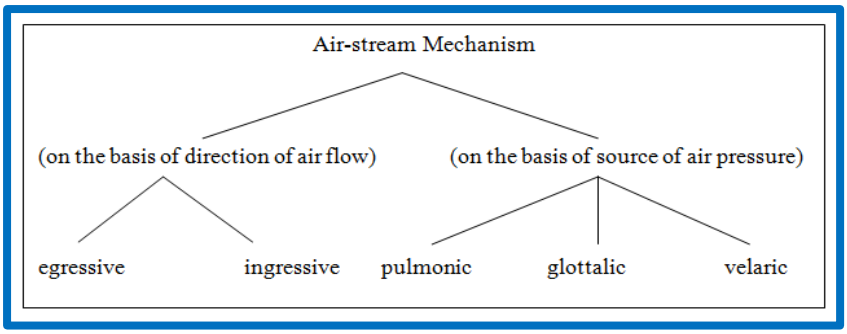


Figure 2 Types of air-stream mechanis

Voicing condition: When we talk, air from the lungs goes up the windpipe (or, the trachea) and into the larynx where it passes through two small muscular folds called the **vocal folds**. The larynx is a complex cartilage which contains the vocal folds inside the glottis. During the production of **voiced sounds**, the vocal cords vibrate (see Fig 2a below);during the production of **voiceless sounds**, they do not vibrate (see Fig 3 below).

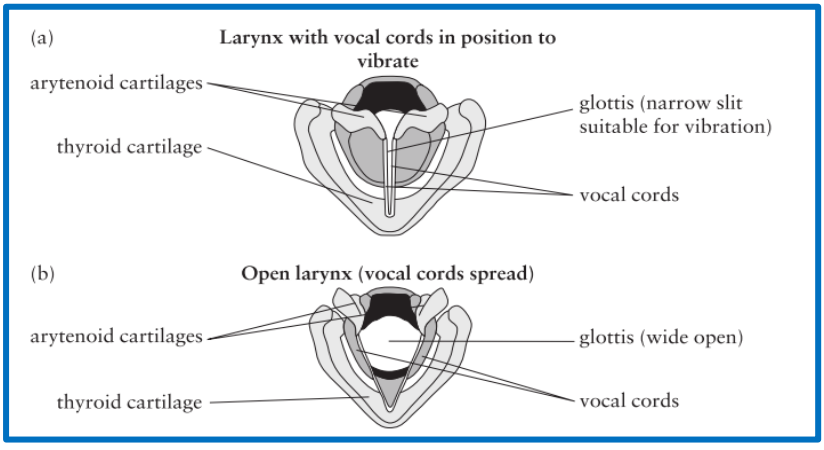


Figure 3 The Larynx

Oral/Nasal distinction: During the production of a sound, if the air passes through the oral cavity, then the sound is called an **oral** sound (e.g. the first two sounds in the English word *sing* [**si**ŋ]); and if the air passes through the nasal cavity, then the sound is called a **nasal** sound (e.g. the last sound in the word *sing* [si**ŋ**]). For oral sounds, the soft palate is raised to block the nasal cavity with a **velicclosure**(a closure made by a raised velum or the soft palate against the back wall of the pharynx to close the nasal tract), while for nasal sounds, the soft palate is lowered without a velic closure allowing the air pass easily through the nasal cavity.

Aspiration distinction: During the production of a sound, if the vocal cords are wide apart to produce an extra puff of air, such a sound is called an **aspirated** sound. For example, the plosives /p/, /t/, /k/ are aspirated in English in certain conditions. When aspirated these sounds sound like the first sounds of the Hindi words, फल 'fruit', थाल 'plate', and खाम 'envelop' respectively. Thus, for example, /p/ in *pin*is aspirated; it is unaspirated in *spin*.Thus, [p^h]and [p] (i.e. the aspirated and the unaspirated /p/) are the *allophone*s of /p/ (an allophone is any of the various phonetic realizations of a phoneme in a language, which do not contribute to distinctions of meaning). Note that some languages (e.g. many Indo-Aryan languages including Hindi and Assamese) use aspiration as a distinctive phonemicproperty. For example, the aspirated /p/in Hindi (i.e. the sound represented by the superscripted symbol [^{h}]) is a distinctive phoneme; as observed, a language like English, by contrast,doesnot use it as a distinctive property, i.e. they have it only at the allophonic level.

Place of articulation: The place of articulation indicates the point in the passive articulator towards which the active articulator moves. For example, if the tip of the tongue, an active articulator, moves towards the alveolar ridge, a passive articulator, then the sound produced is called a dental sound. The places of articulation used by the consonant sounds are:

1. **Bilabial:** Both the lips are involved in the production of bilabial sounds, e.g. [p], [pʰ], [b], [bʱ], [m], etc.
2. **Labio-dental:** Sounds produced with the lower lip as the active and upper teeth as the passive articulator, e.g. [f], [v], [ɱ], etc.
3. **Dental:** Sounds produced with the tip of the tongue as the active and the upper teeth as the passive articulator, e.g. [t̪], [d̪], [t̪ʰ], [d̪ʱ], etc.
4. **Alveolar:** Sounds produced with the tip or blade of the tongue as the active and the alveolar or the teeth ridge as the passive articulator, e.g. [t], [d], [s], [z], etc.
5. **Palato-alveolar or post-alveolar:** Sounds produced with the tip of the tongue as the active and the part just behind the alveolar ridge as the passive articulator, e.g. [ʃ], [ʒ], etc.
6. **Retroflex:** Sounds produced with the tip of the tongue as the active and front of the hard palate as the passive articulator. The tip of the tongue, however, rolls back itself to touch the hard palate, e.g. [ʈ], [ɖ], [ɽ], [ɭ], etc.
7. **Palatal:** Sounds produced with the front of the tongue as the active and the hard palate as the passive articulator, e.g. [c], [ɟ], etc.
8. **Velar:** Sounds produced with the back of the tongue as the active and the soft palate or velum as the passive articulator, e.g. [k], [g], [x], etc.

9. **Uvular:** Sounds produced with the back of the tongue as the active and the uvula as the passive articulator, e.g. [q], [G], [N], etc.
10. **Pharyngeal:** Sounds produced with the back or root of the tongue as the active and the back wall of the pharynx as the passive articulator, e.g. [ʕ], etc.
11. **Glottal:** Sounds produced with the help of both the vocal cords in the glottis, e.g. [ʔ], [h], [ɦ], etc.

Place of articulation	**Active Articulator**	**Passive Articulator**
Bilabial	Lower lip (or both lips)	Upper lip
Labio-dental	Lower lip	Upper teeth
Dental	Tongue tip	Upper teeth
Alveolar	Tongue tip or blade	Alveolar ridge
Post alveolar	Tongue tip or blade	Back of alveolar ridge
Retroflex	Tongue tip	Hard palate
Palatal	Front part of the tongue	Hard palate
Velar	Back of the tongue	Soft palate
Uvular	Back of the tongue	Uvula

Pharyngeal	Root of the tongue	Wall of pharynx
Glottal	Vocal folds	_

Table 3 Summary of the places of articulation (Ashby and Maidment 2005: 38)

Manner of articulation: The way in which the active and the passive articulator come into contact with each other for production of a particular sound is called the manner of articulation. Manner of articulation involves two types of constrictions.

The first type of constriction divides the sounds into the following two broad categories: **obstruents** and **sonorants**. Obstruents involve a constriction to allow either a voiced or voiceless airstream to pass through it. Sonorants, on the other hand, involve a type of wide constriction to allow a voiced airstream to pass through without any friction. Plosives, fricatives and affricates are obstruents because they include both voiced and voiceless sounds. Nasals, taps/flaps, trills, laterals and approximants are sonorants because they are naturally voiced and lack voiceless counterparts.

LET US STOP AND THINK

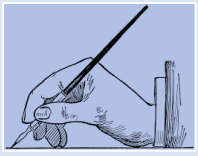
Obstruent	*Sonorant*
Plosives	Nasals
Fricatives	Taps/flap
Affricates	Trills
Laterals	
Approximants	

The second type of constriction divides the sounds into the following types:

1. **Stops:** Stops can be divided into two types: oral stops and nasal stops.

Oral stops which have the passage of air coming though the oral cavity. They are produced with a complete closure of the oral cavity followed by a sudden release of the air-pressure. This closure may happen at any place of articulation. These may either be voiced or voiceless, e.g. [p], [b], [k], etc. Oral stops are also called **plosive**s.

Nasal stops have the passage of air coming through the nasal cavity. They are produced with a complete closure in the nasal cavity followed by a sudden release of the air-pressure. The soft palate is lowered to block the oral cavity and air passes through the nasal cavity, e.g. [m], [n], [ŋ], etc. Nasal stops are also called **nasal**s.



CHECK YOUR PROGRESS

1. In what respects do Oral stops differ from nasal stops?

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2. Do you have such stops in your language?

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3. **Fricatives:** These sounds are produced by narrowing of the active and the passive articulators so that the air makes an audible friction. These may either be voiced or voiceless, e.g. [s], [z], etc.
4. **Affricates:** These sounds are a combination of a plosive and a fricative at the same place of articulation. Thus, affricates are produced with a complete closure of the oral cavity (i.e. like a plosive is produced) and a slow release of the air pressure with audible friction (like a fricative is produced), e.g. [ʧ], [ʤ], etc.

5. **Taps/flaps:** These are the sounds produced by the tapping of the active articulator against the passive articulator for only once. The two articulators stay in contact for a very short period which is even shorter than a plosive, e.g. [ɾ], [ɽ], etc.
6. **Trills:** These are the sounds produced by a series of a very rapid tapping of the active articulator against the passive articulator for more than once, e.g. [ʙ], [r], etc.
7. **Laterals:** These are sounds produced with an airstream which escapes through the sides of the tongue. They involve a partial closure of the articulator. Various kinds of *l* –like sounds are the result.

   Approximants: These are the sounds produced with the active and the passive articulators coming into close approximation to each other but without any audible friction, e.g. [j], etc.

   On the basis of the aforementioned six parameters of consonant classification, consonants are divided into

various types and they are described accordingly, e.g. the consonant /p/ will be described as *voiceless unaspirated bilabial plosive*. Some examples are given in Table 3 below:

	Voicing condition (for obstruents)	**Aspiration (for plosives)**	**Place of articulation**	**Manner of articulation**
/p/	Voiceless	unaspirated	bilabial	plosive
/b/	Voiced	unaspirated	bilabial	plosive
/pʰ/	Voiceless	aspirated	bilabial	plosive
/m/	-	-	bilabial	nasal
/ʈ/	Voiceless	unaspirated	retroflex	plosive
/r/	-	-	alveolar	trill
/ɣ/	Voiceless	-	velar	fricative
/ɬ/	Voiceless	-	alveolar	lateral fricative
/j/	-	-	Palatal	approximant

Table 4 Some pulmonic consonants with their descriptions

LET US STOP AND THINK

How are the manners of articulation different from each other?

4.4.2 Vowels

Vowels are sonorant sounds (naturally voiced) having an air flow without any obstruction, an open vocal tract, and a lowered jaw. They are produced by raising either the front or back of the tongue towards the hard palate. For the production of a vowel, the major articulator is the tongue body while the lips also play an important role, i.e. the lips may be rounded or unrounded. Vowels are normally described and classified with reference to three majorcriteria:

1. **Height of the tongue:** It refers to the heightinside the oral cavity to which the tongue is raised towards the hard palate. The height of the tongue is crucial to determine the quality of a vowel. Generally, three or four degrees of height are recognized: high, mid (high-mid and low-mid), and low. Tongue height can also be described as close, mid-close, mid-open, and open. These two terminologies practically refer to the same parameter. For example, if the tongue is raised to the closest point of the hard palate, then the vowel produced will be a high/close vowel such as [i] and [u]; if the tongue is raised only slightly leaving a wide gap between the tongue and hard palate, then the vowel produced will be a low/open vowel such as [a]; and if the tongue positions between these two extreme points in the vowel space, then the vowel produced will be a mid vowel such as [ɛ] and [o], etc. High vowels are produced by raising the tongue towards the hard palate or soft palate and low vowels are produced by lowering the tongue body away from the palate to make a wide gap.

2. **Position of the tongue:** Position of the tongue refers to the part of the tongue that is raised – front, centre, or back.

The part of the tongue which is raised towards the hard palate is also important for classifying a vowel: if the front part of the tongue is raised toward the hard palate then, front vowels such as [i], [e], [ɛ] are produced; if the back part of the tongue is raised towards the soft palate, then back vowels such as [u], [o], [ɔ] are produced; if the central point of the tongue is raised towards the mid-point of the hard palate and the soft palate, then central vowels such as [ɨ], [ʉ] are produced. Front vowels involve the front part of the tongue; back vowels involve the back part of the tongue.

3. **Lip rounding**: Lip rounding is the parameter which defines the kind of opening made at the lips. Vowels, during their production, may have rounded lips or spread lips. Rounded vowels are produced with rounded lips and unrounded vowels are produced with unrounded lips. For example, among the **cardinal vowels**(see 4.4.2.1 below),[i], [e], [ɛ] are unrounded while [u], [o], [ɔ] are rounded.

LET US STOP AND THINK

High vowels are produced by raising the tongue towards the hard palate or soft palate and low vowels are produced by lowering the tongue body away from the palate to make wide gap.

Front vowels involve front part of the tongue and back vowels involve back part of the tongue.

Rounded vowels are produced with rounded lips and unrounded vowels are produced with unrounded lips.

4.4.2.1 Cardinal Vowels

The area within the oral cavity where the articulation of vowels takes place is known as **vowel quadrilateral.**On its vertical axis, height of the tongue is represented while the horizontal axis represents the position of the tongue. It is a useful tool to describe vowels of world's languages both in terms of articulatory and auditory specifications. The vowel quality, described on the basis of the three major parameters can be related to one of a set of language-independent reference points known as **cardinal vowels**. These can also be considered as landmarks in the auditory space provided by the vowel quadrilateral. Cardinal vowels are categorized into two types: primary (see Fig 3) and secondary (see Fig 4). The primary cardinal vowels are [i e ɛ a ɑ ɔ o u] of which the first five vowels are unrounded and the last three vowels are rounded.

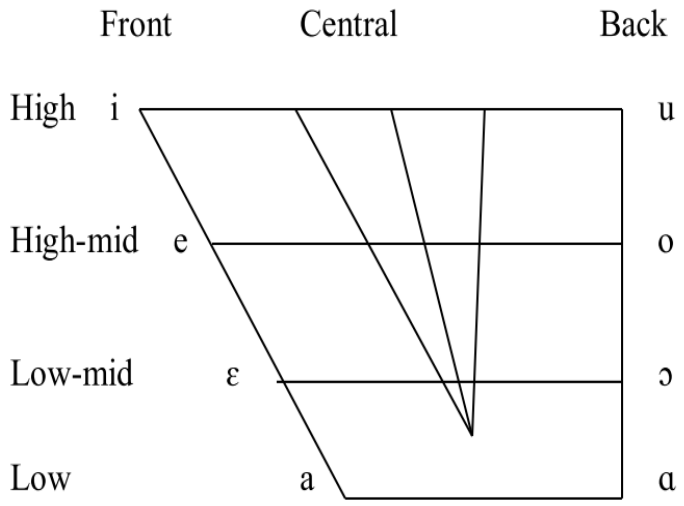

Figure 3 Primary Cardinal Vowels

The secondary cardinal vowels have the opposite lip rounding against the primary ones at the same place of articulation. Hence, the counterparts of the first five unrounded primary vowels are rounded while the counterparts of the last three rounded primary vowels are unrounded. The secondary cardinal vowels are [y, ø, œ, œ, ɒ, ʌ, ɤ, ɯ] and the first five of them are rounded while the last three are unrounded.

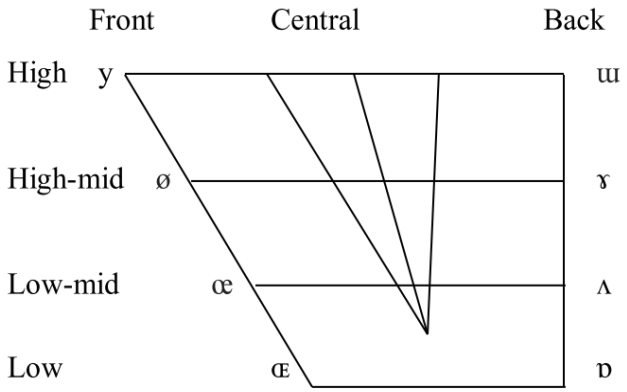

Figure 4 Secondary cardinal vowels

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Primary cardinal vowels are opposite to secondary cardinal vowels in terms of lip rounding.

4.4.2.2 Vowel Quality

Two more parameters of classifying vowels in languages are:

Vowel length: Some languages make distinctive use of length of a vowel. Long and short vowels behave differently. For example, in English, the vowel in *it* and the vowel in *eat* are different in length, i.e. the one in *it* is short; the one in *eat* is long. Thus, the two words mean different things. By way of another example, in the Maori language, spoken in New Zealand, short and long vowels are distinctive and make difference in the meaning of the words, e.g. [kiː] 'to say' vs. [ki] 'at'; [hokoː] 'to buy' vs. [hoko] '20 times', etc.

Nasalisation: The position of the velum is important to distinguish between oral and nasal vowels. If the velum is raised to close the nasal cavity, then the vowel produced is an oral vowel; if the velum is lowered to close the oral cavity, then the vowel produced is a nasal vowel. The IPA diacritic used for nasalisation is '~'. For example, [i], [a], [u] are oral vowels and [ĩ], [ã], [ũ] are nasal vowels. Nasal vowels are found in languages like French and Portuguese: in French, [fɛ] means 'fact' while [fɛ̃] means 'end'; [fo] means 'false' while [fõ] means '(they) do'.

Nasalised vowels are produced with a lowered velum, allowing the air to escape simultaneously through the nose and the oral cavity.

4.4.3 Diphthong

All the vowels described above are monophthongs. Monophthongs are also called pure vowels as during their production, the position of the tongue does not change. On the other hand, a diphthong is a vowel in the production of which

the position of the tongue changes. Thus, a diphthong consists of the quality of two different vowels: the first vowel undergoes a rapid transition from its own quality towards the second vowel creating a sequence of vowels. A diphthong is thus a glide from one vowel to another. Thus, /eɪ/, for example, is a diphthongwhere two vowels are involved.

Some English words with diphthongs are: /ɪə/ as in *hear*, *deer*, *beer*; /eə/ as in *chair*, *their*, *air*; /ʊə/ as in *tour*, *poor*, *sure*; /eɪ/ as in *say*, *day*, *pray*; /aɪ/ as in *pie*, *fight*, *eye*; /ɔi/ as in *oil*, *voice*, *boy*; /eʊ/ as in *slow*, *so*, *bow*; and /aʊ/ as in *owl*, *out*, *found*.

The size of the vowel inventory in a language can be very small, for example, Arabic has only three vowels. British English, by contrast, has twenty vowels. Some languages increase the size of their vowel inventory by the use of modifications such as nasalization, length and some other qualities like rhotacisation and widening, etc.

LET US STOP AND THINK

The size of the vowel inventory in a language can be very small, for example, Arabic has only three vowels; or, a language can have as many as 10 vowels or above. Some languages even increase the size of their vowel inventory by the use of modifications such as nasalization, length and some other qualities like rhotacisation and widening, etc.

4.5 SUPRASEGMENTAL FEATURES

As observed, phonemes are different from each other in terms of voicing, place and manner of articulation and so on. For example, the sound /p/ is a *voiceless bilabial plosive* while /b/ is a *voiced bilabial plosive*. Hence, the only difference between /p/ and /b/ is voicing – absence or presence of it. On the other hand, /m/, which is a *voiced bilabial nasal*, differs from /p/ and /b/ in terms of manner of articulation. Such characters are generally known as segmental features (or, distinctive features).

But languages make use of also of suprasegmental features to express meaning. Length, pitch variation, stress, tone and intonation are some suprasegmental features.

4.5.1 Length

As already observed, sounds may differ in length, e.g. the vowel in *beat* is longer than the vowel in *bit*. Thus, as is clear from the example above, (British) English uses length of a sound to change the meaning of a word. This is true also of Scottish English: [wik] is 'week' but [wi:k] is 'weak'.Similarly,in Korean, [mal] is 'horse' but [ma:l] is 'speech' (note that : is used with a symbol to mean that the sound is comparatively longer).

Again, low vowels are longer than high vowels; voiceless consonants are longer than voiced consonants and, voiceless fricatives are the longest consonants of all.

Vowels can be longer for other reasons as well, e.g. vowels before voiced consonants are always longer than vowels

before voiceless consonants. Thus, in English, the vowel in *bad* is longer than the vowel in *bat.*

Similarly, some languages make contrast between short consonant and long consonants. Long consonants are termed as **geminate**s. Italian is such a language which has contrastive length in consonants: [nɔnno] is 'grandfather' but [nɔno] is 'ninth'; [pappa] is 'Pope' but [papa] 'porridge'.

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Some langauges make contrast between short consonant and long consonants. Long consonants are termed as geminates. Italian is such a language which has contrastive length in consonants: [nɔnno] 'grandfather' vs. [nɔno] 'ninth' and [pappa] 'Pope' vs. [papa] 'porridge, baby food'.

4.5.2 Pitch

Pitch is the degree of emphasis given to make a word or a syllable more prominent than the others. For example, 'Who saw YOU?' vs. 'WHO saw you?';'Did you say CONflict?' vs 'Did you say conFLICT?'.CONflict is a verb when the pitch of the first syllable is higher; it is a noun when the pitch of the second syllable is higher, i.e. conFLICT. Thus, English clearly has pitch variation. Note that the variation in the example is distinguishing only the grammatical category of the words (i.e. from verb to noun or vice-versa) but not their core meaning.

Pitch generally does not affect the meaning of the words in languages.

4.5.3 Stress

Stress is anothersuprasegmental feature used by most languages. In languages which have stress, one or more syllables in each word or phrase is more prominent than others. Thus, stressed syllables have louder sound, greater frequency, higher pitch and longer vowels and consonants than unstressed syllables. Hence, they tend to be produced with greater amount of energy than unstressed syllables. Usually, the marker (') is used (in a standard dictionary) to mark the stressed syllable as in *to'day.*

English, like many other Germanic languages, makes a noun-verb opposition by placing stress in opposite syllables, e.g. ‘an 'insult’ vs. ‘to in'sult’; ‘his 'conduct’ vs. ‘to con'duct’, etc. It is apparently evident from the use of stress mark (') that the nouns have stress on the first syllable of the word while verbs have stress on the last syllable in English.

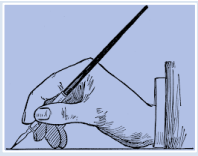
4.5.4 Tone

In tonal languages, the pitch of a word can change the meaning of the word. For example, in Mandarin Chinese, the word [ma] can be pronounced in four different ways. When it is pronounced with a high and level pitch, it means ‘mother’; with a high-falling pitch it means ‘scold’;with a high-rising pitch it means ‘hemp’;while with a low falling-rising pitch it means ‘horse’. In contrast to the four-way distinction of tone in Mandarin Chinese, Thai makes use of five contrastive tones for a single word.For example,the word [naa] with a low-falling pitch is ‘a nickname’;with a high-falling pitch it means

'face';with a high-rising pitch it means 'aunt';with a low falling-rising pitch it means 'thick';and with a mid falling pitch it means 'field'. There are kinds of languages which make use of only two tones – high and low such as Bantu languages spoken in Africa and some Kiki Chin languages in North East India.

4.5.5 Intonation

Pitch that operates over phrases and sentences is called intonation. It mainly plays a role in determining meaning of an utterance and the emphasis over that constituent for specific purpose. Compare the sentences - 'Did YOU see the tiger?' vs. 'Did you see the TIGER?'.The first sentence puts emphasis on the subject of the sentence and rest of the sentence is plain with no or little emphasis, hence, it has a falling intonation towards the end. The second sentence puts emphasis on the object of the sentence and hence, has a rising intonation towards the end of the sentence. There are some universal properties of intonation to convey linguistic information – most languages signal the completion of a grammatical unit such as a declarative sentence by a falling pitch and an interrogative sentence with a rising pitch.



CHECK YOUR PROGRESS

1. How is stress different from tone?

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2. What is the basic difference between tone and intonation?

4.6. SUMMING UP

In this Unit, we have learnt about the most basic structure of language - sound. Phonetics is concerned with the objective description and analysis of all aspects of speech sounds. We have learnt the production mechanism of speech sounds using air-stream and various organs of speech. The ways how consonants and vowels are articulated by involving different places, manners as well as articulators are also of importance to understand the nature of speech sounds. We have briefly practiced to transcribe words using IPA symbols which can scientifically represent all the possible speech sounds. In this Unit, we were introduced to some concepts like length, stress, tone, intonation used mainly to manipulate meaning of words. These are some aspects of speech that affect units larger than a single speech sound.

4.7 ASSESSMENT QUESTIONS

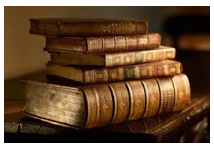
A. Answer the following questions.

1. Draw the human vocal tract indicating all the organs of speech.

2. Differentiate between consonants and vowels.
3. What is air stream mechanism? What are its types?
4. What are the parameters of classifying consonants?
5. What are the active and passive articulators for each of the places of articulation of consonants?
6. Explain the manners of articulation of consonants.
7. What are the parameters of classifying vowels?
8. Explain the suprasegmental features.

B. State whether the following statements are *true* or *false*. If false, then re-write the statement correctly:

1. Phonetics is a scientific study of sounds we hear and produce.
2. In ingressive air stream mechanism, the air is inhaled inside the oral cavity.
3. Depending upon source of air pressure for sound production, air stream mechanism is divided into 3 types.
4. Voiceless and voiced sounds are different in terms of the cavity through which air passes through during their production.
5. The hard palate acts both as active and passive articulator.
6. All the sonorant sounds are naturally voiced.
7. Lip rounding is a defining parameter for vowels.
8. All languages use vowel length distinctively.
9. Geminate consonant are equivalent to long vowels.
10. Aspiration is a characteristic of fricative sounds.



4.8 REFERENCES AND RECOMMENDED READINGS

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JOT DOWN IMPORTANT POINTS

UNIT 5 PHONOLOGY

UNIT STRUCTURE

5.0 INTRODUCTION

Phonology is the study of how speech sounds are used in a language to form syllables and words and to make differences of meaning. In other words, it studies the organization of sounds in a given language. Thus, the major concepts discussed in Phonology are: phoneme and allophones, phonotactic constraints, syllables, phonological rules and processes, etc.

5.1 LEARNING OBJECTIVES

The prime objectives of this Unit on Phonology are:

- to know about values of sounds – whether they are distinct or not

- to understand how sounds behave differently in different languages
- to understand the language-specific patterning of speech sounds
- to know the importance of organising sounds into syllables
- to learn about language-specific restrictions on sounds and sound combinations

5.2 THE VALUE OF SOUNDS: PHONEMES AND ALLOPHONES

Phonemes (recall that phonemes are minimal sound units used in a language)are contrastive phonological segments. This is established by using what is called the *minimal pair*. A minimal pairis a pair of words that differ by a single phoneme. For example, the English words *pin* and *bin* form a minimal pair because they differ by a single phoneme: /p/ and /b/ (recall that phonemes are written within slashes) occur exactly in the same environment, i.e. word-initial position followed by the same sequence of sounds-*in* (this is known as *identical immediate environment*). But this difference has led to a difference in meaning, i.e. *pin* and *bin* do not mean the same thing. These two phonemes, /p/ and /b/, are thus contrastive phonological segments.

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In Assamese, [bʱal] ‘good’;[pal] ‘turn’; [pʰal] ‘side’ are minimal sets. All the words, as sounds, differ *minimally*, and consequently they differ in meaning. Hence, they constitute minimal pairs.

Therefore, /p/, /pʰ/, and /bʱ/ are different phonemes in Assamese.

On the other hand, **allophones** are the different realisations of a single phoneme in specific situations. Allophonic realisations are predictable. For example, in English, the phoneme /p/ is realised as an aspirated plosive if it occurs in the initial position as in [pʰin] ‘pin’ (recall that allophones are written within square brackets []); it is realised as an plain (i.e. unaspirated) plosive if it occurs in the word-final position as in [tip] ‘tip’; or in a consonant cluster as in [spin] ‘spin’. Hence, the phoneme /p/ has two realisations in English as represented below:

/p/ → [pʰ] occurs in word-initial position

/p/ → [p] occurs elsewhere

5.2.1 Phonological Distribution

The three types of phonological distributionthatare relevant in identifying the status of phonemes and

allophones are the following:

Complementary distribution: If two sounds occur in a *mutually exclusiveenvironment* (i.e. one sound never occurs where the other sound occurs), then the two sounds are said to be in*complementary distribution*. Sounds in complementary distribution are allophones of a phoneme. For example, in [pʰin] and [hip], the allophones [p] and [pʰ] appear in different environments (i.e. one in the word-initial position, the other the word-final position); they are, therefore, allophones of the same phoneme /p/.

Contrastive distribution: If two sounds occur in an *identical immediate environment*(i.e. their immediately preceding or following sound are the same), then the two sounds are said to be in *contrastive distribution*.Two sounds in contrastive distribution are phonemes. For example, in /pin/, /bin/, /tin/, and /sin/, the sounds /p/, /b/, /t/, and /s/ appear in the same environment; they are, therefore, different phonemes in English.

Free variation: When two sounds may occur in an identicalimmediate environment without causing a change of meaning, then they are in free variation, e.g. the word *stop* may be pronounced with a plain unaspirated[p], [stɑp], or with a glottalized[pˀ], [stɑpˀ]. In this particular example allophones are in free variation. But, free variation is possible in the case of phonemes, too, e.g. The word *economics* may be pronounced with /i/ or /ɛ/ in the first syllable; although individual speakers may prefer one or the other and one may be more common in some dialects of English than others.

Distribu-tion	Environment	Meaning of carrier word	Status
Contrastive	Identical immediate (exactly same)	Different	Phoneme
Comple-mentary	Mutually exclusive (completely different)	Same	Allophone
Free variation	Identical immediate (exactly same)	Same	Allophone /Phoneme

Table 1 Summary of phonemes and allophones

CHECK YOUR PROGRESS

1. How are complementary distribution and free variation different from each other? Find some more examples of phonemes in free variation.

5.3PHONOTACTIC CONSTRAINTS

Restrictions on possible combinations of sounds are known as phonotactic constraints. For example, languages generally prefer syllables made up of a consonant (C) first, and a vowel (V) second, but some languages allow a syllable to begin with more than one consonant. Thus, English, for instance, allows upto three consonants to start with a word (e.g. *spree* - CCCV), but note that they cannot be any consonant, i.e. three consonants are possible provided the first is /s/, the second is /p/, /t/, /k/, and the third is /l/, /r/, /j/, or /w/ (e.g. *spleen*, *strength*).

Some issues involved in phonological constraints are: which sounds and sound patterns are common/rare; never occur/always occur in the world's languages; explanation for these tendencies of occurrence, and so on.

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Some constraints:

- Certain sounds such as [ŋ], [ɲ] do not appear in word-initial position of a word in many languages such as English and Indo-Aryan languages like Hindi, Assamese, Bangla.
- However, words can start with such sounds in Tibeto-Burman languages, e.g. [ŋa] 'fish' in Manipuri;[ŋo] 'cow'in Tai.

- Some consonant sequences such as [tb] and [nl] are allowed in word-initial position in no language of the world.
- Consonant sequences such as [pt] and [ps] are not allowed in English in word-initial position; but they are allowed in Latin. Hence, Latin words 'Ptolemy' and 'Psychology' are pronounced as [tolemɪ] and [saikələʤɪ] in English.

5.4 SYLLABLES

5.4.1 Syllabification

Syllable is a phonological unit which is a grouping of sounds according to language-specific rules. The obligatory component of a syllable is a vowel, which provides the nucleus of the syllable. Consonants before the vowel form the **onset** of the syllable while consonants after the vowel forms the **coda**. Nucleus and coda together form another unit within the syllable known as rhyme.

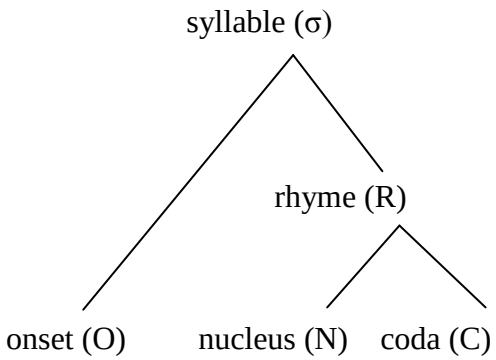

Figure 1 The Structure of a the syllable

Presence of more than one consonant makes an onset/coda a complex onset/coda. For example, the English word ‘brick’ [brik] has a complex onset while ‘sound’ [saund] has a complex coda. Similarly, more than one vocalic elements (a diphthong or a long vowel) may be present in the nucleus of certain syllable which makes it a complex or heavy nucleus. For example, English word ‘bite’ [baɪt] has a diphthong in the syllable nucleus.

A syllable with no coda is known as an **open syllable**. Thus, English monosyllabic words ‘go’, ‘tea’, ‘see’ are open syllables. On the other hand, a syllable with one or more coda consonants make a syllable a **closedsyllable**, e.g. English monosyllabic words ‘right’ [raɪt], ‘string’ [striŋ], ‘egg’ [eg], etc.

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Open syllable as in	*new* [nɪʊ]	*tow* [təʊ]
Closed syllable as in [məɹ.tər]	*transit* [tran.zɪt]	*mortar*
Complex Onset as in	*plain* [**pl**eɪn]	*grow* [**gr**əʊ]
Complex Coda as in [bræ**nd**]	*crisp* [krɪ**sp**]	*brand*

As observed, vowels generally tend to occupy the position of a nucleus while consonants occupy the position of an onset of a coda. It is also remarkable that in languages which allow CC onset in a syllable, it is more likely for a sonorant (e.g. a glide like [j] or [w]; a liquid [l]; or [r]) to occupy the second position (i.e. near the nucleus) while an obstruent (like [p], [t], [k]) generally occupies the first position (recall that sonorants are vowels, nasals, and other vowel-like consonants; obstruents are consonants that are produced with an obvious obstruction of the air flow, i.e. plosives, fricatives, and affricates). That a sonorant follows the obstruent is clear from the English words like 'play' [plei], 'train' [trein] and so on. Thus, languages do not have words or syllables of the following form: *[lpei], *[rtein], etc. where the obstruent follows the sonorant. Thus, the first principle of syllabification is the following:

The sonority of a syllable increases from the beginning in the onset, peaks at the nucleus and then decreases towards the coda.

[Note that sonority means the *inherent* loudness of a sound. Vowels are more sonorous than consonants. For example, if one says the vowel [a], he will produce a much louder sound than if he says the stop [t]. Being more sonorous makes a sound more suitable to be a nucleus of syllable and also makes it a favoured candidate to be closer to a nucleus. Thus, in a syllable the nucleus is represented as a peak of sonority].

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Sonority scale: Vowels > Glides > Liquids > Nasals >Obstruents

5.5 PHONOLOGICAL RULES

Adding aspiration to the word-initial voiceless plosive in English (see Section 5.2 above) and devoicing word-final obstruents in Russian (see Section 5.7 below) are some of the examples of the many regularities that the phonology of languages exhibit. These regularities are described as **phonological rules.** A speaker's knowledge of phonological rules allows him to translate phonemes into actual speech sounds; knowledge of these rules of part of the speaker's (unconscious) linguistic competence. Thus, for example, the native speaker of English pronounces the word 'pin' as [pʰɪn] rather than [pin] because the phonological rule that the word-initial voiceless plosive in English (i.e. /p/ in the example) is aspirated is part of his linguistic competence (note, however, that phonological rules are generally language-specific). By way of another example, the nasal /n/ is realized as [ŋ] when it occurs before a velar consonant. Thus, the nasal /n/ before /g/, (a velar consonant) in 'I can go', for example, will be realized as [ŋ].

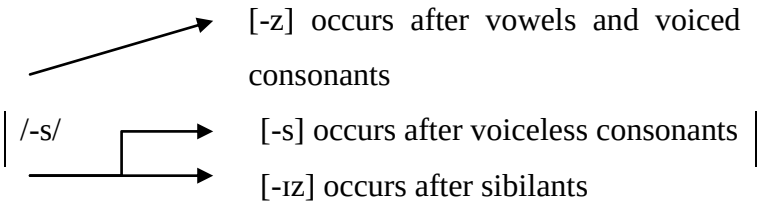
We can represent this phonological rule as discussed above as A → B / C _ ; or, A → B / _ D. Here 'A' is the sound that is affected by the rule, 'B' is the result of the (unconscious) application of the rule, 'C_' or 'D_' is the

environment in which the rule applies. By 'C_', we mean that C comes before the sound in question; by '_D' we mean that D comes after the sound in question. the blank, on the other hand, represents where the sound appears. Thus, the phonological rule where a nasal changes to a velar consonant can be represented as /n/→[ŋ]/ _ D (where D is /g/, a velar consonant).

5.5.1 Morphophonological Rules

Morphophonologyis the study of the different phonemic shapes of the allomorphs of particular morphemes. Morphophonological rules are generally applied across morphemes or word boundaries. For example,the plural morpheme of a noun in English (i.e. -s) has three types of allomorphs, each occurring in different phonological environments: [-z], [-s] and [-ɪz].

- [-z] occurs after the vowels and voiced consonants as in 'bees', 'dogs', and 'lambs', etc.
- [-s] occurs after the voiceless consonants as in 'cats', 'peaks', etc.
- [-ɪz] occurs after sibilants as in 'horses', 'roses', etc.



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Allomorphs are different phonemic shapes of the same morpheme. The concept of morpheme is discussed in the next Unit in this Module.

5.6 PHONOLOGICAL PROCESSES

Phonemes undergo changes due to various factors such as historical change of a language or due to phonetic motivation of articulatory ease and ease of perception. These changes are known as**phonological processes**. Some of the well-known phonological processes are discussed below.

1. **Assimilation**: A sound changes to become more similar to its immediately adjacent sound(s) in phonetic features, e.g. *ten mice* > /tem mais/; Latin /octo/ 'eight' > /otto/.Assimilation can be to a preceding sound or a following sound, and can be partial or complete.

   Some of its sub-types are:*place assimilation*, *spirantization*, *palatalization*, *devoicing*, *voicing*, *vowel harmony*.

3. **Dissimilation:** A sound becomes different in phonetic features from its neighbour or from its adjacent sounds. Thus, it is the opposite process of Assimilation. For example, in some dialects of English, 'chimney' is pronounced as 'chimley'. In the example, a (nasal + nasal) cluster becomes a (nasal + lateral) cluster.

4. **Insertion or Epenthesis:** A sound is inserted between two

other sounds. For example, in some dialects of English, ‘incredible’ [inkredıbl] is pronounced as [inkəredıbl] where a schwa /ə/ is inserted between two consonants.

5. **Deletion or Truncation:** A sound is deleted, e.g. the word ‘psychology’ is borrowed into English from Greek, where the word begins with the cluster /ps/; but this word is pronounced in English without the initial sound [p] as [saıkələdʒı].

7. **Coalescence:** Two sounds combine to become one sound, which retains some features of each of the contributing sounds. For example, in French, [kauz] ‘cause’ is pronounced as [koz] where two sounds [a] and [u] have coalesced into one single sound, i.e. [o].

8. **Metathesis:** The order of two sounds is reversed. For example, in some American English dialects, ‘ask’ is pronounced [aks]; ‘animal’ is pronounced as [aminal].

9. **Compensatory lengthening:** When one sound is deleted, its adjacent sound gets simultaneously lengthened. For example, in the historical development of Latin, voiceless fricatives were deleted before a nasal consonant as in the change of [kasnus] ‘grey’ to [kanus] with a deletion of the fricative sound [s] and then the adjacent vowel was simultaneously lengthened and pronounced as [ka:nus].

10. **Reduplication**: One or more segments are copied or reduplicated. It can be partial or complete. For example, in Indonesian, complete reduplication happens as in [rumah]‘house’ but [rumah-rumah] ‘houses’; in Tagalog, partial reduplicationhappens as in [sulat] ‘writing’ and [su-sulat] ‘will write’.

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Assimilation, dissimilation, coalescence and compensatory lengthening are phonological processes known as **modification-type processes** because they involve some kind of modification of the target segments.

Insertion, deletion, metathesis and reduplication are known as **whole-segment processes** because they target the whole segment instead of only some characters of the sound segment.

5.7. SUMMING UP

In this Unit, we have seen that contrast of phonetic differences may signal the distinction between words in terms of meaning. Such words which make a contrast only in one sound are called minimal pair and indicate the presence of phonemes while in some other words, the same phonetic differences may not signal any difference in meaning and the sounds, then are called allophones. Phonology also talks about how patterning of the sounds is done in languages. Pronunciation of sounds often results from phonological processes which are different from language to language. In this Unit, we have also learnt about the notion of syllables which is a structure that specifies how sounds of different types can be combined to form meaningful words

5.8 ASSESSMENT QUESTIONS

1. Answer the following questions briefly.

a. What is a minimal pair?

b. What is the difference between contrastive and complementary distributions?

c. What do you understand by the term *phonotactic constraint*?

d. What are the elements of a syllable?

e. What is sonority?

f. What is reduplication? Is it there in your language?

2. State whether the following statements are *true* or *false*. Rewrite the false statements correctly.

a. All the sounds produced by the human vocal system are allophones.

b. In a language, if [kisim] means 'beard' and [kiʃim] means 'warm', then [s] and [ʃ] are two different allophones in that language.

c. Phonemes appear in mutually exclusive distribution.

d. Morphophonological rules are generally applied within morpheme boundary.

e. The Latin word 'psychology' is pronounced as [psaikələʤɪ] in English.

f. A syllable with no coda is known as a closed syllable.

g. The obligatory component of a syllable is the onset.

h. Nucleus and coda together form a unit within the syllable known as rhyme.

i. Sometimes, in Indian English, [riksa] 'rickshaw' is pronounced as [riska]. This is an example of reduplication.

j. In truncation, two sounds combine together to form a third sound.

5.9 RECOMMENDED READINGS

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Odden, David., .*Introducing Phonology*. Cambridge: Cambridge University Press.2005

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JOT DOWN IMPORTANT POINTS

UNIT 6: MORPHOLOGY

UNIT STRUCTURE

6.0 INTRODUCTION

The study of words and formation of words is called

morphology. Every language has different ways to use morphemes for expressing meaning **(**a morpheme is the smallest grammatical unit in a language).Thus, in English,for example, the plurals are formed by adding a morpheme to the noun as in [cow + -s] = [cows] where the morpheme '-s' indicated plurality. But the Nigerian language Yoruba uses a separate word to form a plural as in [okunrin] '(the) man' and [awonokunrin] '(the) men' (Haspelmath, 2002). On the other hand, some other languages such as German use no morpheme or word overtly to form plural of a noun. In German, the plurals of a noun are formed by replacing a back vowel, e.g. [ʊ] by a front vowel, e.g. [ʏ] as in [mʊtar] 'mother' vs. [mʏtar] 'mothers'. Thus, the use of morphology can be more in one language than the other.

In this Unit, we will thus study the relationship between the underlying forms of morphemes and their allomorphs; we will also describe and explain both universal and language-specific morphological patterns of human languages.

6.1 LEARNING OBJECTIVES

The prime objectives of this Unit on Morphology are:

- to know about the structure and formation of words
- to understand the relationship of words with other words
- to know the composition of derived words
- to understand various processes of word formation
- to learn about the syntactic behaviour of words
- to know about different types of languages on the basis of their word structure

6.2 WORDS AND WORDS FORMATION

6.2.1 Lexemes, Word-forms and Word family

The prime objective of morphological study is the study of 'word'. However, to understand the concept of 'word', you have to first understand the two related but different concepts called **lexemes** and **word-forms.** Lexemes are the dictionary entry for each basic concept. For example, for the verb 'go' in English, a dictionary makes a single entry 'go'. But the same verb has more than one form: 'went', 'gone' and 'going'. Thus, the different word-forms of a single lexeme indicate various aspects associated with it. For example, 'went' is the past form of 'go'; 'gone' is its perfect aspect form; 'going' is its progressive aspect form. These are word-forms of the same lexeme 'go'. Similarly, the singular and plural forms of a noun, forms of nouns due to different case markings or gender markings are also word-forms of a particular lexeme. Word-forms generally take inflectional ending to the base lexeme.

Another concept to understand the structure of words is the notion of **word-family.** For example, in English, the set comprising of the words 'think', 'thinkable', 'unthinkable', 'thinker', 'thinkability', 'thinking', 'thought', 'rethink' is a word-family.

Now, the word-forms of the lexeme are called the **inflectional forms** of the lexeme. On the other hand, the words of a word-family are called the **derivational forms**

of the lexeme. To understand the difference between inflectional forms and derivational forms, study the following example. The English sentence "I talked to a helpful person" is made of the following words: 'I', 'met', 'an', 'unhelpful' and 'person'. Out of these five different words, two, i.e. 'met' and 'unhelpful', are not made of a single morpheme: 'met' = 'talk + -ed'; 'helpful' = 'help + -ful'. Now, note that the adding of –ed to 'talk' (a verb) does not change it grammatical category (i.e. it still remains a verb). By contrast, the adding of –ful to 'help' (a noun) changes its category ('helpful' is an adjective). Thus, 'talked' is an **inflection** (i.e. an inflectional form of 'talk'); by contrast, 'helpful' is a **derivation** (i.e. a derivational form of 'help')

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- Lexeme is the term for *word*viwed lexically, e.g. the headword of a dictionary entry.

- Word-forms are the various forms of a lexeme with the same core meaning but different inflectional forms. These forms are not separate entries in the dictionary.

- Word family is the combination of all the words which are derived from the same lexeme. They have separate entries in the dictionary, unlike word-forms.

6.2.2 Content words and Function words

Words are often categorised into **content words** and **function words**. Nouns, verbs, adjectives, and adverbs are the content words. These words denote concepts such as objects, actions, attributes. They are also called **open class** of words because these words can add new words into their class. For example, the noun 'google', which initially meant a search engine of the internet, has now become also a verb meaning 'to search'. Likewise, 'GB', 'pen drive', 'email', 'download' are some new lexical entries to the dictionary of English. On the other hand, conjunctions, prepositions and articles (i.e. 'and', 'but', 'of', 'for', 'a', 'an', 'the' and the like) are **function words** because they basically serve grammatical function. They are also termed as **closed class** because they, unlike content words, do not usually add new members to their class. Pronouns are also function words in the sense that their number do not increase. Function words play a grammatical role by connecting the content words in a larger grammatical context.

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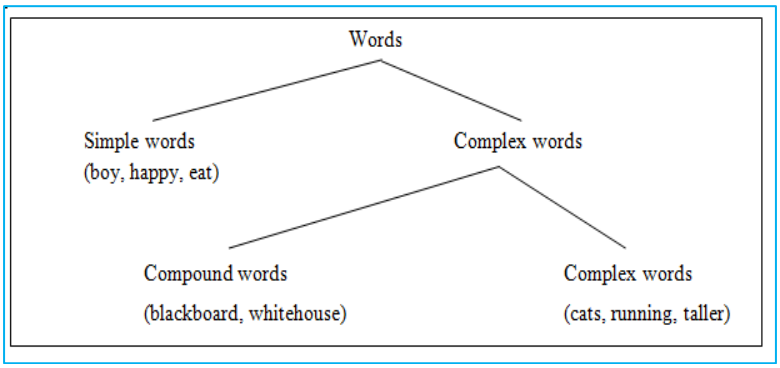
Content words: Also called **open classwords** - nouns, verbs, adjectives, and adverbs – new words are possible in this class.

Function words: Also called **closed class words** – pronouns, conjunctions, prepositions and articles - new words are not possible in this class.

6.2.3 Simple, Compound and Complex words

On the basis of their internal structure, words can be categorised as simple, compound and complex types. Simple words are generally one root and their structure is simple. **Complex words**, on the other hand, are composed of more than one morpheme. **Compound words** are formed by joining two independent free morphemes to express a different meaning while **Complex words** are formed by combining a root with inflectional morphemes.



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- **Simple words**: white, ball, brow, post, hand, horse, sea, build, industry, atom
- **Compound words:** basketball, eyebrow, whitewash, postcard, handmade, seahorse
- **Complex words:** whitening, building, postal, industrial, atomic

6.2.4 Morphemes and Allomorphs

A morpheme mostly has only one phonological form. But like various allophones of a single phoneme, there may be number of variants of a single morpheme which are called **allomorphs**.For example, in English, 'cats', 'rats', 'bats', 'dogs', 'bugs', 'buses', 'roses', 'children', 'sheep', etc. all contain the plural morpheme. But they take various forms due to phonological conditioning. The words 'cats', 'rats', 'bats', 'dogs', 'bugs', 'buses', 'roses' are phonologically conditioned because their forms are dependent on the adjacent phonemes (see Section 5.5.1).

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Examples of some words with their morpheme break-up

one morpheme: girl, man, laugh, beauty, happy, around, over

two morphemes: girl + -ish, man + -ly, beauty + -ful, happi + -ness, over + look

three morphemes: girl + -ish + -ness, man + -li + -ness, beauty + -ful + -ly

four morphemes: gentle + man + -li + -ness, sub- + naion + -al + -ity

uni- + direct + -tion + -al + -ity, un- + gentle + man + -li + -ness

Some examples of English allomorphs:

- The plural morpheme{s} has three allomorphs: {s} as in cats [kæt**s**]; {z} as in 'dogs' [dɔg**z**]; and {iz} as in 'roses' [roz**iz**].
- The past morpheme {ed} also has three allomorphs: {d} as in 'grabbed' [græb**d**]; {t} as in 'clapped' [klæp**t**]; and {id} as in 'stilted' [stilt**id**].
- Similarly, the negative morpheme in English also takes various forms depending on the following consonant, e.g. {in-} as in '**in**tolerant'; {im-} as in '**im**possible'; {iŋ} as in '**iŋ**conherent'; {ir-} as in '**ir**relevant'; and {il-} as in '**il**logical'.

6.2.5 Morphemes, Prefixes and Suffixes

Morphemes are the minimal units of meaning. A morpheme may be represented by a single sound as 'a-' as in 'a + moral'; by a single syllable as '-ish' in 'girl + -ish'; by two syllables as in 'machine'; or by more than two syllables as in 'establishment'. All the words of a language are composed of one or more morphemes. For example, the word 'girl' is one morpheme; 'girlish' consists of two morphemes; 'reestablishment' consists of three morphemes. The words 'unhealthy', 'unlikely', 'unhappy', 'unsuitable' have a morpheme 'un-' at the beginning. Words have internal structure which is rule-governed. Thus, a morpheme like '–ish' is suffixed to the main word (i.e. added after it); a

morpheme like ‘un-’ is prefixed to the main word (i.e. added before it).

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- The morpheme ‘un-’ is added before the main word, not after it. Thus, ‘un-’ is a **prefix** and the base word is a **root.**
- In the case of the English word ‘morphology’ ‘morph’ is the root while ‘-logy’ is a **suffix** as it is added after the root.

6.2.6 Free Morphemes and Bound Morphemes

All words do constitute a morpheme of itself. For example, the word ‘boy’ is a morpheme in itself with a specific meaning. In other words, words such as ‘boy’, ‘good’, ‘world’, ‘possible’, ‘construction’, etc. can occur in language without being attached to any other morpheme. They are called **free morpheme.** On the other hand, morphemes like ‘-ish’, ‘-ness’, ‘-ly’ , ‘im-‘, ‘re-‘, etc. cannot stand alone like free morphemes, although they are meaningful. Thus, they contribute to the meaning of other words by combining with them as in ‘boy + -ish’, ‘good + -ness’, ‘world + -ly’, ‘im- + possible’, ‘re- + construction’, etc. These morphemes are, therefore, known as **bound morphemes.**

Thus, bound morphemes are either **prefixes** are **suffixes**. **Infixes** are the bound morphemes which is

positioned in the middle of a morpheme. For example, in Bontoc (a language spoken in Philippines), the bound morpheme '-um-' is inserted after the first consonant of the noun or adjective to make it a verb. Thus, 'ficas' means "strong"; 'f**um**ikas' (with the infix –um) means "to be strong". By way of another example from Assamese (a major language of India), the verb 'kora' means "to do" while 'kor**ow**a' (with the infix –ow) means "to get it done". **Circumfixes** are attached to another morpheme both initially and finally. For example, in German, the past participle of a regular verb is formed by adding the prefix 'ge-' and the suffix '-t' to the verb root. Thus, for example, from the verb root 'liebe' meaning "to love" we have '**ge**lieb**t**' meaning "to be loved".

Note that all bound morphemes are **affix**es. Thus, an affix is a morpheme that is attached to a word to form a new word (e.g. 'uneasy' by prefixing 'un-' to 'easy') or to realize an inflection (e.g. 'walked' by suffixing '–ed' to 'walk').

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- Prefixes are added before the root of the word.
- Suffixes are added after the root of the word.
- Infixes are added in between the root of a word
- Circumfixes are added before and after a word.
- All these four types of bound morphemes are affixes.
- It is a convention to write an affix with a hyphen on

the side that they are attached (or bound): un-,-ed.

6.2.7 Root, Stem, and Base

A **root** is the morpheme to which all types of affixes (prefix, suffix, infix and circumfix) are attached to. In fact, it is that part of the word which is left after removing all the affixes. For example, the word 'meaningfulness' consists of four morphemes. After removing all the three affixes, '-ing', '-ful' and '-ness', the only morpheme that remains is 'mean', which can stand on its own and also carries the core lexical content of 'meaningfulness'. Hence, 'mean' is the root of the word 'meaningfulness'. A root cannot be broken down into smaller pieces. A **stem,** on the other hand, is a word (root+affix) that may be further affixed to derive a new word, e.g. 'sensible' is a stem (composed of root 'sense' = suffix '–ible') that can be further affixed by –'-ity', to form 'sensibility'. A **base** is any form to which a process applies, e.g. in the case of the form or word 'unhappy', the base is 'happy'; then, 'unhappy' is the base for 'unhappiness' (i.e. 'unhappy'+-ness). Thus, both a root and a stem are bases.

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- All roots are bases, but all bases are not roots.
- Bases which are not roots are stems.

6.3 MORPHOLOGICAL RULES

Morphological knowledge has two components: knowledge of the individual morphemes and knowledge of the **morphological rules** by which the morphemes are combined to form meaningful words. Consider, for example, the following morphological rules in English:

Adjective + '-ify' = Verb e.g. pure + '-ify' = purify
Verb+'-cation'=Noun e.g. purify+'-cation'= purification

Bound morphemes such as '-ify' and '-cation' are called **derivational morphemes** becauseby using them a new word with a new meaning is derived (as in the examples above). The form that results from the addition of a derivational morpheme is called a **derived word.**

6.4 PRODUCTIVITY

Words are formed from the lexemes present in a speaker's mental lexicon by applying morphological rules. This is called **productivity**. Productivity is, however, a matter of degree where some rules are more productive than others, i.e. they *freely* form new words from the list of free and bound morphemes in the speaker's mind. Thus, the prefix 'en-' and the suffix '-able' are morphemes which can be freely used with base nouns and verbs to produce new verbs and adjectives.

***en-* + Noun = Verb**	**Verb + *-able* = Adjective**
en- + cash = encash	accept + -able = acceptable
en- + cage = encage	believe + -able = believable
en- + rich = enrich	change + -able = changeable

6.5 WORD FORMATION PROCESSES

6.5.1 Inflection and Derivation

As observed, there are two principal word-formation processes: **inflection** and **derivation.** Derivational morphemes form new words in two different ways:

- By changing the meaning of the word as in the adjectives 'happy' - 'unhappy'. In the example, the addition of the prefix 'un-' has reversed the meaning of the base, but it has not has not changed its grammatical category (both 'happy' and 'unhappy' are adjectives). Thus, such affixes are called **class maintaining** derivational morphemes.
- By changing the grammatical category of the base as in 'happy'-'happily'. In this example, the addition of the suffix 'ly-' has transformed an adjective into an adverb. Thus, such affixes are called **class changing** derivational morphemes.

Unlike derivational morphemes, inflectional morphemes do not change the core meaning of a morpheme or a word. They also never change the grammatical category of a morpheme. They only modify the form of a word as in 'book'-'book'; 'go'-'going'.

Some inflectional morphemes in English are:

plural marking '-s' as in 'book' vs. 'books'

degree of comparison '-er' and '-est' as in 'slow' – 'slower' – 'slowest'

past tense morpheme '-ed' as in 'walk' vs. 'walked'

progressive morpheme '-ing' as in 'read' vs. 'reading'.

6.5.2 Types of Word Formation Processes

Some of the major types of word formation processes are discussed below.

1. **Affixation:** It is a kind of word formation process which adds derivational affixes (prefix, suffix, infix or circumfix) to roots or stems to form new words. It is a very common and productive morphological process in languages. For example, the suffix '-er', when added to a verb, results in an agentive noun: dance (verb) + -er = dancer (agentive noun). Again, the prefix 'in-', when added to any adjective, results in a negative word: in- + complete = incomplete.

2. **Compounding:** It is a kind of word formation process which combines two or more free morphemes (usually a root) to form a new word. For example, the compound 'blackboard' is a combination of two roots 'black' and 'board'. Such compounds behave as single words both

grammatically and semantically. They usually do not take derivational affixes but can take inflectional affixes: ‘blackboards’, ‘bathrooms’, ‘school buses’, etc. The meaning of a compound usually derived from the individual meanings of their component elements: a ‘blackboard’ is a board of which the colour is black; a ‘bathroom’ is a room meant for taking bath; a ‘school bus’ is a bus meant for the service for a school; a bookstore’ is a store which sells books’, etc. Usually, the second element determines the grammatical category of the compound. For example, in ‘blackboard’, ‘black’ is an adjective and ‘board’ is a noun so that the compound is a noun.

3. **Symbolism:** It is a kind of word formation process which alters the internal phonemic structure of a morpheme to indicate another grammatical function. For example, in English, the singular noun ‘tooth’ is spelt as ‘teeth’ in its plural form. Likewise, verbs like ‘sing’, ‘sink’ are spelt as ‘sung’ and ‘sunk’ in the past participle form. These forms are often known as irregular forms as they do not follow the regular pattern of plural formation and participle formation in English.

4. **Reduplication:** It is the word formation by which the whole of a root/stem, or part of it is repeated to express a particular grammatical function. It may be partial or complete reduplication. For example, in Indonesian, the word for a noun is completely reduplicated to imply the plural form of it as in ‘rumah’ (house) and ‘rumahrumah’ (houses). Example of partial reduplication can be found in many languages. One

such language is Samoan where ‘manao’ means “he wishes” and ‘mananao’ means “they wish” (a syllable of the singular form ‘na’ is simply repeated to imply plurality).

5. **Suppletion:** Suppletion refers to a word formation process which completely changes the form of a root where the new form inherits no sounds or letters from its source. For example, in English, we have ‘weak-weaker-weakest’, but not ‘good-better-best’. In the case of the second example, ‘better’ and ‘best’ inherit no sounds or letters from its source ‘good’, unlike ‘weaker’ and weakest’ in the first example. Thus, ‘better’ or ‘best’ is a suppletive form.

6. **Acronym:** In this kind of word formation process, a new word is formed by adding the initial letters of the constituent words of a larger phrase which is usually a name of some entity. For example, NASA is formed by the initial letters of each word in National Aeronautics and Space Administration. Likewise, RADAR stands for Radio Detection AndRanging; NATO stands for North Atlantic Treaty Organisation; FB stands for Facebook, etc.

7. **Clipping:** In this kind of word formation process, new words are formed by shortening other words or morphemes either by eliminating the initial part, the last part or both parts. For example, ‘phone’ is derived from ‘telephone’; ‘fridge’ from ‘refrigerator’; ‘gym’ from ‘gymnasium’, etc. These clipped forms slowly enter the vocabulary of a language as informal words and then gets more familiarised with time.

8. **Blending:** It is a word formation process in which new words are formed by combining parts of two (or more) words. The parts are usually the beginning of the first word and the later part of the second word. For example, the word 'motel' is formed by adding 'mall' and 'hotel' to indicate a place where there is a place to shop and stay as well. Other examples include, 'brunch' ('breakfast' and 'lunch'), 'travelogue' ('travel' and 'catalogue') and 'camcorder' (camera + recorder), etc.

9. **Borrowing:** A huge number of words come into existence due to influence and contact of other (foreign) languages. These words generally are adapted in accordance to phonetic and phonological rules of the borrowing language. For example, words like 'pizza' (from Italian), 'tango' (from Spanish), 'burger' (from German) and 'chutney' and 'samosa' (from Hindi) are borrowed to English. It is obvious that when words are borrowed, the concept they carry get absorbed into the culture and vocabulary of the borrowing language.

10. **Back formation:** In this type of word formationprocess, new words are formed by deleting an affix from a word. A major source of backformations in English has been words that end with '-or' or'-er' and mean an agent, e.g. 'editor', 'peddler', 'stoker'. Because hundred of words ending in these affixes are the result of affixation (e.g. 'drive' + '-er' = 'driver'), it was assumed that these words too had been formed by adding '-er' or '-or' to a verb (like 'drive' in the example above). By the process of backformation, this

led to the conclusion that ‘edit’, ‘peddle’, and ‘stoke’ exist as verbs.

11. **Word coinage:** It is the most simple word formation process where new words are formed either deliberately or accidentally due to the introduction of new ideas, processes and concepts. ‘Computer’, ‘xerox’, ‘google’ and ‘pendrive’ are such new words which have entered into the vocabulary of English as well as many other languages with the advent of computers and related concepts like internet, etc. One subtype of coinage is **eponym** in which words are based on a proper name such as ‘sandwich’, ‘jean’ and ‘watt’.

12. **Conversion:** Conversion is assigning an already existing word to a new syntactic category. For example, in the beginning, ‘google’ was the name of a search engine, but it is now widely used as a verb as in ‘If you don’t find the book in the library, then google it in the internet’. Conversion is also known **zero derivation**.

6.6 MORPHOLOGICAL TYPES OF LANGUAGES

Languages of the world have been classified according to the similarities and differences in respect to the ways in which they form their words. Thus, we have three types of languages: isolating**,** agglutinating**,** and synthetic.

In an **isolating language**, also called an **analytic language**, all words are free morphemes, and there are no affixes. Chinese is the most well-known isolating language. By contrast, an **agglutinating language** makes extensive

use of polymorphemic words (i.e. words containing a root and one or more affixes) and each morpheme has a separate grammatical function. Turkish is an example of an agglutinating language, e.g. the word 'evleriden' is made up of 'ev' (= house); '-ler' (= plural); '-i' (= possessive); '-den' ablative case (i.e. 'from'), so 'from their houses'. On the other hand, a **synthetic language** also, like an agglutinating language, makes extensive use of polymorphemic words, but it often uses **portmanteau morphemes** (i.e. a single morpheme that is used to encode more than one grammatical function, e.g. the affix '-a' in Russian 'dom-a' meaning 'house' simultaneously marks genitive case, singular number, and masculine gender. Latin and Greek are good examples of such a language. A synthetic language is also called an **inflectional** or **fusional** language (a language which is very *highly* synthetic is called **polysynthetic** language).

However, this classification is not exhaustive and some languages do not exactly fit into any one of these types and also that some fit in more than one way. Hence, world languages and their morphological types rather make a continuum.

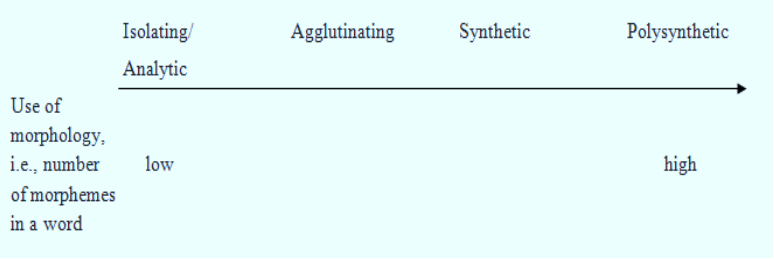


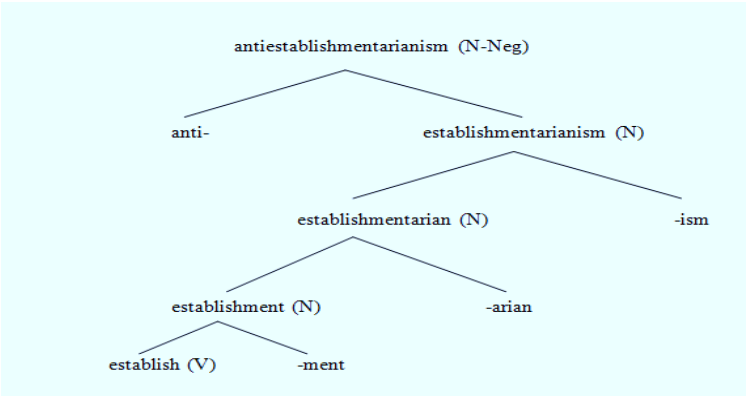
Figure 3 Continuum of morphological complexity in different types of languages

This gradable continuum ranges from the most radically isolating to the most highly polysynthetic languages. The position of a language in this continuum can be determined by its degree of synthesis, i.e., the ratio of morphemes per word in a random text of the language. The more morphemes a language has, the closer it occurs towards the polysynthetic end in the continuum.

6.7 THE HIERARCHICAL STRUCTURE OF DERIVED WORDS

Derivational morphemes are added to the root of a word one by one and thus they constitute a hierarchy in a derived word (see Section 6.5.1). This is shown with the help of an example of a complex word, 'antiestablishmentarianism', in Figure 4 below.

As you can see from the hierarchical structure representation, the root 'establish', which is a verb, changes it grammatical category and becomes a noun when it is suffixed with '-ment'; 'establishment' is then suffixed with '-arian', and then with '–ism'. A negative prefix 'anti-' is then prefixed to it. Thus, derivational morphemes are affixed to the root and the stems to make a word with a complex structure.



After all such derivations are complete, inflectional morphemes (e.g. –'s' meaning plurality)
can be added: e.g. misinterpretations (= interpret + ation = interpretation; mis + interpretation = misinterpretation; misinterpretation+-s)

6.8 MORPHOLOGICAL ANALYSIS

Native speakers of a language have the ability to identify the individual morphemes in a morphologically complex word. Let us look at an example from English.

Adjective	**Meaning**
ugly	very unattractive
uglier	more ugly
ugliest	most ugly
pretty	nice looking
prettier	more nice looking
prettiest	most nice looking
tall	large in height
taller	more tall
tallest	most tall etc

Let us now find out from the list above the individual words for 'very attractive', 'nice looking' and 'large in height' and also the morphemes for 'more' and 'most' (i.e., the comparative and superlative degrees in English). The words are 'ugly', 'pretty', and 'tall'. Then, by considering the forms, uglier-prettier-taller and ugliest-prettiest-tallest, you can safely conclude that '-er' corresponds to 'more' and '-est' corresponds to 'most'.

6.9 SUMMING UP

In this Unit, we have learnt that words are of different types and they are formed by adding different units known as morphemes. Morphemes may or may not have their own lexical meaning but they always carry some package of information which contribute to the overall meaning of a single word. Morphemes can also be of different types depending on the type of information they carry – some of them can change the meaning as well as the class of the root word while some others cannot. We have also been introduced to the different types of word formation processes. Every language choose few or some of these strategies to from their words to express meaning.

6.10 ASSESSMENT QUESTION

1. Answer the following questions briefly.

g. What is a word family? Describe with examples.
h. Differentiate between content and function words.
i. What is an allomorph. Give examples.
j. Write a note on affixation. What are different types of affixes found in languages?
k. Write a note on compounding as a word formation process.

2. What are the different types of languages on the basis of morphology?

3. State whether the following statements are *true* or *false*. Rewrite the false statements correctly.

a. Content words are also known as closed class.

b. Open class of words do not usually add new members to their class.

c. Infixes are attached to another morpheme both initially and finally.

d. The word 'reestablishment' consists of four morphemes.

e. Back formation is a process in which new words are formed by combining parts of two or more words.

f. NASA, a word formed by the initial letters of each word in National Aeronautics and Space Administration, is an example of suppletion.

g. All bases are roots.

h. Agglutinative languages do not go for affixation.

i. Latin and Greek are examples of isolating type of languages.

j. Inflectional morphemes can be added before all the after the derivations are complete.

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